

# At a Glance

*Receiving valves and television C.R. tubes*

## Equivalents

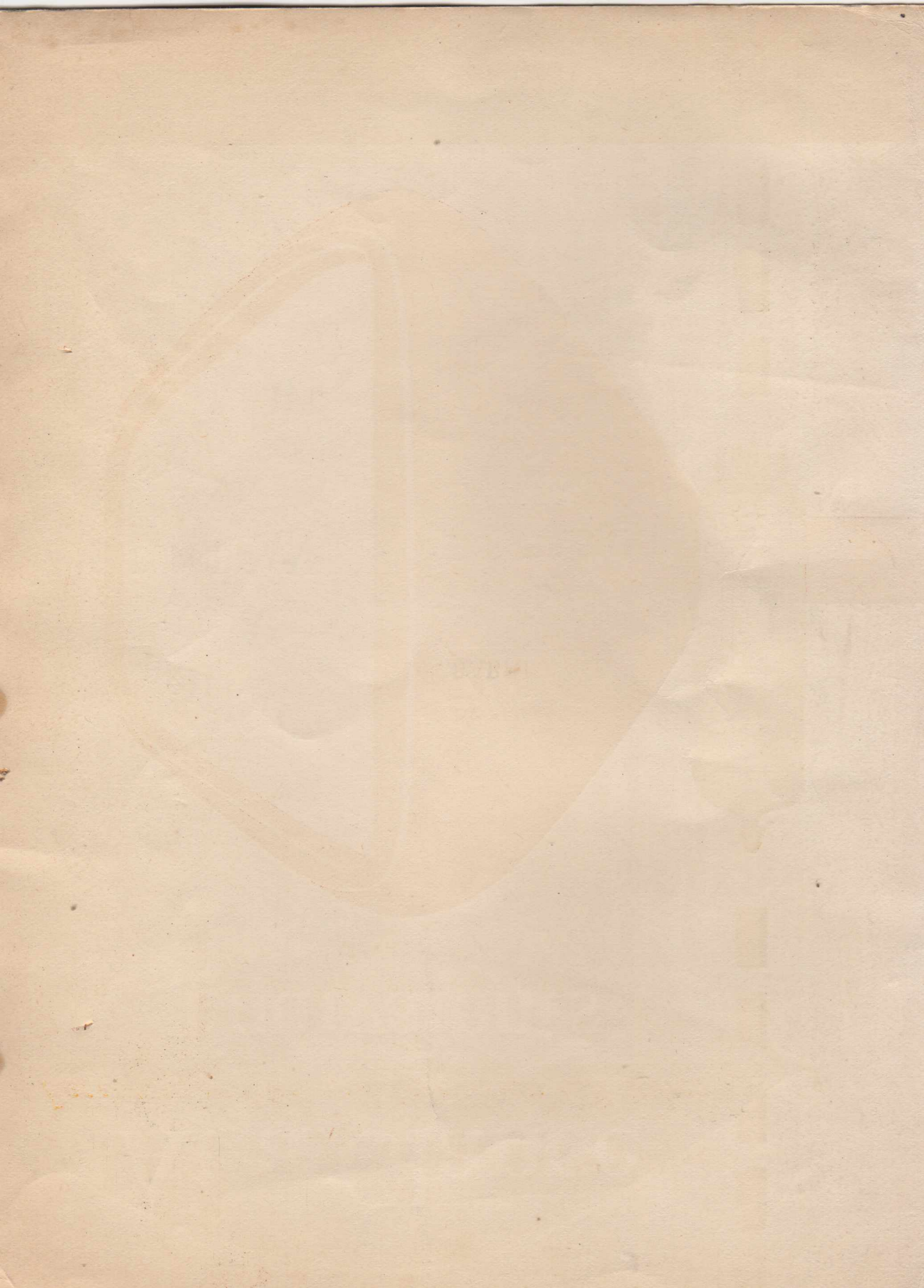
BRITISH  
U. S. A.  
EUROPEAN  
AND  
SERVICE TYPES

by  
B. B. BABANI



WALTON & BECKETT TRADING CO.  
21 SWANSTON ST.  
MELBOURNE







**" AT A GLANCE "**

Radio Valve & Television Tube  
EQUIVALENTS

by

**B. B. BABANI**

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## Contents

Introduction. ....	IV
Foreign Preliminaries. ....	V
Commercial Valve Equivalents. ....	1
Supplementary Valves. ....	33
C.V. Types with Commercial Equivalents. ....	34
Commercial Types with C.V. and Service Equivalents. ....	42
British Army Valves with Commercial Equivalents. ....	49
Royal Navy Valves with Commercial Equivalents. ....	50
Royal Air Force Valves with Commercial Equivalents. ....	50
War-time Civilian Valves with Commercial Equivalents. ....	50
U.S.A. Service Types with Commercial Equivalents. ....	51
Television Picture Tubes with Suggested Replacements. ....	52



## INTRODUCTION

To use the table of commercial equivalents, identify the valve to be replaced in the TYPE column, all equivalents may then be read off across the page without further reference.

In the column headed EUPN will be found valve types originating in Europe from numerous manufacturers such as Philips, Valvo, Telefunken, Fivre etc. American valves will be found in the column headed U.S.A. The remaining columns list valves produced by the important British manufacturers. When replacing a valve in the high frequency stages of a receiver, it should be remembered that re-alignment is desirable to ensure peak performance.

On page 33, details are given of valve equivalents received too late for inclusion in the main tables, these are listed as Supplementary Valves.

Attention is drawn to the industrial types quoted in the Equivalent Tables. These have been developed to meet the stringent demands of modern industry where reliability is of the utmost importance, electrically they have standard equivalents. An example is type 6058, for normal working this may be replaced with a 6AL5 or an EB91, but if the equipment is to continue working under stringent conditions an industrial type should be selected.

Certain valves are suitable for use with either parallel or series heater circuits, that is AC or AC/DC equipment. Equivalents of a given valve are not necessarily suitable for both applications and where this point arises a footnote has been added identifying types suitable for both series and parallel circuits or those intended for series circuits. An example is the OM10. Types 6K8, X147, 6C31, ECH35, X61M, 6E8 and

6TH8 are equivalents when used with parallel heater circuits because they all have 6.3 volt heaters. Equivalent types ECH3G and ECH33 have the same heater voltage and current rating as the OM10 (6.3v. 0.2A) and are equally suitable for series or parallel circuits. The CCH35 has a heater rating of 7.0v 0.2A and is intended for series circuits only.

The C.V and Armed Forces sections will be found particularly useful when attempting to identify valves obtained from ex-Government sources.

A complete section is devoted to Television Picture Tubes, this feature is unique in its conception.

Not only have equivalents been shown, but also near equivalents. The necessary electrical changes are outlined in the remarks column. It should be noted that the changes relate only to the electrical characteristics of the various tubes and that differences in physical measurements have not been considered. This may necessitate slight structural alterations in certain cases.

When substituting ordinary tubes for ion trap models, care should be taken to see that there is sufficient room on the tube neck, after the scanning and focus components have been mounted to position the ion trap magnet.

It is sometimes difficult to centre the picture with these tubes without modifying the focus mounting brackets, in cases of doubt or difficulty, the ion trap tube manufacturer should be consulted regarding its suitability.

Tubes with an external coating (aquadag) can be used to replace plain glass tubes, but arrangements should be made to connect the coating to chassis potential.



## “D’UN COUP D’OEIL”

Equivalents de lampes radio et tubes images de télévision

### Table des Matières

	Page
Introduction. ... ..	VI
Equivalents de lampes du commerce. ... ..	1
Lampes supplémentaires. ... ..	33
Types de lampes courantes * avec équivalents du commerce. ... ..	34
Types du commerce avec équivalents dans les lampes courantes et des forces armées. ... ..	42
Lampes de l’armée britannique avec équivalents du commerce. ... ..	49
Lampes de la marine royale avec équivalents du commerce. ... ..	50
Lampes de la Royal Air Force avec équivalents du commerce. ... ..	50
Lampes civiles du temps de guerre avec équivalents du commerce. ... ..	50
Types des forces armées des E.U.A. avec équivalents du commerce. ... ..	51
Tubes images de télévision avec suggestions pour remplacements. ... ..	52

\* Lampes courantes (C.V.) est une désignation du gouvernement britannique.



## INTRODUCTION

Pour employer la table des équivalents du commerce, identifier la lampe à remplacer dans la colonne TYPE, on peut alors lire tous les équivalents en regard sur la page sans plus de référence.

Dans la colonne ayant pour titre EUPN., on trouvera les types de lampes originaires d'Europe et provenant de nombreux fabricants tels que Philips, Valvo, Telefunken, Fivre, etc. Les lampes américaines se trouvent dans la colonne précédée de U.S.A. Les autres colonnes donnent la liste des lampes vendues par les fabricants britanniques importants. Lorsqu'on remplace une lampe aux étages de haute fréquence d'un récepteur, il importe de ne pas oublier qu'il est bon d'aligner à nouveau pour être sûr d'obtenir un rendement maximum.

A la page 33, on trouvera des détails relatifs aux équivalents de lampes reçus trop tard pour pouvoir être incorporés dans les tables principales. La liste en est donnée sous la rubrique "Lampes supplémentaires".

Nous attirons l'attention sur les types industriels mentionnés dans les tables d'équivalents. Ces derniers ont été développés pour faire face aux exigences rigoureuses de l'industrie moderne, où la sûreté de leur emploi est chose de la plus haute importance, électriquement, ils ont des équivalents standards. Le type 6058 est un exemple, pour emploi normal, on peut remplacer celui-ci par un 6AL5 ou un EB91, mais si le matériel est destiné à continuer le travail dans des conditions rigoureuses, il faudrait plutôt choisir un type industriel.

L'emploi de certaines lampes peut convenir avec circuits de chauffage soit en parallèle, soit en série, c'est-à-dire un matériel à courant alternatif ou alternatif /continu. Les équivalents d'une lampe donnée ne conviennent nécessairement pas à ces deux applications et, lorsque le cas se présente, une note est ajoutée au bas de la page qui permet d'identifier les types convenant aux deux circuits, en série et parallèles, et ceux qui sont destinés aux circuits en série. Prenons pour exemple le OM10. Les types 6K8, X147, 6C31, ECH35, X61M, 6E8 et 6TH8 sont équivalents lorsque on les emploie avec circuits de chauffage en parallèle parce qu'ils ont tous des éléments chauffants de 6.3 volts. Les types équivalents ECH3G et ECH33

ont un voltage d'élément chauffant et une intensité de courant identiques à ceux du OM10 (6.3 volts 0.2 amp.) et conviennent également aux circuits en série ou en parallèle. Le CCH35 a un élément chauffant dont l'intensité est de 7.0 volts 0.2 amp. et il n'est destiné qu'aux circuits en série.

Les sections des lampes courantes (C.V.) et des forces armées seront d'une grande utilité surtout lorsqu'on essaye d'identifier des lampes provenant des anciens stocks du gouvernement.

Une section complète est consacrée aux tubes images de télévision, aspect unique dans sa conception.

Il a été montré non seulement des équivalents, mais encore des équivalents approximatifs.

Les changements électriques nécessaires sont indiqués dans la colonne des remarques.

Il importe de remarquer que les changements ne se rapportent qu'aux caractéristiques électriques des divers tubes et que les différences relatives aux dimensions physiques n'ont pas été prises en considération. Il s'ensuit que certaines retouches légères de structure s'imposeront peut-être dans certains cas.

En substituant des tubes ordinaires aux modèles piège à ions, il importe de vérifier soigneusement qu'il y a suffisamment d'espace au col du tube, après le montage des éléments de balayage et de mise au point pour installer l'aimant de piège à ions.

Il est parfois difficile de centrer l'image avec ces tubes sans modifier les supports de montage de mise au point en cas de doute ou de difficulté, on devrait consulter le fabricant du tube piège à ions pour savoir s'il peut convenir.

Les tubes revêtus d'un enduit extérieur (aquadag) peuvent s'employer en remplacement de tubes en verre ordinaire, mais des dispositions devront être prises pour relier l'enduit au potentiel du châssis.

### Notes au bas de la page employées dans les Tables

Mercury vapour, restricted application=	Vapeur de mercure, application restreinte
Series or Parallel circuits=	Circuits en série ou en parallèle
Series circuits only=	Circuits en série seulement



## “AUF DEN ERSTEN BLICK”

Radoröhren und Fernsehröhren.  
Equivalentente.

### Inhaltsangabe

	Seite
Einleitung ... ..	viii
Equivalentente handelsübliche Röhren ... ..	1
Zusätzliche Röhren ... ..	33
C.V.* Typen mit handelsüblichen Equivalententen ... ..	34
Handelsübliche Typen mit equivalententen C.V.* Typen und solchen der Streitkräfte ... ..	42
Röhren des britischen Heeres mit handelsüblichen Equivalententen ... ..	49
Röhren der britischen Marine mit handelsüblichen Equivalententen ... ..	50
Röhren der britischen Luftwaffe mit handelsüblichen Equivalententen ... ..	50
Röhren der Kriegszeit für Zivilgebrauch mit handelsüblichen Equivalententen ... ..	50
Typen der Streitkräfte der Vereinigten Staaten mit handelsüblichen Equivalententen ... ..	51
Fernsehröhren mit empfohlenen Ersatzten ... ..	52

\*C.V.—“Common Valves” (Gewöhnliche Röhren), eine von der britischen Behörde eingeführte Klassifikation.

## “IN EEN OOGWENK”

Radiobuizen en Televisie Beeld-buizen.  
Equivalententen.

### Inhoud

	Bladz
Inleiding. ... ..	IX
Commerciële Buizen Equivalententen. ... ..	1
Supplement Buizen. ... ..	33
C.V.* Types met Commerciële Equivalententen. ... ..	34
Commerciële Types met *C.V. en Leger Equivalententen. ... ..	42
Britse Leger-Buizen met Commerciële Equivalententen. ... ..	49
Kon. Marine Buizen met Commerciële Equivalententen. ... ..	50
Kon. Luchtmacht Buizen met Commerciële Equivalententen. ... ..	50
Burger Oorlogs-buizen met Commerciële Equivalententen. ... ..	50
U.S.A. Leger Types met Commerciële Equivalententen. ... ..	51
Televisie Beeld-buizen met Voorgestelde Vervangingen. ... ..	52

\* C.V.—“Common Valves” (Gewone Buizen, Classificatie van de Britse Regering)



## EINLEITUNG

Zum Gebrauch der Tabelle der handelsüblichen Equivalente ist zunächst die zu ersetzende Röhre in der Spalte "Type" aufzusuchen, alle equivalenten Röhrentypen können dann in derselben Zeile ohne weiteres Nachschlagen unmittelbar abgelesen werden.

Die Spalte "EUPN" enthält Röhren einer ganzen Reihe europäischer Erzeuger, wie Philips, Valvo, Telefunken, Fivre usw. Amerikanische Röhren sind aus der Spalte "U.S.A." zu entnehmen. Röhren der bedeutenden britischen Erzeuger sind in den restlichen Spalten aufgezählt.

Beim Ersatz einer Röhre in den Hochfrequenzstufen eines Empfängers soll nicht übersehen werden, dass zur sicheren Erzielung der Bestleistung des Empfängers eine Neuabstimmung zu empfehlen ist.

Auf Seite 33 sind equivalente Röhren aufgezählt, deren Einzelheiten für die Aufnahme in die Tabellen zu spät erhalten wurden, sie werden als zusätzliche Röhren angeführt.

Auf die in den Tabellen der Equivalente angeführten industriellen Typen wird besonders verwiesen. Sie sind im Hinblick auf die hohen Ansprüche der modernen Industrie entwickelt worden, wo Verlässlichkeit von höchster Wichtigkeit ist; vom elektrischen Standpunkt aus haben sie Equivalente der normalen Ausführung. Ein Beispiel hierfür ist Type 6058, unter normalen Verhältnissen kann diese Röhre durch die Typen 6AL5 oder EB91 ersetzt werden, falls sie aber in einem Apparat verwendet werden, der dauernd schwierigen Betriebsbedingungen unterworfen ist, so soll eine der industriellen Typen gewählt werden.

Bei manchen Röhren können die Heizstromkreise sowohl parallel als auch in Serie geschaltet werden, d.h. sie sind für Verwendung in Wechselstrom- oder in Wechselstrom/Gleichstromapparaten geeignet. Equivalente einer bestimmten Röhre sind nicht notwendigerweise für beide Anwendungen verwendbar; wo dies der Fall ist, ist eine Fussnote beigefügt, die für Serien- und Parallelschaltung geeignete Typen oder nur für Serienschaltung geeignete Typen namhaft macht. Ein Beispiel ist die Type OM10. Die Typen 6K8, X147, 6C31, ECH35, X61M, 6E8 und 6TH8 sind Equivalente bei parallel geschalteten Heizstromkreisen, da sie alle mit 6.3V Heizspannung

arbeiten. Die equivalenten Typen ECH3G und ECH33 haben die gleiche Heizspannung und Heizstromstärke wie die Type OM10 (6.3V., 0.2A.) und sind sowohl für in Serie als auch parallel geschaltete Stromkreise verwendbar. Die Type CCH35 hat Nennwerte von 7.0V. und 0.2A. für den Heizstrom und ist nur für Heizstromkreise in Serienschaltung bestimmt.

Die Abschnitte über C.V. Typen und über Typen der Streitkräfte werden besonders dann von Nutzen sein, wenn die Daten von aus öffentlichen Beständen erworbenen Röhren festgestellt werden sollen.

Ein ganzer Abschnitt ist den Fernsehröhren gewidmet, es ist dies die erste veröffentlichte Zusammenstellung dieser Art.

Nicht nur Equivalente, sondern auch ungefähre Equivalente sind angeführt.

Die erforderlichen elektrischen Abänderungen sind in der Anmerkungsspalte aufgezählt.

Nur die auf die elektrischen Charakteristika bezüglichen Abänderungen sind angeführt, Unterschiede in den Abmessungen sind nicht berücksichtigt. In einzelnen Fällen können dadurch kleinere Änderungen im Aufbau erforderlich werden.

Wenn gewöhnliche Röhren durch solche mit Ionenscheider ersetzt werden, so ist darauf zu achten, dass nach Einbau der Abtast- und Bündelungselemente am Röhrenhals noch genügend Raum für den Einbau des Ionenscheidermagneten verbleibt. Bei diesen Röhren ist das Einstellen der Bildmitte manchmal ohne Abänderung der Einbaukonsole für die Bündelung schwierig. Im Zweifelsfalle soll der Erzeuger der Röhre mit Ionenscheider bezüglich ihrer Eignung befragt werden.

Röhren mit Aussenschicht (Aquadag) können zum Ersatz gewöhnlicher Glasröhren verwendet werden, doch soll in diesem Fall der Belag an die Chassisspannung angeschlossen werden.

### In den Tabellen verwendete Fussnoten

Mercury vapour,	Quecksilberdampf,
restricted application	= beschränkte Verwendung
Series or Parallel circuits	= Serien- oder Parallelschaltung
Series circuits only	= Nur Serienschaltung



## INLEIDING

Om van de tabel van commerciële equivalenten gebruik te maken, diene men eerst de te vervangen buis te identificeren in de TYPE kolom, waarna alle equivalenten zonder verdere verwijzing kunnen worden afgelezen dwars over de bladzijde. In de kolom onder het hoofd EUPN, treft men de typen van buizen aan die afkomstig zijn van talrijke fabrikanten in Europa, zoals Philips, Valvo, Telefunken, Fivre, enz. Amerikaanse buizen worden aangetroffen in de kolom onder het hoofd U.S.A. De overige kolommen geven buizen gefabriceerd door de vooraanstaande Britse fabrikanten.

Wanneer een buis in de hoge frequentie phases van een ontvangoestel vervangen moet worden, diene men er aan te denken, dat het gewenst is opnieuw te richten om de top-prestatie te bereiken.

Op bladzijde 33 worden buis equivalenten aangetroffen die te laat ontvangen werden om nog op de hoofdlijsten te worden geplaatst. Deze zijn opgenomen als Supplement Buizen.

De aandacht wordt gevestigd op de industriële typen, welke vermeld zijn in de Equivalent Tabellen. Deze zijn ontworpen om aan de dringende vraag van de moderne industrie, waar betrouwbaarheid van het uiterste belang is te voldoen. Op electrisch gebied hebben zij standaard equivalenten. Een voorbeeld is type 6058 : voor normaal gebruik kan dit vervangen worden door een 6AL5 of een EB91, maar als de installatie voortdurend onder druk moet werken, diene men een industrieel type te kiezen.

Bepaalde buizen zijn alleen geschikt voor gebruik op ofwel parallel of serie verwarmingsstroombanen, d.w.z. wisselstroom of wisselstroom/gelijkstroom installaties. Equivalenten van een bepaalde buis zijn niet noodzakelijkerwijze geschikt voor beide toepassingen en waar dit geval zich voordoet is een voetnoot toegevoegd aangevende welke types geschikt zijn voor zowel serie als parallel schakeling of die bedoeld voor serie kringloop. Een voorbeeld is de OM10. De Types 6K8, X147, 6C31, ECH35, X61M, 6E8 en 6TH8 zijn equivalenten wanneer gebruikt voor parallel verwarmingsstroombanen, omdat ze allen 6.3 Volt verwarmers hebben. Equivalent-types ECH3G, en ECH33 hebben hetzelfde verwarmings-voltage en

stroomsterkte als de OM10 (6.3 V. 0.2A) en zijn geschikt voor serie of parallel stroombanen. De CCH35 heeft een verwarmings-stroomsterkte van 7.0 V. 0.2 A. en is uitsluitend bedoeld voor serie stroombanen.

De C.V. en Leger groepen zullen speciaal van dienst zijn wanneer getracht wordt buizen te identificeren die uit ex-Regerings-bronnen afkomstig zijn.

Een complete afdeling is gewijd aan Televisie Beeld-buizen. Dit gedeelte is uniek in haar samenstelling.

Niet alleen zijn equivalenten gegeven, maar ook dichtstbijkomende equivalenten.

De noodzakelijke electrische wijzigingen zijn aangegeven in de opmerkingen-kolom.

Er wordt op attent gemaakt, dat de wijzigingen alleen betrekking hebben op de electrische eigenschappen van de verschillende buizen en dat verschillen in eigenlijke afmetingen niet in aanmerking zijn genomen. In bepaalde gevallen kan dit geringe structurele wijzigingen noodzakelijk maken.

Bij het vervangen van gewone buizen voor ionen-valklep modellen, diene men er op te letten dat er voldoende ruimte is op de buis-hals, nadat de 'scanning' (ablenkung) en focus onderdelen gemonteerd zijn, om de ionen valklep-magneet aan te brengen.

Het is soms moeilijk om het beeld in het midden te krijgen met deze buizen, zonder de focus monteringssteunen te wijzigen. In gevallen van twijfel of moeilijkheden gelieve men zich met de fabrikant van de ionen valklep-buis in verbinding te stellen omtrent het al dan niet geschikt zijn daarvan. Buizen met een aquadag (aussenschicht) laag aan de buitenzijde kunnen worden gebruikt ter vervanging van gewone glasbuizen, maar maatregelen dienen te worden genomen om deze laag te verbinden met het chassis potentieel.

### Voetnoten gebruikt in de tabellen.

Mercury-vapour, restricted operation=	Kwik-gassen, beperkt gebruik
Series or Parallel circuits=	Serie of Parallel stroombanen
Series circuits only=	Serie stroombanen alleen.



## “ A PRIMA VISTA ”

Equivalenti di Valvole da Radio e di  
Tubi R.C. per Televisori

### Indice

	Pagina
Introduzione. ... ..	XI
Equivalenti di valvole commerciali. ... ..	1
Valvole supplementarie. ... ..	33
Tipi C.V.* con Equivalenti Commerciali. ... ..	34
Tipi Commerciali con Equivalenti C.V.* e quelli delle Forze Armate. ... ..	42
Valvole dell'Esercito Britannico con Equivalenti Commerciali. ... ..	49
Valvole della Reale Marina con Equivalenti Commerciali. ... ..	50
Valvole della Reale Aeronautica con Equivalenti Commerciali. ... ..	50
Valvole Civili del tempo di guerra con Equivalenti Commerciali. ... ..	50
Tipi militari statunitensi con Equivalenti Commerciali. ... ..	51
Tubi R.C. per Televisori con Sostituzioni suggerite. ... ..	52

\*C.V.—“Valvole Comuni” (Classificazione del Governo Britannico)

## “ A PRIMERA VISTA ”

Equivalencias de Válvulas de Radio  
y Tubos de Imagen  
de Televisión.

### Indice

	Página
Introduccion. ... ..	XII
Equivalentes de Válvulas Comerciales. ... ..	1
Válvulas Suplementarias. ... ..	33
Tipos C.V.* con Equivalentes Comerciales. ... ..	34
Tipos Comerciales con Equivalentes C.V.* y de las Fuerzas Armadas. ... ..	42
Válvulas del Ejército Británico con Equivalentes Comerciales. ... ..	49
Válvulas de la Marina Real Británica con Equivalentes Comerciales. ... ..	50
Válvulas de las Reales Fuerzas Aéreas con Equivalentes Comerciales. ... ..	50
Válvulas Civiles de la época de la guerra, con Equivalentes Comerciales. ... ..	50
Tipos de las Fuerzas Armadas Estadounidenses con Equivalentes Comerciales. ... ..	51
Tubos de Imagen de Televisión con Posibles Alternativas. ... ..	52

\*C.V.—Válvulas comunes (Clasificación del Gobierno Británico).



## INTRODUZIONE

Per adoperare la Tavola di Equivalenti Commerciali, bisogna prima identificare nella colonna segnata "TYPE" (cioè Tipo) la valvola che si desidera sostituire, e poi seguendo la stessa linea attraverso la pagina si può leggere tutti gli equivalenti senza bisogno di andare alla ricerca di altre referenze.

Nella colonna intitolata EUPN si troveranno i tipi di valvole che prendono la loro origine in Europa, essendo fabbricati dai numerosi fabbricanti come Philips, Valvo, Telefunken, Fivre ecc. Le valvole di provenienza americana si troveranno nella colonna intitolata "U.S.A." Nelle colonne rimanenti vengono elencate le valvole che provengono dai fabbricanti importanti britannici. Quando si vuole sostituire una valvola nelle fasi di alta frequenza di un ricevitore, bisogna tener in mente che una nuova sintonizzazione è essenziale per ottenere il rendimento massimo.

Nella pagina 33 si troveranno dettagli degli equivalenti di valvole che sono pervenuti troppo tardi per essere inclusi nelle tavole principali. Questa sezione ha ricevuto il titolo di Valvole Supplementarie.

Sono da notare i tipi industriali elencati nelle Tavole di Equivalenti. Questi tipi sono stati sviluppati per rispondere alle esigenze sempre più rigorose dell'industria moderna, dove il funzionamento sicuro è della massima importanza. Le loro caratteristiche elettriche sono quelle normali. Il tipo 6058, per esempio, può essere sostituito da un 6AL5 o da un EB91 nelle condizioni ordinarie, ma se l'apparecchio deve continuare a funzionare sotto condizioni rigorose, si dovrebbe scegliere un tipo detto 'industriale'.

Certe valvole possono essere adoperate indistintamente con circuiti di placca o in parallelo o in serie, cioè per apparecchi C.A. o per apparecchi C.C. Gli equivalenti di una data valvola non sono necessariamente anche adatti per tutte e due applicazioni, ed in tali casi vi è stata aggiunta una nota in calce che classifica i tipi secondo se sono adatti ai circuiti paralleli e in serie oppure se sono destinati solamente per i circuiti in serie.

Un esempio di questo si trova nel OM10: I tipi 6K8, X147, 6C31, ECH35, X61M, 6E8 e 6TH8 sono tutti equivalenti quando si tratta di circuiti di placca in parallelo, perchè hanno tutti

riscaldatori da 6.3 V. I tipi equivalenti ECH3G e ECH33 hanno la stessa tensione di riscaldamento e la stessa intensità nominale come il OM10 (cioè 6.3 V, 0.2 A) e perciò si destinano ugualmente ai circuiti paralleli ed ai circuiti in serie. Il CCH35 invece ha valori nominali di riscaldamento di 7.0V e 0.2 A e perciò s'intende soltanto per i circuiti in serie.

Le sezioni per i tipi C.V. e per quelli delle Forze Armate saranno utilissime quando si vorrà identificare le valvole che provengono degli stoks liquidati del governo.

Un'altra sezione è stata consacrata ai Tubi R.C. per Televisori e questa sezione è unica nella sua concezione.

Non dà soltanto gli equivalenti ma anche gli equivalenti approssimativi.

Nelle colonne riservate alle 'Osservazioni' vengono riassunte in breve le modifiche elettriche eventualmente necessarie.

Si deve notare che tali modifiche si riferiscono solo alle caratteristiche elettriche dei vari tubi a che non sono state prese in considerazione le differenze nelle dimensioni fisiche dei medesimi. Tali differenze possono eventualmente richiedere leggere modifiche strutturali in certi casi.

Quando si vuole sostituire tubi ordinari con quelli a trappola d'ioni, bisogna prima assicurarsi che vi rimane spazio sufficiente sul collo del tubo, dopo la collocazione degli elementi di esplorazione e di messa a fuoco, per mettere a posto la calamita trappola d'ioni.

Talvolta è difficile centrare l'immagine con questi tubi senza prima modificare i sopporti dell'elemento di messa a fuoco. In casi di difficoltà o di dubbio si dovrebbe consultare il fabbricante del tubo a trappola d'ioni.

Si possono adoperare i tubi con rivestimento esterno (Aquadag) per sostituire i tubi di vetro semplice, ma in tale caso bisogna stabilire un collegamento tra il rivestimento ed il potenziale dello chassis.

### Note in calce alle Tavole

Mercury vapour, restricted application=	Vapore di mercurio Applicazione ristretta
Series or Parallel circuits=	Circuiti paralleli od in serie
Series circuits only=	Circuiti in serie solamente



## INTRODUCCION

Para consultar la tabla de equivalentes comerciales, identifíquese la válvula que se desee reemplazar buscándola en la columna marcada TYPE (tipo), con lo cual se encontrarán automáticamente todos los equivalentes, que siguen en la misma línea a continuación de la referencia original.

En la columna marcada EUPN. se encontrarán los tipos de válvulas de origen europeo producidos por numerosos fabricantes como Philips, Valvo, Telefunken, Fivre, etc. Las válvulas de origen americano se hallarán en la columna marcada U.S.A. Las columnas restantes comprenden válvulas producidas por las más importantes casas británicas del ramo. Al reemplazar una válvula en los pasos de alta frecuencia de un receptor no deberá olvidarse que es aconsejable proceder a una realineación para asegurar un rendimiento máximo.

En la página 33 se incluyen particulares de válvulas equivalentes que se recibieron demasiado tarde para poder ser incluidos en las tablas principales. Esta sección lleva el título de "Válvulas Suplementarias".

Son de notar los tipos industriales incluidos en las Tablas de Equivalentes. Se trata de tipos creados para satisfacer las severas demandas de la industria moderna, en que la seguridad y regularidad de funcionamiento son de máxima importancia. Estos tipos industriales tienen, naturalmente, desde el punto de vista eléctrico, equivalentes normales. El tipo 6058, por ejemplo, puede ser reemplazado por un 6AL5 o un EB91 para condiciones de trabajo normales, pero si se trata de equipar un aparato que deberá operar prolongadamente en severas condiciones de trabajo de carácter industrial, entonces deberá elegirse el tipo industrial de válvula.

Ciertas válvulas pueden utilizarse indistintamente en circuitos de calefacción paralelos o en serie, o sea en aparatos de C.A. o de C.A./C.C. Los equivalentes de una válvula determinada, sin embargo, no son necesariamente aptos para ambos sistemas de aplicación. Por esta razón, en los casos en que pudieran surgir dudas a este respecto se han añadido notas al pie especificando los tipos aptos para circuitos paralelos o en serie, y aquellos destinados únicamente a circuitos en serie. Véase como ejemplo el tipo OM10: Los tipos 6K8, X147, 6C31, ECH35, X61M. 6E8 y 6TH8 son equivalentes si se utilizan con circuitos de calefacción paralelos, ya que todos ellos van provistos de calentadores de 6.3 voltios. Los tipos equivalentes

ECH3G y ECH33 tienen el mismo voltaje de calefacción y la misma intensidad nominal que el OM10 (6.3V 0.2A) y son igualmente apropiados para circuitos paralelos o en serie. El tipo CCH35, por otra parte, tiene un calentador con unos valores nominales de 7.0V y 0.2A, y está destinado a circuitos en serie únicamente.

Las secciones sobre tipos de C.V. y de las Fuerzas Armadas resultarán particularmente útiles cuando se desee identificar válvulas procedentes de equipos, almacenes o proveedores gubernamentales.

Se incluye además una sección entera dedicada exclusivamente a Tubos de Imagen de Televisión —una sección única en su concepción. En ella se incluyen no sólo los tipos equivalentes, sino también los equivalentes aproximados. Las modificaciones eléctricas que puedan ser necesarias se resumen en la columna reservada a "observaciones".

Se deberá tener en cuenta que las modificaciones que se indican se refieren exclusivamente a una adecuación de las características eléctricas de los distintos tubos, sin tener en consideración las diferencias que pudiera haber en las dimensiones físicas de los mismos. En ciertos casos, diferencias en dichas dimensiones pueden hacer necesarias ligeras alteraciones estructurales.

Al efectuar una sustitución de tubos ordinarios por modelos con regulador de iones, es importante comprobar que queda bastante espacio sobre el cuello del tubo, una vez montados los elementos de barrido y de enfoque, para poder ubicar el imán del regulador de iones.

Con tubos de este tipo es a veces difícil centrar la imagen a menos que se modifiquen las bridas de montaje del enfoque. Si surgieran dudas o dificultades se deberá consultar a los fabricantes del tubo con regulador de iones en cuestión para asegurarse de que es apropiado para el montaje a que se le destina.

Pueden utilizarse tubos con capa de revestimiento exterior (Aquadag) para substituir a tubos sencillos de cristal, siempre que se hayan tomado las disposiciones necesarias para permitir una conexión del revestimiento al potencial del chasis.

### Notas al pie de las Tablas

Mercury vapour, restricted application=	Vapor de Mercurio Aplicación restringida
Series or Parallel circuits=	Circuitos paralelos o en serie
Series circuits only=	Circuitos en serie solamente







TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
2A3	-	-	-	-	-	-	-	-	-	-	45
2A6	-	-	-	-	-	-	-	-	-	-	1659
2C21	-	-	-	-	-	-	-	-	-	-	1642
2D2	-	220DD	-	-	-	-	-	-	-	-	-
2D4	-	-	-	-	-	-	-	-	-	DD465	-
2D4A	DDA41	DDL4	-	A20B	SD	D41	V914	-	D41	DD4	-
2D4B	-	-	-	-	-	-	-	-	-	DD4D	-
2D13A	-	-	-	-	-	-	-	-	-	DD13S	-
2D13C	10D1	-	-	C20C	-	-	-	-	-	DD13	-
2D21	-	-	PL21	-	-	-	-	PL21	-	-	-
2P	-	2XP	-	S30D	-	-	PA20	ACO42	-	-	-
2X2	-	-	-	-	-	-	-	-	-	-	2Y2
2XP	-	-	-	-	-	-	PA20	ACO42	-	-	879
2Y2	-	-	-	-	-	-	-	-	-	-	2X2
3A4	-	-	DL93	-	-	-	-	DL93	-	-	-
3A5	-	-	DCC90	-	-	-	-	DCC90	-	-	-
3B7	-	-	-	-	-	-	-	-	-	-	1291
3C4	-	-	DL96	-	-	-	-	DL96	-	-	3E5
3C6	-	-	-	-	-	-	-	-	-	-	XXB
3D6	-	-	-	-	-	-	-	-	-	-	3LF4
3E5	-	-	DL96	-	-	-	-	DL96	-	-	1299
3LF4	-	-	-	-	-	-	-	-	-	-	3C4
3Q4	-	-	DL95	-	-	N18	-	DL95	N18	-	3D6
3Q5	-	-	-	-	-	N15	-	DL33	N15	-	1299
3S4	-	-	DL92	DL92	-	N16	-	DL92	N16	-	-
3V4	-	-	DL94	-	-	N17	1P10	DL94	N17	-	-
4/100BU	-	-	-	-	-	N19	1P11	DL94	N19	-	-
4D1	-	-	CC2	C30B	DA	U18/20	HL132D	FW4/500	U18/20	RV200/600	-
4THA	-	-	-	A36C	-	-	HL13C	TH4B	-	HL13	-
4XP	-	-	E406N	S30C	LP4	PX4	AC/TH1	ACO44	PX4	TH4A	-
5AZ4	5Y3	-	-	-	-	U50	PP3/250	ACO44	U50	P12/250	-
5B1	-	215SG 220SG	-	K40B	-	S21	-	PM12	S21	5Y3	5Y3
5B/250A	807	807	QE06-50	-	807	S22	-	PM12A	S22	SS210	-
5T4	5U4	-	-	-	-	S23	-	-	S23	-	-
5U4	-	-	-	-	-	S24	-	-	S24	-	807
5V4	-	53KU 54KU	GZ34	-	R52	-	-	QV05-25	-	-	5933
5W4	-	-	-	-	-	-	-	-	-	-	5U4
5Y3	-	-	-	-	-	-	-	-	-	-	5931
5Z3	-	-	-	-	-	-	-	-	-	-	5T4
5Z4	-	54KU 52KU	GZ30 GZ34	-	R52	-	-	GZ30 GZ32	-	-	5931
6A4	-	-	-	-	-	-	-	-	-	-	-
6A5	-	-	-	-	-	-	-	-	-	-	5Y3
6A6	-	-	-	-	-	-	-	-	-	-	5AZ4
6A8	-	-	-	-	-	X63	-	-	B63	-	5AZ4
6AB4	-	-	EC92	-	-	-	-	EC92	X63	-	6004
6AB5	-	-	-	-	-	-	-	-	-	-	83*
6AB6	-	-	-	-	-	-	-	-	-	-	1275
6AB7	-	-	-	-	-	-	-	-	-	-	5V4
6AB8	-	63T1	ECL80	-	-	LN152	-	ECL80	-	-	52
6AC7	-	-	-	-	-	-	-	-	-	-	6B4
6AD8	-	-	EBF81	-	-	-	-	EBF81	-	-	-
6AE8	-	-	-	-	-	X79	-	-	-	-	6N5
6AF5	-	-	-	-	-	-	-	-	-	-	6N6
6AG5	-	-	EF96	-	-	-	-	EF96	-	-	1853
											6AJ7
											1649
											1852
											6134
											-
											6P5
											6BC5

\* Mercury vapour, restricted application.



COMMERCIAL EQUIVALENTS

6AG6-6C5

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
6AG6	-	-	6PX6 EL33	-	-	N147 KT61	6P25	EL33	KT61	PP6BG	6AY5 6M6 6AK7 6AC7 1649 1852 6134
6AG7	-	-	-	-	-	-	-	-	-	-	-
6AJ7	-	-	-	-	-	-	-	-	-	-	-
6AJ8	-	-	ECH81	-	-	-	-	ECH81	-	-	-
6AK5	-	-	EF95 PM05	-	DP61	-	-	EF95	-	-	5591
6AK7	-	-	-	-	-	-	-	-	-	-	6AG7
6AK8	6T8	-	EABC80	-	-	-	-	EABC80	-	-	6T8
6AL5	6058	DD6	EAA91 D2M9	-	DD6	D152 D77 QD77 N77 N144 QN77 Z77 QZ77	6D2	EB91 M8079	D77 QA2404	DD6G	5726 6058
6AM5	7D9	-	EL91	-	-	-	-	EL91 M8082	N77 QA2402	-	6AM5
6AM6	8D3 6064	SP6	EF91 PM07 ECH80	-	-	-	6F12	EF91 M8083 ECH80	QA2403 Z77	HP6	-
6AN7	-	-	EC91	-	-	-	-	-	-	-	-
6AQ4	-	-	EL90	-	-	-	6L34	EC91	-	-	-
6AQ5	-	-	BPM04 EBC91 ABC91	-	-	-	-	EL90	N727	-	6005
6AQ6	-	-	-	-	-	DH77	-	EBC91	DH77	-	6AV6 6BK6 5725 6080
6AS6	-	-	-	-	-	-	-	-	-	-	-
6AS7	-	-	-	-	-	-	-	-	-	-	-
6AT6	6066	-	EBC90	-	-	DH77	-	EBC90	DH77	-	6BT6 6066
6AU6	-	-	EF94	-	-	-	-	EF94	-	-	-
6AV4	-	-	EZ91	-	-	-	-	-	-	-	-
6AV6	-	-	EBC91 ABC91	-	-	DH77	-	EBC91	DH77	-	6AQ6 6BK6 6V6 6F6 6K6 6A5 6Q7 5638 5749
6AY5	6V6 6F6	-	-	-	-	KT63	-	-	KT63	6V6 6F6	-
6B4	-	-	-	-	-	-	-	-	-	-	-
6B6	-	-	-	-	-	DH63	-	-	DH63	-	-
6BA5	-	-	-	-	-	-	-	-	-	-	-
6BA6	5749	-	EF93 PM04 EF96 EBC80	-	-	-	-	EF93	W727	-	5749
6BC5	-	-	EF96	-	-	-	-	EF96	-	-	6AG5
6BD7	-	-	EBC80	-	-	-	-	EBC80	-	-	-
6BE6	5750	-	EK90 HM04 EQ80	-	-	X77	-	EK90	X727	-	5750
6BE7	-	-	-	-	-	-	-	-	-	-	-
6BF6	-	-	-	-	-	-	-	-	-	-	6BU6
6BF7	-	-	-	-	-	-	-	-	-	-	6BG7
6BG7	-	-	-	-	-	-	-	-	-	-	6BF7
6BH5	-	-	EF81	-	-	-	-	EF81	-	-	-
6BK6	-	-	EBC91 ABC91	-	-	DH77	-	EBC91	DH77	-	6AQ6 6AV6
6BM5	-	-	6P9	-	-	-	-	-	-	-	-
6BN5	-	-	EL85	-	-	-	-	EL85	-	-	-
6BQ6	-	-	-	-	-	-	-	-	-	-	6CU6
6BR5	-	-	EM80	-	-	-	-	EM80	-	-	-
6BR7	8D5 6059	-	-	-	-	-	-	-	-	-	6059
6BS7	8D7	-	-	-	-	-	-	-	-	-	-
6BT6	6066	-	EBC90	-	-	DH77	-	EBC90	DH77	-	6AT6 6066 6BF6 6061 6BX6
6BU6	-	-	-	-	-	-	-	-	-	-	-
6BW6	6061	-	-	-	-	-	-	-	-	-	-
6BW7	6BX6	64SPT	EF80	-	-	Z152	-	EF80	Z719	-	6BX6
6BX6	6BW7	64SPT 6BW7	EF80	-	-	Z152	-	EF80	Z719	-	6BW7
6BY7	-	-	EF85	-	-	-	-	EF85	-	-	-
6C4	-	-	EC90	-	-	L77 QL77 L63	-	EC90	L77 QA2401 L63	-	6125
6C5	6J5	-	-	-	-	-	-	-	-	-	6J5 6L5



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
6C6	-	-	-	-	-	-	-	-	-	-	77 7700
6C9	-	62TH	ECH42	-	-	X150	6C10	ECH42	-	-	-
6C10	-	62TH	ECH42	-	-	X150	6C9	ECH42	-	-	-
6C31	6K8	OM10	ECH3G ECH35	-	-	X61M X62 X65 X66 X147	-	ECH33 ECH35	X61M X62 X65 X66	6E8 6TH8	6E8 6K8 6J8 6P8
6CA7	-	-	EL34	-	-	-	-	EL34	-	-	-
6CB6	-	-	-	-	-	-	-	-	-	-	6CF6
6CF6	-	-	-	-	-	-	-	-	-	-	6CB6
6CH6	6132 7D10	-	EF82	-	-	-	-	EF82	-	-	6132
6CD7	-	64ME	EM34	-	-	-	-	EM34	-	-	-
6CJ6	-	-	EL81	-	-	-	-	EL81	-	-	-
6CK6	-	-	EL83	-	-	-	-	EL83	-	-	-
6CN6	-	-	EL38	-	-	-	-	EL38	-	-	-
6CQ6	9D6 6065	VP6	EF92	-	-	W77 QW77	-	EF92	W77 QA2400	-	6065
6CU6	-	-	-	-	-	-	-	-	-	-	6BQ6
6D1	-	SD61	EA50	-	-	-	-	EA50	-	-	-
6D2	6AL5 6058	DD6	AAA91 D2M9	-	DD6	D152 QD77	-	EB91	D77 QA2404	DD6G	6AL5 5726 78
6D6	-	-	-	-	-	-	-	-	-	-	-
6D8	-	-	-	-	-	X73M	-	-	X73M	-	-
6E5	-	-	-	-	-	-	-	-	-	-	6T5
6E8	6K8*	OM10	ECH3G ECH33	-	6K8*	X61M* X62 X65* X66 X147*	-	ECH33 ECH35*	X61M* X62 X65* X66	6K8* 6TH8	6K8* 6J6* 6P8
6F5	-	-	-	-	-	-	-	-	H63 N63	-	-
6F6	6V6	-	-	-	-	N63 KT63	-	-	N63 KT63	6V6	6V6
6F12	6AM6 8D3 6064	SP6	EF91 PM07	-	6AM6	Z77 QZ77	-	EF91 M8083	Z77 QA2403	HP6	6AM6
6F13	-	-	EF42 HF62	-	-	Z150	-	EF42	-	-	-
6F15	-	62VP	EF41 HF61	-	-	W150	-	EF41	-	-	-
6F16	-	62VP	EF41 HF61	-	-	W150	-	EF41	-	-	-
6G5	6U5	-	-	-	-	-	-	-	-	-	6H5 6U5
6G5G	6U5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y61 Y62 Y63 Y64	6G5G 6U5G	-
6H5	6G5 6U5	-	-	-	-	-	-	-	-	-	6U5 6G5
6H6	-	OM3	-	-	-	D63* L63	-	EB34	D63* L63	-	-
6J5	-	-	-	-	-	-	-	-	-	-	6C5 6L5 6101
6J6	-	-	ECC91	-	-	-	-	ECC91 M8081	-	-	-
6J7	-	-	-	-	-	Z63 KTZ63	-	-	Z63 KTZ63	-	7000
6J8	6K8*	OM10	ECH3G	-	6K8*	X61M* X62 X65* X66 X147*	6C31	ECH33 ECH35	X61M* X62 X65* X66	6K8* 6TH8 6E8*	6K8* 6E8* 6P8
6K4	-	-	EC70	-	-	-	-	EC70	-	-	5718
6K6	-	-	-	-	-	KT63	-	-	KT63	-	6F6 6V6 6AY5
6K7	-	-	-	-	-	KTW63 W61 W63	-	-	KTW63 W61 W63	-	6U7 5732

\* Series or parallel circuits.



COMMERCIAL EQUIVALENTS

6K8-6U5G

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI OF EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
6K8	-	OM10	ECH3G ECH35*	-	-	X61M* X62 X66 X147* L63	6C31	ECH35* ECH33	X61M* X62 X65* X66 L63	6TH8 6E8*	6E8* 6J8* 6P8
6L5	6J5	-	-	-	-	-	-	-	-	-	6C5 6J5 5881 5932
6L6	-	-	EL37	-	-	KT66	-	EL37	KT66	PP60	-
6L7	-	-	-	-	-	X64	-	-	X64	-	-
6L34	-	-	EC91	-	-	-	-	EC91	-	-	6AQ4
6LD3	-	62DDT	EBC41	-	-	DH150	-	EBC41	-	-	-
6M1	6G5G 6U5G	63ME	EM35	-	VFT6	-	-	EM35	Y61 Y62 Y63 Y64	6G5G 6U5	-
6M5	-	-	EL80	-	-	-	-	EL80	-	-	-
6M6	-	-	6PX6 EL33	-	-	N147 KT61	6P25	EL33	KT61	PP6BG	6AG6
6N5	-	-	-	-	-	-	-	-	-	-	6AB5
6N6	-	-	-	-	-	-	-	-	-	-	6AB6
6N7	-	-	-	-	-	-	-	-	-	-	5694
6N8	-	-	EBF80	-	-	ZD152	-	EBF80	-	-	-
6P5	-	-	-	-	-	-	-	-	-	-	6AF5
6P8	6K8	OM10	ECH3G ECH35	-	6K8	X147 X61M X62 X65 X66	6C31	ECH33 ECH35	X61M X62 X65 X66	6K8 6E8 6TH8	6K8 6E8 6J8 6P8
6P9	-	-	-	-	-	-	-	-	-	-	6BM5
6P25	-	-	6PX6 EL33	-	-	N147 KT61	-	EL33	KT61	PP6BG	6AG6 6M6
6PX6	-	-	EL33	-	-	N147 KT61	6P25	EL33	KT61	PP6BG	6AG6 6M6
6Q4	-	-	EC80	-	-	-	-	EC80	-	-	-
6Q6	-	-	-	-	-	DH73	-	-	DH73	-	6T7
6Q7	-	-	-	-	-	DH63	-	-	DH63	-	6B6
6R4	-	-	EC81	-	-	-	-	EC81	-	-	-
6S7	-	-	-	-	-	KTW61	-	-	KTW61	-	-
6SD7	-	-	-	-	-	-	-	-	-	-	6SG7
6SE7	-	-	-	-	-	-	-	-	-	-	6SH7
6SG7	-	-	-	-	-	-	-	-	-	-	6SD7
6SH7	-	-	-	-	-	-	-	-	-	-	6SE7
6SJ7	-	-	-	-	-	-	-	-	-	-	5693
6SK7	-	-	-	-	-	-	-	-	-	-	6SS7
6SL7	-	-	-	-	-	-	-	ECC35	-	-	6137 6SU7
6SN7	5692 6180	-	-	-	-	B65 QB65	-	ECC32 ECC33	B65 QA2408	-	5691 5692 6180
6SQ7	-	-	-	-	-	-	-	-	-	-	6SZ7
6SR7	-	-	-	-	-	-	-	-	-	-	6ST7
6SS7	-	-	-	-	-	-	-	-	-	-	6SK7 6137 6SR7
6ST7	-	-	-	-	-	-	-	-	-	-	6SL7
6SU7	-	-	-	-	-	-	-	ECC35	-	-	5691 6SQ7
6SZ7	-	-	-	-	-	-	-	-	-	-	6E5
6T5	-	-	-	-	-	-	-	-	-	-	6Q6
6T7	-	-	-	-	-	DH73	-	-	DH73	-	6AK8
6T8	-	-	EABC80	-	-	-	-	EABC80	-	-	6K8
6TH8	6K8	OM10	ECH3G ECH35	-	6K8	X61M X62 X65 X66 X147	6C31	ECH33 ECH35 EY80	X61M X62 X65 X66	6K8 6E8	6K8 6E8 6J8 6P8
6U3	-	-	EY80	-	-	-	-	EY80	-	-	-
6U4	-	-	-	-	-	-	-	-	-	-	6W4
6U5	6G5	-	-	-	-	-	-	-	-	-	6G5 6H5
6U5G	6G5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y61 Y62 Y63 Y64	6G5G	-

\* Series or parallel circuits.



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
6U6	-	-	-	-	-	-	-	-	-	-	6W6 6Y6
6U7	6K7	-	-	-	-	KTW63 W61 W63	-	-	KTW63 W61 W63	6K7	6K7 5732
6V4	-	-	EZ80	-	-	-	-	EZ80	-	-	-
6V6	-	-	-	-	-	KT63	-	-	KT63	-	6F6 6AY5 6K6 6M6 5636 5871 6U4 6X5 6ZY5 5852 6U6 6Y6
6W4	-	-	-	-	-	-	-	-	-	-	-
6W5	6X5	-	EZ35	-	6X5	U70 U147	-	EZ35	U70	-	6U4 6X5 6ZY5 5852 6U6 6Y6
6W6	-	-	-	-	-	-	-	-	-	-	-
6W7	8D4	-	-	-	-	-	-	-	-	-	-
6X2	R12	SU61	EY51	-	-	U151	-	EY51	U43	-	-
6X4	6063	-	EZ90 V2M70	-	-	U78 QU78	-	EZ90	U78 QA2407	-	6063 6202 6203 6W5 6ZY5 5852 6W6 6U6 1 1V 84 6X5 6W5 5852
6X5	-	-	EZ35	-	-	U70 U147	-	EZ35	U70	-	6W5 6ZY5 5852 6W6 6U6 1 1V 84 6X5 6W5 5852
6Y6	-	-	-	-	-	-	-	-	-	-	-
6Z3	-	-	-	-	-	-	-	-	-	-	-
6Z4	-	-	-	-	-	-	-	-	-	-	-
6ZY5	6X5	-	EZ35	-	6X5	U70 U147	-	EZ35	U70	-	6X5 6W5 5852
7A2	-	MP/Pen	-	A70B	-	MKT4 MPT4 N40	AC/Pen	Pen4VA	MKT4 MPT4	APP4A	-
7A3	-	42MP/Pen 42/OT	-	A70C A70D	PT4	KT41 N41	AC/2Pen	PenA4	KT41 N41	APP4B	-
7A6	-	-	-	-	-	-	-	-	-	-	5679 7H7
7A7	-	-	-	-	-	W143 W148	-	-	W31	-	-
7AG7	-	-	-	-	-	-	-	-	-	-	7AH7 7AG7 7C7
7AH7	-	-	-	-	-	-	-	-	-	-	-
7AJ7	-	-	-	-	-	-	-	-	-	-	-
7AN7	-	-	PCC84	-	-	-	30L1	PCC84	-	-	-
7B5	-	-	EL22	-	-	KT81 N148 DH81 DL82	-	EL22	KT81 N148 DH81 DL82	-	7C5
7B6	-	-	-	-	-	W149	-	-	W149	-	-
7B7	-	-	-	-	-	KT81 N148 DH149	-	EL22	KT81 N148 DH149	-	-
7C5	-	-	EL22	-	-	-	-	EL22	-	-	7B5
7C6	-	-	-	-	-	-	-	-	-	-	-
7C7	-	-	-	-	-	-	-	-	-	-	7AJ7
7D3	-	40PPA	-	-	-	-	-	-	-	-	-
7D5	-	-	-	-	-	-	-	-	-	PP13A	-
7D6	-	-	-	-	-	-	Pen3520	-	-	PP35	-
7D9	6AM5	6AM5	EL91	C70D	PTZ 6AM5	N77 N144 QN77	-	Pen36C EL91 M8082	N77 QA2402	-	6AM5
7D10	6CH6 6132	-	EF82	-	-	-	-	EF82	-	-	6CH6 6132 7L7 7T7 1232 7A7
7G7	-	-	EF22	-	-	-	-	EF22	-	-	-
7H7	-	-	-	-	-	W31 W143 X148	-	-	W81	-	-
7J7	-	-	-	-	-	-	-	-	-	-	7S7 7G7 7T7 1232
7L7	-	-	EF22	-	-	-	-	EF22	-	-	-



COMMERCIAL EQUIVALENTS

7S7-12SN7

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
7S7	-	-	-	-	-	X148	-	-	-	-	7J7
7T7	-	-	EF22	-	-	-	-	EF22	-	-	7G7
											7L7
											1232
											1231
7V7	-	-	-	-	-	-	-	-	-	-	XXFM
7X7	-	-	-	-	-	-	-	-	-	-	7Z4
7Y4	-	-	-	-	-	U149	-	-	U82	-	
			V61								
7Z4	-	-	-	-	-	U149	-	-	U82	-	7Y4
8A1	-	MS/Pen	-	A50A	SPT4A	MSP4	AC/S2Pen	SP4	MSP4	HP4101/5	-
8A8	-	-	PCF80	-	-	-	30C1	PCF80	-	-	-
8D2	-	13SPA	CF1	-	-	-	-	SP13C	-	SP13	-
			CF7								
8D3	6AM6 6064	SP6	EF91	-	6AM6	Z77 QZ77	6F12	EF91 M8083	Z77 QA2403	HP6	6AM6
8D4	-	-	-	-	-	-	-	-	-	-	6W7
8D5	6BR7	-	-	-	-	-	-	-	-	-	6BR7
											6059
											6BS7
8D7	6BS7	-	-	-	-	-	-	-	-	-	-
9A1	-	MVS/Pen	AF2	A50M A50N	VPT4	VMP4G	AC/VP1	VP4 VP4A	VMP4G	HP4106c	-
9BMS	-	-	9P9	-	-	-	-	-	-	-	-
9D2	-	13VPA	-	C50N	-	-	VP1322	VP13C	-	VP13K	-
9D6	6065	VP6	EF92	-	-	W77 QW77	-	EF92	W77 QA2400	-	6CQ6
9P9	-	-	-	-	-	-	-	-	-	-	9BM5
9U8	-	-	PCF82	-	-	-	-	PCF82	-	-	-
10C1	-	-	-	-	-	X145	-	-	-	-	-
10D1	-	-	-	C20C	-	-	-	2D13C	-	DD13	-
10F1	-	-	-	-	-	Z145	-	-	-	-	-
10F3	-	-	UF42	-	-	Z142	-	UF42	Z142	-	-
10F9	-	-	UF41	-	-	W142	-	UF41	W142	-	-
			HF121			W145			W145		
10LD3	-	-	UBC41	-	-	DH142	-	UBC41	-	-	-
10LD11	-	-	-	-	-	DL145	-	-	-	-	-
10P13	-	-	-	-	-	N145	-	-	-	-	-
10P14	-	45IPT	UL41	-	-	N142	-	UL41 UL46	N142	-	-
11A2	11A1	DDT	-	A23A	H4D	MHD4	AC/HLDD	TDD4	MHD4	DDT DDT4 DDT13	-
11D3	-	13DHA 202DDT	-	C23B	HAD	-	HLDD1320	TDD13C	-	-	-
11D5	-	-	-	-	HSD	DH30	-	-	DH30	-	-
12A	-	-	-	-	-	-	-	-	-	-	71A
12A6	-	-	-	-	-	-	-	-	-	-	5659
12AL5	-	-	-	-	-	-	-	-	-	-	-
			HAA91								
			UAA91								
12AT6	-	-	HBC90	-	-	-	-	-	-	-	-
12AT7	6060	-	ECC81	-	-	B152 B309 QB309	-	ECC81	B309 QA2406	-	6060 6201
12AU6	-	-	HF94	-	-	-	-	-	-	-	-
12AU7	6067	-	ECC82	-	-	-	-	ECC82	-	-	5814
12AV6	-	-	HBC91	-	-	-	-	-	-	-	12BK6
12AX7	6057	-	ECC83	-	-	-	-	ECC83	-	-	5721
											5751
											6072
12AY7	-	-	-	-	-	-	-	-	-	-	14A7
12B7	-	-	-	-	-	-	-	-	-	-	-
12BA6	-	-	HF93	-	-	-	-	HF93	-	-	-
12BE6	-	-	HK90	-	-	-	-	HK90	-	-	-
12BF6	-	-	-	-	-	-	-	-	-	-	12BU6
12BK6	-	-	HBC91	-	-	-	-	-	-	-	12AV6
12BU6	-	-	-	-	-	-	-	-	-	-	12BF6
12C8	-	-	-	-	VP12D	-	-	-	-	-	-
12K7	-	-	-	-	-	W76	-	-	W76	-	-
12K8	-	-	-	-	-	X76M	-	-	X76M	-	-
12L8	-	-	-	-	-	-	-	-	-	-	1644
12Q7	-	-	-	-	-	DH76 DL74M	-	-	DH76 DL74M	-	-
12SA7	-	-	-	-	-	-	-	-	-	-	12SY7
12SC7	-	-	-	-	-	-	-	-	-	-	1634
12SN7	-	-	-	-	-	B36	-	-	B36	-	12SX7



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
12SR7	-	-	-	-	-	-	-	-	-	-	12SW7
12SW7	-	-	-	-	-	-	-	-	-	-	12SR7
12SX7	12SN7	-	-	-	-	B36	-	-	B36	-	12SN7
12SY7	-	-	-	-	-	-	-	-	-	-	12SA7
12Z3	-	-	-	-	-	-	-	-	-	-	14Z3
13D1	25SN7	-	-	-	-	-	-	-	-	-	25SN7
	6042	-	-	-	-	-	-	-	-	-	6042
13D3	6158	-	-	-	-	-	-	-	-	-	6158
13DHA	11D3	-	-	C23B	HAD	-	HLDD1320	TDD13C	-	DDT13	-
13PGA	15D1	-	-	C80B	VHTA	-	-	FC13C	-	VO13	-
13SPA	8D2	-	CF1 CF7	-	-	-	-	SP13C	-	SP13	-
13VPA	9D2	-	-	C50N	-	-	VP1322	VP13C	-	VP13K	-
14A7	-	-	-	-	-	-	-	-	-	-	12B7
14AF7	-	-	-	-	-	-	-	-	-	-	14N7
	-	-	-	-	-	-	-	-	-	-	XXD
14C7	-	-	-	-	-	-	-	-	-	-	1280
14J7	-	-	-	-	-	-	-	-	-	-	14S7
14N7	-	-	-	-	-	-	-	-	-	-	14AF7
	-	-	-	-	-	-	-	-	-	-	XXD
14S7	-	-	-	-	-	-	-	-	-	-	14J7
14Z3	-	-	-	-	-	-	-	-	-	-	12Z3
15A2	-	41MPG	AK1	A80A	VHT4	MX40 X42	-	FC4	MX40 X42	MH4105	-
15A6	-	-	PL83	-	-	N153 N309	-	PL83	N309	-	-
15D1	15D2	13PGA	-	C80B	VHTA	-	-	FC13C	-	VO13	-
16A5	-	163Pen	PL82	-	-	-	-	PL82	N329	-	-
17Z3	-	-	PY81	-	-	U153	-	PY81	-	-	-
19AJ8	-	-	HCH81	-	-	-	-	-	-	-	-
19AQ5	-	-	HL90	-	-	-	-	-	-	-	-
19BD	-	19X3	PY80	-	-	-	-	-	-	-	19U3
19SU	-	19Y3	PY82	-	-	U152 U309 U154	-	PY80	U152 U309 U319	-	19X3
19T8	-	-	HABC80	-	-	-	-	-	-	-	19Y3
19U3	-	19BD	PY80	-	-	U152 U309	-	PY80	U152 U309	-	19X3
19X3	-	19BD	PY80	-	-	U152 U309	-	PY80	U152 U309	-	19U3
19Y3	-	19SU	PY82	-	-	U154	-	PY82	U319	-	-
20A1	-	41STH	-	A36A A36B	-	X41	AC/TH1	TH4 TH4B	X41	TH4A	-
21A6	-	213Pen	PL81	-	-	N152	-	PL81 PL820	N339	-	-
24A	-	-	-	-	-	-	-	-	-	-	35 51
25A6	-	-	-	-	-	KT33	-	-	KT33	-	-
25B6	-	-	-	-	-	-	-	-	-	-	5824
25L6	-	-	-	-	-	KT32	-	-	KT32	-	-
25RE	25Y5	-	-	-	-	-	-	-	-	-	25Y5
25SN7	13D1	-	-	-	-	-	-	-	-	-	6042
	6042	-	-	-	-	-	-	-	-	-	-
25X6	-	-	-	-	-	-	-	-	-	-	25Z6
25Y4	-	-	-	-	-	U31	-	PY31	-	-	25Z4
25Y5	-	25RE	-	-	-	-	-	-	-	-	25Z5
25Z4	-	-	-	-	-	U31	-	PY31	-	-	25Y4
25Z5	25Y5	25RE	-	-	-	-	-	-	-	-	25Y5
25Z6	-	-	-	-	-	-	-	-	-	-	25X6
26B6	-	-	-	-	-	-	-	-	-	-	26D6
26D6	-	-	-	-	-	-	-	-	-	-	26B6
27	-	-	-	-	-	-	-	-	-	-	56
30C1	-	-	PCF80	-	-	-	-	PCF80	-	-	8A8
30L1	7AN7	-	PCC84	-	-	-	-	PCC84	-	-	7AN7
32	-	-	-	-	-	-	-	-	-	-	34
34	-	-	-	-	-	-	-	-	-	-	32
35	-	-	-	-	-	-	-	-	-	-	24-A
35W4	-	-	HY90	-	-	-	-	HY90	-	-	51
35Z4	-	-	-	-	-	U76	-	-	U76	-	-
36	-	-	-	-	-	-	-	-	-	-	39
	-	-	-	-	-	-	-	-	-	-	44
37	-	-	-	-	-	-	-	-	-	-	76
39	-	-	-	-	-	-	-	-	-	-	36 44



COMMERCIAL EQUIVALENTS

40-76

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
40	-	-	-	-	-	-	-	-	-	-	00A 01A
40PPA	7D3	-	-	-	-	-	-	-	-	-	-
40SUA	1D5	-	CY1C	C10B	RZ	-	U4020	UR1C	-	-	-
40Z5	-	-	-	-	-	-	-	-	-	-	45Z5
41	-	-	-	-	-	-	-	-	-	-	42
41FP	-	-	-	-	-	-	AC/P	-	-	-	-
41MH	HLA2	-	-	A30B	-	MH41	AC/2HL	484V	MH41	HL4+	-
41MHF	-	-	-	-	-	MH4	AC/HL	354V	MH4	HL4+	-
41MHL	HLA2	-	-	A30D	D4	MH4	AC/HL	244V 354V	MH4	HL4+	-
41MLF	-	-	-	-	-	-	-	244V	-	HL4+	-
41MP	-	-	-	-	L4	ML4	AC/P	TT4	ML4	LL4	-
41MPG	15A2	-	-	A80A	VHT4	MX40 X42	-	FC4	MX40 X42	MH4105	-
41MPT	-	-	-	-	-	-	-	-	-	HP4101	-
41MRC	-	-	-	-	-	-	AC/2HL	-	-	HL4+	-
41MSG	-	-	-	-	-	-	AC/SG	SP4	-	AS4120	-
41MXP	-	-	-	-	-	-	AC/P1	054V	-	LL4	-
41PGD	15A2	-	-	A80A	VHT4	MX40 X42	-	FC4	MX40 X42	MH4105	-
41STH	20A1	-	-	A36A A36B	-	X41	AC/TH1	TH4	X41	-	-
42	-	-	-	-	-	-	-	-	-	-	41
42MP/ Pen	7A3	420T	-	A70C A70D	PT4	KT41 N41	AC/2Pen	PenA4	KT41 N41	APP4B	-
42/OT	7A3	42MP/Pen	-	A70C A70D	PT4	KT41 N41	AC/2Pen	PenA4	KT41 N41	APP4B	-
42/ OTDD	-	-	-	-	PT4D	DN41	AC/2 PenDD	-	DN41	DDPP4B	-
43IU	R3	-	1861 AHC	-	-	MU14	UU5	IW4/350 IW4/500	MU14	APV4	-
44	-	-	-	-	-	-	-	-	-	-	36 39
44IU	R3	-	-	-	-	-	UU5	IW4/500	-	-	-
45	-	-	-	-	-	-	-	-	-	-	2A3
45Z5	-	-	-	-	-	-	-	-	-	-	40Z5
47	-	-	-	-	-	-	-	-	-	-	1610
50C5	-	-	HL92	-	-	-	-	HL92	-	-	-
50L6	-	-	-	-	-	KT71	-	-	KT71	-	-
50Y6	-	-	-	-	-	-	-	-	-	-	50Z7
50Z7	-	-	-	-	-	-	-	-	-	-	50Y6
51	-	-	-	-	-	-	-	-	-	-	24-A 35 6A4
52	-	-	-	-	-	-	-	-	-	-	-
52KU	-	53KU	GZ34	-	-	-	-	GZ32	-	-	-
53KU	-	-	GZ33	-	-	-	-	GZ33	-	-	-
54KU	-	53KU	GZ34	-	-	-	-	GZ32	-	-	-
56	-	-	-	-	-	-	-	-	-	-	27
57	-	-	-	-	-	-	-	-	-	-	58
58	-	-	-	-	-	-	-	-	-	-	57
62DDT	-	-	EBC41	-	-	DH150	6LD3	EBC41	-	-	-
62TH	-	-	ECH42	-	-	X150	6C9 6C10	ECH42	-	-	-
62VP	-	-	HF61 EF41	-	-	W150	6F15 6F16	EF41	-	-	-
63ME	6G5G 6U5G	-	EM35	-	VFT6	-	6M1	EM35	Y61 Y62 Y63 Y64 Z90	6G5G 6U5G	-
63SPT	-	-	EF50	-	-	-	-	EF50	-	-	EF50
63T1	-	6AB8	ECL80	-	-	LN152	-	ECL80	-	-	-
64ME	-	-	EM34	-	-	-	-	EM34	-	-	6CD7
64SPT	6BW7 6BX6	6BX6	EF80	-	-	Z152	-	EF80	Z19	-	6BW7 6BX6
66KU	-	-	EZ40 V61	-	-	U150	UU9	EZ40	-	-	-
67PT	-	-	EL41 BF61	-	-	N150	-	EL41	-	-	-
71A	-	-	-	-	-	-	-	-	-	-	12A
76	-	-	-	-	-	-	-	-	-	-	37



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
77	-	-	-	-	-	-	-	-	-	-	6C6
78	-	-	-	-	-	-	-	-	-	-	7700
84	-	-	-	-	-	-	-	-	-	-	6D6
85A1	-	-	-	-	-	-	-	-	-	-	6Z4
85A2	-	-	-	-	-	-	-	-	-	-	OE3
104V	PA1	41MP	-	-	L4	QS83/3 ML4	AC/P	-	QS83/3 ML4	LL4	OG3
117L7	-	-	-	-	-	-	-	-	-	-	117M7
117M7	-	-	-	-	-	-	-	-	-	-	117L7
117N7	-	-	-	-	-	-	-	-	-	-	117P7
117P7	-	-	-	-	-	-	-	-	-	-	117N7
141TH	-	-	UCH42	-	-	X142	-	UCH42	-	-	-
154V	-	-	-	-	-	-	-	-	-	HL4+	-
163Pen	-	16A5	PL82	-	-	-	-	PL82	N329	-	-
171DDP	-	-	UBF80	-	-	-	-	UBF80	-	-	-
202DDT	11D3	13DHA	-	C23B	HAD	-	HLDD1320	TDD13C	-	DDT13	-
202STH	-	-	-	C36A	-	-	TH2321	TH21C	-	-	-
210DDT	-	-	-	K23B	H2D	HD24	HL21/DD	TDD2A	HD24	-	-
210DET	-	-	-	-	-	-	-	PM2HL	-	LD210	-
210HF	HLB1	-	-	K30C	HL2	HL2	HL2	PM2HL	HL2	HR210	-
210HL	-	-	-	K30A	-	HL21	HL210	PM2HL	HL21	HL2	-
210LF	-	-	-	K30K	L2	L21	L2	PM2DX	L21	LD210	-
210PG	-	-	-	K30C	-	-	-	-	-	-	-
210PGA	-	-	-	K80A	VHT2A	X22	-	FC2	X22	-	-
210RC	HLB1	210SPG	-	K80B	VHT2A	X21	-	FC2A	X21	-	-
210SPG	-	210PGA	-	K30A	HL2	HL2	HL2	PM2HL	HL2	HR210	-
210SPT	-	-	-	K80B	VHT2A	X21	-	FC2A	X21	-	-
210VPA	-	-	-	-	SPT2	Z21	SP210	SP2	Z21	HP210nc	-
210VPT	-	-	-	-	-	Z22	-	-	Z22	-	-
213Pen	-	21A6	PL81	K50M	VPT2	VP21	VP210	VP2	VP21	HP211c	-
215P	-	-	-	-	-	N152	-	PL81	N339	-	21A6
215SG	-	-	B262	-	S2	P215	SG215	PL820	-	-	-
220B	-	240B	-	K33A	HP2	S23	SG215A	P215	P215	P215	-
220DD	-	-	-	-	-	-	PD220	PM12	S23	SS210	-
220HPT	-	-	-	-	-	-	-	PM12M	-	-	-
220/OT	PenB1	-	-	-	-	-	Pen220	PM2B	B21	CB215	-
220P	-	-	-	-	-	-	Pen220	2D2	-	-	-
220PA	PB1	-	-	K70B	PT2	KT2	-	PM22A	KT2	-	-
220PT	-	-	-	-	-	-	-	PM22A	-	LP220	-
220SG	5B1	215SG	-	K30G	-	-	-	PM2	-	LP220	-
220TH	-	-	-	-	-	-	-	PM2A	LP2	LP220	-
220VS	-	-	-	-	-	-	-	PT240	PT240	PP225	-
220VSG	-	-	-	-	-	-	-	S21	S21	SS210	-
230PT	-	-	-	-	-	-	-	S22	S22	-	-
230XP	-	-	-	-	-	-	-	S23	S23	-	-
240B	-	220B	-	K40B	-	-	-	S24	S24	-	-
240QP	-	-	-	-	-	-	-	X24	X24	-	-
244V	HLA2	41MHL	-	-	-	-	-	TH2	TH2	-	-
302THA	-	-	-	-	-	-	-	PM12M	PM12M	SE211c	-
311SU	-	-	UY41	-	-	U142	-	PM12M	-	SE211c	-
332Pen	-	-	-	-	-	-	-	-	-	PP225	-
354V	HLA2	41MHL	-	K33A	LP2	P2	P220A	PM202	P2	SP220	-
402/OT	-	402Pen	-	K77B	HP2	-	PD220	PM2B	B21	CB215	-
402Pen	-	402/OT	-	A30D	QPT2	QP21	QP230	QP22B	QP21	-	-
408BU	R1	-	-	A30D	D4	MH4	AC/HL	354V	MH4	HL4+	-
442BU	R2	-	-	C36B	-	-	TH2321	TH30C	-	-	-
446A/B	-	-	-	C36C	-	-	-	-	-	-	-
451PT	-	-	UL41	-	-	N142	10P14	UL41	N142	-	-
460BU	-	-	-	-	-	-	-	UL46	-	-	-
484V	HLA2	41MH	-	A30B	-	MH41	AC/2HL	DW4/500	MH41	HL4+	-
506BU	R1	-	1861	-	-	U10	UU3	DW2	U10	RV120/350	-



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
807	5B/250A	-	QE06-50	-	-	-	-	QV05-25	-	-	5933
879	-	-	-	-	-	-	-	-	-	-	2X2 2Y2
904V	HLA2	41MH	-	A30B	-	MH41	AC/2HL	-	MH41	HL4+	-
951	-	-	-	-	-	-	-	-	-	-	1A4 1B4 5731 1650
954	-	-	E1F	-	-	ZA2	-	-	ZA2	-	-
955	-	-	E1C	-	-	HA2	-	-	HA2	-	-
956	-	-	E2F	-	-	-	-	-	-	-	-
957	-	-	D1C	-	-	-	-	-	-	-	-
958A	-	-	D2C	-	-	-	-	-	-	-	-
959	-	-	D3F	-	-	-	-	-	-	-	-
994V	-	-	-	-	-	-	-	154V	-	HL4+	-
1231	-	-	-	-	-	-	-	-	-	-	7V7 7G7 7L7 7T7 5Z3 14C7 3B7 1R4 3D6 3LF4
1232	-	-	EF22	-	-	-	-	EF22	-	-	-
1275	-	-	-	-	-	-	-	-	-	-	-
1280	-	-	-	-	-	-	-	-	-	-	-
1291	-	-	-	-	-	-	-	-	-	-	-
1294	-	-	-	-	-	-	-	-	-	-	-
1299	-	-	-	-	-	-	-	-	-	-	-
1561	-	-	-	-	R4A	U14	UU120/500	DW4/500	U14	RV120/500	-
1603	-	-	-	-	-	-	-	-	-	-	7700
1610	-	-	-	-	-	-	-	-	-	-	47
1611	-	-	-	-	-	-	-	-	-	-	6F6
1612	-	-	-	-	-	-	-	-	-	-	6L7
1613	-	-	-	-	-	-	-	-	-	-	6F6
1614	-	-	-	-	-	-	-	-	-	-	6L6
1620	-	-	-	-	-	-	-	-	-	-	6J7
1621	-	-	-	-	-	-	-	-	-	-	6F6
1622	-	-	-	-	-	-	-	-	-	-	6L6
1634	-	-	-	-	-	-	-	-	-	-	12SC7
1637	-	-	-	-	-	-	-	EL32	-	-	-
1638	-	-	-	-	-	-	-	EB34	-	-	-
1639	-	OM4*	-	-	-	DH147* DL63	-	EBC33*	DL63	-	-
1642	-	-	-	-	-	-	-	-	-	-	2C21
1644	-	-	-	-	-	-	-	-	-	-	12L8
1649	-	-	-	-	-	-	-	-	-	-	6AC7 6AJ7 1852 6134 955 5731 6SC7 446A/B 2A6 3A4 12C8
1650	-	-	E1C	-	-	-	-	-	-	-	-
1655	-	-	-	-	-	-	-	-	-	-	-
1656	-	-	-	-	-	-	-	-	-	-	-
1659	-	-	-	-	-	-	-	-	-	-	-
1662	-	-	-	-	-	-	-	-	-	-	-
1664	-	-	-	-	-	-	-	-	-	-	-
1821	-	500BU	-	-	-	U10	-	-	U10	-	-
1852	-	-	-	-	-	-	-	-	-	-	6AC7 6AJ7 1649 6134 6AB7
1853	-	-	-	-	-	-	-	-	-	-	-
1861	R3	43IU	AHC	A11C	-	MU14	UU5	IW4/350	MU14	-	-
1867	R2	-	1868	A11B	-	MU12	UU4	IW4/350	MU12	APV4	-
			1881	A11D	-	-	-	-	-	-	-
1868	R2	-	1867	A11B	-	MU12	UU4	IW4/350	MU12	APV4	-
			1881	A11D	-	-	-	-	-	-	-
1877	-	-	-	-	-	-	-	HVR2	-	V21/7000	-
1881	R2	-	1867	A11B	-	MU12	UU4	IW4/350	MU12	AP4V	-
			1868	A11D	-	-	-	-	-	-	-
5517	-	-	-	-	-	-	-	-	-	-	CK1013
5591	-	-	EF95	-	DP61	-	-	EF95	-	-	6AK5
			PM05	-	-	-	-	M8100	-	-	-
5608	-	-	-	-	-	-	-	-	-	-	5654
5638	-	-	-	-	-	-	-	-	-	-	6BA5
5641	-	-	EY70	-	-	-	-	EY70	-	-	SN954

\* Series or parallel circuits.



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
5642	-	-	DY70	-	-	-	-	DY70	-	-	-
5647	-	-	EA71 EA76	-	-	-	-	EA71 EA76	-	-	-
5654	-	-	-	-	-	-	-	-	-	-	5608
5659	-	-	-	-	-	-	-	-	-	-	12A6
5660	-	-	-	-	-	-	-	-	-	-	12C8
5661	-	-	-	-	-	-	-	-	-	-	12SK7
5676	-	-	-	-	-	-	-	-	-	-	CK556AX
5677	-	-	-	-	-	-	-	-	-	-	CK568AX
5678	-	-	-	-	-	-	-	-	-	-	CK569AX
5679	7A6	-	-	-	-	-	-	-	-	-	7A6
5691	6SL7	-	-	-	-	-	-	ECC35	-	-	6SL7
5692	6SN7 6180	-	-	-	-	B65 QB65	-	ECC32 ECC33	B65 QA2408	6SN7	6SU7 6SN7 6180 6SJ7 6N7
5693	-	-	-	-	-	-	-	-	-	-	CK570AX
5694	-	-	-	-	-	-	-	-	-	-	CK605CX
5697	-	-	-	-	-	-	-	-	-	-	CK608CX
5702	-	-	-	-	-	-	-	-	-	-	CK608BX
5703	-	-	-	-	-	-	-	-	-	-	6K4
5704	-	-	-	-	-	-	-	-	-	-	12AX7
5718	-	-	EC70	-	-	-	-	-	-	-	5751
5721	12AX7 6057	-	ECC83	-	-	-	-	ECC83	-	-	6057 6A56 6AL5 6058
5725	-	-	-	-	-	-	-	-	-	-	955
5726	6AL5 6058	DD6	EAA91 D2M9	-	DD6	D77 D152 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	1650
5731	-	-	E1C	-	-	-	-	-	-	-	6K7 6U7
5732	6K7 6U7	6K7	-	-	6K7	KTW63 W61 W63	-	-	KTW63 W61 W63	6K7	6K7 6U7
5744	-	-	-	-	-	-	-	-	-	-	CK619CX
5749	6BA6	-	EF93 PM04	-	-	-	-	EF93	W727	6BA6	6BA6
5750	6BE6	-	EK90 HM04	-	-	X77	-	EK90	X727	6BE6	6BE6
5751	12AX7 6057	-	ECC83	-	-	-	-	ECC83	-	-	12AX7 5721 6057 6062
5763	6062	-	-	-	-	-	-	-	-	-	12AU7
5814	6067	-	ECC82	-	-	-	-	ECC82	-	-	25B6
5824	-	-	-	-	-	-	-	-	-	-	5901
5840	-	-	EF72	-	-	-	-	-	-	-	6X5
5852	6X5	-	-	-	6X5	U70 J147	-	EZ35	U70	-	6V5 6ZY5
5861	-	-	-	-	-	-	-	EC55	-	-	-
5871	6AG6	-	6PX6 EL33	-	-	N147	6P25	EL33	KT61	PP6BG	6AG6 6K6 6M6 6V6 6AY5 5636
5881	6L6	6L6	EL37	-	-	KT66	-	EL35 EL37	KT66	PP60	6L6 5932
5886	-	-	-	-	-	-	-	-	-	-	CK571AX
5896	-	-	-	-	-	-	-	-	-	-	6052
5899	-	-	-	-	-	-	-	-	-	-	5900
5900	-	-	-	-	-	-	-	-	-	-	5899
5901	-	-	EF72	-	-	-	-	-	-	-	5840
5903	-	-	-	-	-	-	-	-	-	-	6053
5907	-	-	-	-	-	-	-	-	-	-	6056
5920	-	-	E90CC	-	-	-	-	-	-	-	-
5931	5U4	-	-	-	-	U52	-	-	U52	5U4	5U4 5T4
5932	6L6	6L6	EL37	-	-	KT66	-	EL35 EL37	KT66	PP60	6L6 5881
5933	5B/250A 6AQ5	807	QE06-50 EL90 BPM04	-	807	-	-	QV05-25 EL90	-	-	807 6AQ5
6005	-	-	-	-	-	-	-	-	N727	-	-



COMMERCIAL EQUIVALENTS

6007-6391

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
6007	-	-	DL67	-	-	-	-	DL67	-	-	-
6008	-	-	DF67	-	-	-	-	DF67	-	-	-
6029	-	-	-	-	-	-	-	-	-	-	CK573XA
6042	13D1 25SN7	-	-	-	-	-	-	-	-	-	25SN7
6052	-	-	-	-	-	-	-	-	-	-	5896
6053	-	-	-	-	-	-	-	-	-	-	5903
6056	-	-	-	-	-	-	-	-	-	-	5907
6057	12AX7	-	ECC83	-	-	-	-	ECC83	-	-	5721 5751
6058	6AL5	DD6	EAA91 D2M9	-	DD6	D152 D77 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 5726
6059	8D5 6BR7	-	-	-	-	-	-	-	-	-	6BR7
6060	12AT7	-	ECC81	-	-	B152 B309 QB309	-	ECC81	B309 QA2406	-	12AT7 6201
6061	6BW6	-	-	-	-	-	-	-	-	-	6BW6
6062	5763	-	-	-	-	-	-	-	-	-	5763
6063	6X4	-	EZ90 V2M70	-	-	U78 QU78	-	EZ90	U78 QA2407	-	6202 6X4 6203 6AM6
6064	6AM6 8D3	SP6	EF91 PM07	-	-	Z77 QZ77	6F12	EF91 M8083	Z77 QA2403	HP6	6AM6
6065	9D6	VP6	EF92	-	-	W77 QW77 DH77	-	EF92	W77 QA2400 DH77	-	6CQ6
6066	6AT6	-	EBC90	-	-	-	-	EBC90	-	-	6AT6 6BT6
6067	-	-	ECC82	-	-	-	-	ECC82	-	-	12AU7 5814
6072	-	-	-	-	-	-	-	-	-	-	12AY7 6AS7
6080	-	-	-	-	-	-	-	-	-	-	-
6084	-	-	E80F	-	-	-	-	-	-	-	-
6085	-	-	E80CC	-	-	-	-	-	-	-	-
6086	-	-	18042	-	-	-	-	-	-	-	-
6088	-	-	-	-	-	-	-	-	-	-	CK522AX
6101	-	-	ECC91	-	-	-	-	ECC91 M8081	-	-	6J6
6125	-	-	EC90	-	-	L77 QL77	-	EC90	L77 QA2401	-	6C4 6135 6CH6
6132	6CH6 7D10	-	EF82	-	-	-	-	EF82	-	-	-
6134	-	-	-	-	-	-	-	-	-	-	6AC7 6AJ7 1649 1852
6135	-	-	EC90	-	-	L77	-	EC90	L77 QA2401	-	6C4 6125 6SK7 6SS7
6137	-	-	-	-	-	-	-	-	-	-	-
6157	R17	-	-	-	-	-	-	-	-	-	-
6158	13D3	-	-	-	-	-	-	-	-	-	-
6174	-	-	-	-	-	-	-	-	-	-	CK1027
6180	6SN7 5692	-	-	-	-	B65 QB65	-	ECC32 ECC33	B65 QA2408	6SN7	6SN7 5692
6201	6060	-	ECC81	-	-	B152 B309 QB309	-	ECC81	B309 QA2406	-	12AT7 6060
6202	6063 6X4	-	EZ90 V2M70	-	-	U78 QU78	-	EZ90	U78 QA2407	-	6X4 6063 6203
6203	6X4 6063	-	EZ90 V2M70	-	-	U78 QU78	-	EZ90	U78 QA2407	-	6X4 6063 6202
6218	-	-	E80T	-	-	-	-	-	-	-	-
6227	-	-	E80L	-	-	-	-	-	-	-	-
6267	-	-	EF86	-	-	Z729	-	EF86	-	-	-
6373	-	-	DL70	-	-	-	-	DL70	-	-	-
6374	R18	-	EY84	-	-	-	-	EY84	-	-	-
6375	-	-	DC70	-	-	-	-	DC70	-	-	-
6391	-	-	EF74	-	-	-	-	EF74	-	-	-



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
7000	6J7	6J7	-	-	6J7	KTZ63 Z63	-	-	KTZ63 Z63	6J7	6J7
7700	-	-	-	-	-	-	-	-	-	-	6C6 77
8016	-	-	DY30	-	-	-	-	DY30	U41	-	1B3
18042	-	-	-	-	-	-	-	-	-	-	6086
18043	-	-	E83F	-	-	-	-	-	-	-	-
A11B	R2	-	1867 1868 1881	A11D	-	-	UU4	IW4/350	-	APV4	-
A11C	R3	-	1861	-	-	-	UU5	IW4/500	-	-	-
A11D	R2	-	1867 1868 1881	A11B	-	-	UU4	IW4/350	-	APV4	-
A20B	-	DDL4	-	-	-	-	V914	2D4A	D41	DD4	-
A23A	11A1 11A2	DDT	-	-	H4D	MHD4	AC/HLDD	TDD4	MHD4	DDT4	-
A27D	-	-	-	-	-	-	-	Pen4DD	-	DDPP4M	-
A30B	-	41MH	-	-	-	MH41	AC/2HL	484V	MH41	HL4+	-
A30D	HLA2	41MHL	-	-	D4	MH4	AC/HL	354V	MH4	HL4+	-
A36A	20A1	41STH	-	A36B	-	X41	AC/TH1	TH4	X41	TH4A	-
A36B	20A1	41STH	-	A36A	-	X41	AC/TH1	TH4	X41	TH4A	-
A36C	-	4THA	-	-	-	-	AC/TH1	TH4B	-	TH4B	-
A39A	-	-	-	-	-	-	-	TV4 TV4A	-	ME4S	-
A40M	-	-	-	-	-	-	AC/SGVM	-	-	AS4125	-
A50A	8A1	MS/Pen	-	-	SPT4A	MSP4	AC/S2Pen	SP4	MSP4	HP4101/5	-
A50B	-	MS/PenB	-	-	-	-	-	SP4B	-	SP4B	-
A50M	9A1	MVS/Pen	AF2	A50N	VPT4	VMP4G	AC/VP1	VP4 VP4A	VMP4G	HP4106c	-
A50N	9A1	MVS/Pen	AF2	A50M	VPT4	VMP4G	AC/VP1	VP4 VP4A	VMP4G	HP4115/5	-
A50P	-	MVS/PenB	-	-	-	W42	AC/VP2	VP4B	W42	VP4B	-
A70B	7A2	MP/Pen	-	-	-	N40 MKT4 MPT4	AC/Pen	Pen4VA	N40 MKT4 MPT4	APP4A	-
A70C	7A3	42MP/Pen 42OT	-	A70D	PT4	KT41 N41	AC/2Pen	PenA4	KT41 N41	APP4B	-
A70D	7A3	42MP/Pen 42OT	-	A70C	PT4	KT41 N41	AC/2Pen	PenA4	KT41 N41	APP4B	-
A70E	-	-	-	-	-	-	AC/4Pen	PenB4	-	-	-
A80A	15A2	41MPG	AK1	A80M	VHT4	MX40 X42	-	FC4	MX40 X42	VO4	-
A80M	15A2	41MPG	-	A80A	VHT4	MX40 X42	-	FC4	MX40 X42	VO4	-
AA61	-	-	ECC40	-	-	-	-	ECC40	-	-	-
ABC91	-	-	EBC91	-	-	DH77	-	EBC91	DH77	-	6A06 6AV6 6BK6
AC/2HL	HLA2	41MRC 41MH	-	A30B	-	MH41	-	484V	MH41	HL4+	-
AC/2Pen	7A3	42MP/Pen 42/OT	-	A70C A70D	PT4	KT41 N41	-	PenA4	KT41 N41	APP4B	-
AC/2 PenDD	-	42/OTDD	-	-	PT4D	DN41	-	-	DN41	DDPP4B	-
AC/4Pen	-	-	-	-	-	-	-	PenB4	-	APP4E	-
AC/5Pen	-	PT10	-	-	-	-	-	-	-	APP4B	-
AC104	-	-	-	-	-	-	PP3/250	-	-	-	-
AC/DD	-	-	-	-	-	-	-	-	-	DD4	-
AC/HL	HLA2	41MHL	-	A30D	D4	MH4	-	244V 354V	MH4	HL4+	-
AC/ HLDD	11A1 11A2	DDT	-	A23A	H4D	MHD4	-	TDD4	MHD4	DDT4	-
AC/ME	-	-	-	-	-	-	-	-	-	VME4	-
ACO42	-	2XP	-	S30D	-	-	PA20	-	-	-	-
ACO44	-	4XP	E406N	S30C	LP4	PX4	PP3/250	-	PX4	P12/250	-
ACO54	-	4XP	E406N	S30C	LP4	PX4	PP3/250	-	PX4	P12/250	-
ACO64	-	4XP	E406N	S30C	LP4	PX4	PP3/250	-	PX4	P12/250	-
ACO84	-	4XP	E406N	S30C	LP4	PX4	PP3/250	-	PX4	P12/250	-
AC/P	-	41FP 41MP	-	-	L4	ML4	-	104V TT4	ML4	LL4	-
AC/P1	PA1	41MXP	-	-	-	-	-	054V	-	LL4	-
AC/P4	-	-	-	-	-	-	LL4C	-	-	-	-



COMMERCIAL EQUIVALENTS

AC/Pen-C50B

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
AC/Pen	7A2	MP/Pen	-	A70B	-	N40 MKT4 MPT4	AC/Pen	Pen4VA	N40 MKT4 MPT4	APP4A	-
AC/S2 Pen	8A1	MS/Pen	-	A50A	SPT4A	MSP4	-	SP4	MSP4	HP4101	-
AC/SG	8A1	41MSG	-	-	-	MS4B	-	S4VB	MS4B	AS4120	-
AC/ SGVM	9A1	-	-	-	-	-	-	-	-	AS4125	-
AC/SP3	-	-	-	-	-	-	-	TSP4	-	-	-
AC/TH1	20A1	4THA 41STH	-	A36A A36B A36C	-	X41	-	TH4B	X41	TH4A TH4B	-
AC/TP	-	-	-	-	-	-	-	TP4	-	TP4	-
AC/VP1	9A1	MVS/Pen	AF2	A50M A50N	VPT4	VMP4G	-	VP4 VP4A	VMP4G	VP4C	-
AC/VP2	-	MVS/PenB	-	A50P	-	W42	-	VP4B	W42	VP4B	-
AF2	9A1	MVS/Pen	-	A50M A50N	VPT4	VMP4G	AC/VP1	VP4	VMP4G	HP4106c HP4115c	-
AG8	-	OM8	-	-	-	-	-	EK32	-	-	-
AHC	R3	43IU	1861	-	-	MU14	UU5	IW4/500	MU14	-	-
AK1	15A2	41MPG	-	A80A	VHT4	MX40 X42	-	FC4	MX40 X42	VO4	-
AL3	-	-	AL4	-	-	-	-	-	-	APP4Bs	-
AL4	-	-	AL3	-	-	-	-	-	-	APP4Bs	-
APP4A	7A2	MP/Pen	-	A70B	-	N40 KT42 MPT4	AC/Pen	Pen4VA	N40 KT42	-	-
APP4B	7A3	42/OT 42MP/Pen	-	A70C A70D	PT4	N41 KT41	AC/2Pen	PenA4	KT41	-	-
APP4Bs	-	-	AL3 AL4	-	-	-	-	-	-	-	-
APP4E	-	-	-	-	-	-	AC/4Pen	PenB4	-	-	-
APP4G	-	-	-	-	-	N43	-	-	-	-	-
APV4	R2	43IU	1867 1868 1881	A11B A11D	-	MU12	UU4	IW4/350	MU12	-	-
APV4100	-	460BU	-	-	-	U12/14 U14	U120/500	DW4/500	U12/14 U14	RV120/500	-
AS4120	-	41MSG	-	-	-	MS4 MS4B	AC/SG	SP4	MS4 MS4B	-	-
AS4125	-	MVSG	-	A40M	-	VMS4 VMS4B U143	AC/SGVM	MM4V	VMS4 VMS4B	-	-
AZ31	-	-	-	-	-	-	-	-	-	-	-
AZ41	-	-	V41	-	-	-	-	-	-	-	-
B21	-	-	-	K33B	-	-	PD22OA	PM2BA	-	CB220	-
B36	12SN7	-	-	-	-	-	-	-	-	-	12SN7
B63	-	-	-	-	-	-	-	-	-	-	12SX7
B65	6SN7 5692 6180	6SN7	-	-	-	QB65	-	ECC32 ECC33	QA2408	6SN7	6A6 6SN7 5692 6180
B152	12AT7 6060	-	ECC81	-	-	B309 QB309	-	ECC81	B309 QA2406	-	12AT7 6201
B262	-	215SG	-	K40B	S2	S23	SG215 SG215A	PM12A PM12	S23	SS210	-
B309	12AT7 6060	-	ECC81	-	-	B152 QB309	-	ECC81	QA2406	-	12AT7 6201
BF61	-	67PT	EL41	-	-	N150	-	EL41	-	-	-
BF62	-	-	EL42	-	-	N151	-	EL42	-	-	-
BPM04	6AQ5	-	EL90	-	-	-	-	EL90	N727	-	6AQ5 6005
C10B	1D5	40SUA	CY1C	-	R2	-	U4020	URIC	-	V20	-
C20C	10D1	-	-	-	-	-	-	2D13C	-	DD13	-
C23B	11D3	13DHA	-	-	HAD	-	HLDD1320	TDD13C	-	DDT13	-
C27D	-	-	-	-	-	-	Pen40DD	-	-	DDPP39M	-
C30B	4D1	-	CC2	-	DA	-	HL1320	HL13C	-	HL13	-
C36A	-	202STH	-	-	-	-	TH2321	TH21C	-	-	-
C35B	-	302THA	-	C36C	-	-	TH2321	TH30C	-	-	-
C36C	-	302THA	-	C36B	-	-	TH2321	TH30C	-	-	-
C39A	-	-	-	-	-	-	-	EM1	-	ME6S	-
C50B	8D2	-	CF1 CF7	-	-	-	-	TV6 SP13C	-	EM1 SP13B	-



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
C50N	9D2	13VPA	-	-	-	-	VP1322	VP13C	-	VP13B	-
C70D	7D6	-	-	-	PTZ	-	Pen3520	Pen36C	-	PP35	-
C70E	7D6	-	-	-	PTZ	-	Pen3520	Pen36C	-	PP35	-
C80B	15D1	13PGA	-	-	VHTA	-	-	FC13C	-	VO13	-
CB215	-	220B 240B	-	K33A	HP2	-	PD220	PM2B	-	-	-
CB220	-	-	-	K33B	-	-	PD220A	PM2BA	B21	-	-
CBC1	-	-	-	-	-	-	-	TDD13	-	DDT13s	-
CBL1	-	-	-	-	-	-	-	-	-	DDPP39s	-
CC2	4D1	-	-	C30B	DA	-	HL1320	HL13c	-	HL13	-
CCH35	-	OM10	ECH3G	-	-	-	-	ECH33	-	-	-
CF1	8D2	13SPA	CF7	C50B	-	-	-	SP13A	-	SP13	-
CF2	-	-	-	-	-	-	-	SP13C	-	SP13B	-
CF7	8D2	13SPA	CF1	C50B	-	-	-	VP13A	-	HP13s	-
CF61	-	-	ECH41	-	-	-	-	SP13A	-	SP13	-
CF141	-	-	UCH41	-	-	-	-	ECH41	-	-	-
CK1	-	-	-	-	-	-	-	UCH41	-	-	-
CK502AX	-	-	DL71	-	-	-	-	FC13	-	-	-
CK505AX	-	-	DF70	-	-	-	-	DL71	-	-	-
CK506AX	-	-	DL72	-	-	-	-	DF70	-	-	-
CK512AX	-	-	DF66	-	-	-	-	DL72	-	-	-
CK522AX	-	-	-	-	-	-	-	DF66	-	-	-
CK523AX	-	-	DL66	-	-	-	-	-	-	-	6088
CK542DX	-	-	DL650	-	-	-	-	DL66	-	-	-
CK549DX	-	-	DF650	-	-	-	-	-	-	-	-
CK556AX	-	-	-	-	-	-	-	-	-	-	5676
CK568AX	-	-	-	-	-	-	-	-	-	-	5677
CK569AX	-	-	-	-	-	-	-	-	-	-	5678
CK570AX	-	-	-	-	-	-	-	-	-	-	5697
CK571AX	-	-	-	-	-	-	-	-	-	-	5886
CK573AX	-	-	-	-	-	-	-	-	-	-	6029
CK605CX	-	-	-	-	-	-	-	-	-	-	5702
CK608BX	-	-	-	-	-	-	-	-	-	-	5704
CK608CX	-	-	-	-	-	-	-	-	-	-	5703
CK619CX	-	-	-	-	-	-	-	-	-	-	5744
CK1003	-	-	-	-	-	-	-	-	-	-	OZ4A
CK1013	-	-	-	-	-	-	-	-	-	-	5517
CK1027	-	-	-	-	-	-	-	-	-	-	6174
CL4	-	-	-	-	-	-	-	Pen26	-	PP24s	-
CL33	-	332Pen	-	-	-	-	-	-	-	-	-
CY1	-	-	-	-	-	-	-	UR1	-	V20s	-
CY3	-	-	-	-	-	-	-	UR3	-	PV30s	-
CY1C	1D5	40SUA	-	C10B	RZ	-	U4020	UR1C	-	V20	-
CY31	-	OM1	-	-	-	-	U201	-	-	-	-
D1	-	-	-	-	-	-	-	T4D	-	-	-
D1C	-	-	-	-	-	-	-	-	-	-	957
D2C	-	-	-	-	-	-	-	-	-	-	958A
D2M9	6AL5 6058	DD6	EAA91	-	DD6	D152 D77 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 6058 5726 959
D3F	-	-	-	-	-	-	-	-	-	-	-
D4	HLA2	41MHL	-	A30D	-	MH4	AC/HL	244V 354V	MH4	HL4+	-
D41	DDA41	DDL4	-	A20B	-	-	V914	2D4A	-	DD4	-
D61	-	-	EAF41	-	-	-	-	EAF41	-	-	-
D63	6H6*	OM3	-	-	6H6*	-	-	EB34	-	-	6H6*
D77	6AL5 6058	DD6	EAA91 D2M9	-	DD6	D152 QD77	6D2	EB91 M8079	QA2404	DD6G	6AL5 5726 6058
D152	6AL5 6058	DD6	EAA91 D2M9	-	-	D77 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 5726 6058
DA	4D1	-	CC2	C30B	-	-	HL1320	HL13C	-	HL13	-
DA30	-	-	-	-	-	-	PA40	DO30	PX25A	-	1A3
DA90	-	-	-	-	-	-	1FD13	-	-	-	1H5
DAC32	1H5	1H5	-	1H5	-	HD14	-	-	HD14	-	1S5
DAF91	1S5	1S5	-	1S5	-	ZD17	1FD9	-	ZD17	-	1AF5
DAF96	-	-	-	-	-	-	-	-	-	-	1AH5
DC70	-	-	-	-	-	-	-	-	-	-	6375

\* Series or parallel circuits.



COMMERCIAL EQUIVALENTS

DC80-DL63

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
DC80	-	-	-	-	-	-	-	-	-	-	1E3
DCC90	-	-	-	-	-	-	-	-	-	-	3A5
DD4	-	DD4	-	A20B	-	D41	V914	2D4A	-	DD4	-
DD4D	-	-	-	-	-	-	-	2D4B	-	DD4D	-
DD6	6AL5 6058	-	EAA91 D2M9	-	-	D152 D77 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 5726 6058
DD6G	6AL5 6058	DD6	EAA91 D2M9	-	DD6	D152 D77 QD77	6D2	EB91 M8079	D77 QA2404	-	6AL5 5726 6058
DD13	10D1	-	-	C20C	-	-	-	2D13C	-	-	-
DD13s	-	-	-	-	-	-	-	2D13A	-	-	-
DD465	-	-	-	-	-	-	-	2D4	-	-	-
DD620	-	-	-	-	ZD	-	-	-	-	DD6	-
DDA41	-	DDL4	-	A20B	-	D41	V914	2D4A	D41	-	-
DDL4	DDA41	-	-	A20B	-	D41	V914	2D4A	D41	-	-
DDPP4B	-	42/OTDD	-	-	PT4D	DN41	AC/2- PenDD	-	DN41	-	-
DDPP4M	-	-	-	A27D	-	-	-	Pen4DD	-	-	-
DDPP6Bs	-	-	-	-	-	-	-	EBL1	-	-	-
DDPP39	-	-	-	-	-	-	PenDD- 4020	-	-	-	-
DDPP- 39M	-	-	-	-	-	-	-	Pen40DD	-	-	-
DDPP39s	-	-	-	-	-	-	-	CBL1	-	-	-
DDT	11A1 11A2	-	-	A23A	H4D	MHD4	AC/HLDD	TDD4	MHD4	DDT4	-
DDT2	-	-	-	-	-	-	-	TDD2A	-	-	-
DDT2A	-	-	-	-	-	-	-	-	HD21	-	-
DDT2B	-	210DDT	-	K23A K23B A23A	H2D	HD23	HL21/DD	TDD2 TDD2A	HD23	-	-
DDT4	11A1 11A2	DDT	-	A23A	H4D	MHD4	AC/HLDD	TDD4	MHD4	-	-
DDT6s	-	-	EBC3	-	-	-	-	EBC3	-	-	-
DDT13	11D3	13DHA	-	C23B	HAD	-	HLDD1320	TDD13C	-	-	-
DDT13s	-	-	CBC1	-	-	-	-	2D13A	-	DD13s	-
DF33	1N5	1N5	-	1N5	1N5	Z14	-	-	Z14	-	1N5
DF66	-	-	-	-	-	-	-	-	-	-	CK512AX
DF67	-	-	-	-	-	-	-	-	-	-	6008
DF70	-	-	-	-	-	-	-	-	-	-	CK505AX
DF91	1T4	1T4	-	1T4	1T4	W17	1F3	-	W17	-	1T4
DF92	1L4	-	-	-	-	-	1F2	-	-	-	1L4
DF96	-	-	-	-	-	-	-	-	-	-	1AF4
DF650	-	-	-	-	-	-	-	-	-	-	1AJ4
DF904	1U4	-	-	-	-	-	-	-	-	-	CK549DX
DH30	11D5	-	-	-	HSD	DH30	-	-	DH30	-	1U4
DH42	-	-	-	-	-	-	AC/HLDD	TDD4	-	DDT4	-
DH63	6Q7	-	-	-	-	-	-	-	-	6Q7	6Q7
DH73	6T7	-	-	-	-	-	-	-	-	-	6B6
DH76	12Q7	-	-	-	-	-	-	-	-	-	6T7
DH77	6AT6 6066	-	EBC90 EBC91	-	-	-	-	EBC90 EBC91	-	12Q7	6Q6
DH81	7B6	-	-	-	-	-	-	-	-	-	12Q7
DH142	-	-	UBC41	-	-	-	10LD3	UBC41	-	-	6AT6
DH147	-	OM4*	-	-	-	DL63	-	EBC33*	DL63	-	6AQ6
DH149	7C6	7C6	-	-	-	-	-	-	-	-	6AV6
DH150	-	62DDT	EBC41	-	-	-	6LD3	EBC41	-	-	6BT6
DK32	1A7	1A7	-	-	1A7	X14	-	-	X14	-	7B6
DK91	1R5	1R5	-	-	1R5	X17	1C1	-	X17	-	1639*
DK92	1AC6	1AC6	-	-	-	X18	1C2	-	X18	-	7C6
DK96	-	-	-	-	-	-	-	-	-	-	-
DL33	3Q5	3Q5	-	3Q5	3Q5	N15 N16 N14	-	-	N15 N16 N14	-	3Q5
DL35	1C5	1C5	-	1C5	1C5	-	-	-	-	-	1C5
DL36	-	-	-	-	-	-	-	-	-	-	1Q5
DL63	-	OM4	-	-	-	DH147	-	EBC33	-	-	1639

\* Series or parallel circuits.



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
DL66	-	-	-	-	-	-	-	-	-	-	CK523AX
DL67	-	-	-	-	-	-	-	-	-	-	6007
DL70	-	-	-	-	-	-	-	-	-	-	6373
DL71	-	-	-	-	-	-	-	-	-	-	CK502AX
DL72	-	-	-	-	-	-	-	-	-	-	CK506AX
DL74M	12Q7	-	-	-	-	-	-	-	-	-	12Q7
DL82	7B6	-	-	-	-	-	-	-	-	-	7B6
DL91	1S4	1S4	-	1S4	1S4	-	-	-	-	-	1S4
DL92	3S4	3S4	-	3S4	3S4	N17	1P10	-	N17	-	3S4
DL93	-	3A4	-	-	-	-	-	-	-	-	3A4
DL94	3V4	3V4	-	-	-	N19	1P11	-	N19	-	3V4
DL95	3Q4	-	-	-	-	N18	-	-	N18	-	3Q4
DL96	3C4	-	-	-	-	-	-	-	-	-	3C4
											3E5
DL145	-	-	-	-	-	-	10LD11	-	-	-	-
DL650	-	-	-	-	-	-	-	-	-	-	CK542DX
DM70	-	-	DM71	-	-	-	-	DM71	-	-	1M3
DM71	-	-	DM70	-	-	-	-	DM70	-	-	1M3
DN41	-	42/OTDD	-	-	PT4D	-	AC/2- PenDD	-	-	DDPP4B	-
DN143	-	-	-	-	-	-	-	EBL21	-	-	-
DO24	-	-	-	-	-	PX25	PP5/400	-	PX25	P27/500	-
DO26	-	-	-	-	-	PX25	PP5/400	-	PX25	P27/500	-
DO30	-	-	-	-	-	DA30	PA40	-	DA30	-	-
									PX25A		
DP61	-	-	EF95 PMO5	-	-	-	-	EF95 M8100	-	-	6AK5 5591
DS	-	-	-	-	-	-	-	-	-	-	-
DW2	-	506BU	1821	-	-	U10	-	-	H30	-	-
DW3	-	-	-	-	-	U9	-	-	U10	RV120/350	-
DW4	-	-	-	-	-	-	-	-	U9	RV120/350	-
DW4/350	-	-	-	-	-	-	-	-	-	RV120/500	-
DW4/500	-	-	1561	-	R4A	U14	-	-	-	RV120/350	-
DY30	-	-	-	-	-	-	-	-	U14	RV120/500	-
									U41		1B3
DY70	-	-	-	-	-	-	-	-	-	-	8016
DY80	-	-	-	-	-	-	-	-	-	-	SN956B
E1C	-	-	-	-	-	HA2	-	-	HA2	-	1X2
											955
E1F	-	-	-	-	-	ZA2	-	-	ZA2	-	1650
E2F	-	-	-	-	-	-	-	-	-	-	5731
E406N	-	4XP	-	S30C	LP4	PX4	PP3/250	ACO44 ACO54 ACO64 ACO84	PX4	P12/250	954 956
											-
E80CC	-	-	-	-	-	-	-	-	-	-	6085
E80F	-	-	-	-	-	-	-	-	-	-	6084
E80L	-	-	-	-	-	-	-	-	-	-	6227
E80T	-	-	-	-	-	-	-	-	-	-	6218
E83F	-	-	18043	-	-	-	-	-	-	-	-
E90CC	-	-	-	-	-	-	-	-	-	-	5920
EA50	-	SD61	-	-	-	-	6D1	T6D	-	-	-
EA71	-	-	-	-	-	-	-	EA76	-	-	5647
EA76	-	-	-	-	-	-	-	EA71	-	-	5647
AAA91	6AL5 6058	DD6	D2M9	-	DD6	D152 D77 QD77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 5726 6058 6AK8 6T8
EABC80	-	-	-	-	-	-	-	-	-	-	-
EA71	-	-	D61	-	-	-	-	-	-	-	-
EA72	-	-	-	-	-	WD150	-	-	-	-	-
EB34	6H6	OM3*	-	-	-	L63	-	-	D63	6H6	6H6
EB91	6AL5 6058	DD6	D2M9 EAA91	-	DD6	D152 D77 QD77	6D2	M8079	D77 QA2404	DD6G	6AL5 5726 6058
EBC3	-	-	-	-	-	-	-	-	DDT6s	-	-
EBC33	-	OM4	-	-	-	DH147 DL63	-	-	DL63	-	1639
EBC41	-	62DDT	-	-	-	DH150	6LD3	-	-	-	-
EBC80	-	-	-	-	-	-	-	-	-	-	6BD7

\* Series or parallel circuits.



COMMERCIAL EQUIVALENTS

EBC90-EF5

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI OR EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
EBC90	6AT6 6066	-	-	-	-	DH77	-	-	DH77	-	6AT6 6BT6 6066
EBC91	-	-	ABC91	-	-	DH77	-	-	DH77	-	6AQ6 6AV6 6N8 6AD8
EBF80	-	-	-	-	-	ZD152	-	-	-	-	-
EBF81	-	-	-	-	-	-	-	-	-	-	-
EBL1	-	-	-	-	-	-	-	-	-	DDPP6Bs	-
EBL21	-	-	-	-	-	DN143	-	-	-	-	-
EC41	-	67PT	-	-	-	-	-	-	-	-	-
EC52	-	-	-	-	-	-	-	RL16	-	-	-
EC53	-	-	-	-	-	-	-	RL18	-	-	-
EC54	-	-	-	-	-	-	-	RL37	-	-	-
EC55	-	-	-	-	-	-	-	-	-	-	-
EC70	-	-	-	-	-	-	-	-	-	-	5861 6K4 5718
EC80	-	-	-	-	-	-	-	-	-	-	6Q4
EC81	-	-	-	-	-	-	-	-	-	-	6R4
EC90	-	-	-	-	-	L77 QL77	-	-	L77 QA2401	-	6C4 6125
EC91	-	-	-	-	-	-	6L34	-	-	-	6AQ4
EC92	-	-	-	-	-	-	-	-	-	-	6AB4
ECC32	6SN7 5692 6180	-	-	-	-	B65 QB65	-	ECC33	B65 QA2408	-	6SN7 5692 6180
ECC33	6SN7 5692 6180	-	-	-	-	B65 QB65	-	ECC32	B65 QA2408	-	6SN7 5692 6180
ECC35	6SL7	-	-	-	-	-	-	-	-	-	6SL7 6SU7 5691
ECC40	-	-	AA61	-	-	-	-	-	-	-	-
ECC81	12AT7 6060	-	-	-	-	B152 B309 QB309	-	-	B309 QA2406	-	12AT7 6060 6201
ECC82	12AU7 6067	-	-	-	-	-	-	-	-	-	12AU7 5814 6067
ECC83	12AX7 6057	-	-	-	-	-	-	-	-	-	12AX7 5721 5751 6057 6J6 6101
ECC91	6J6	6J6	-	-	-	-	-	M8081	-	-	-
ECH2	-	-	ECH3	-	-	-	-	-	-	-	-
ECH3G	6K8	OM10*	-	-	6K8	X61M X62 X65 X66 X147 X143	6C31	ECH33* ECH35 CCH35†	X61M X62 X65 X66	6E8 6TH8 6K8	6E8 6K8 6J8 6P8
ECH21	-	-	ECH71	-	-	-	-	-	-	-	-
ECH33	6K8	OM10*	ECH3G*	-	6K8	X61M X62 X65 X66 X147 X143	6C31	ECH35 CCH35†	X61M X62 X65 X66	6E8 6TH8	6E8 6K8 6J8 6P8
ECH35	6K8*	OM10	ECH3G	-	6K8*	X61M* X62 X65* X66 X147*	6C31	ECH33	X61M* X62 X65* X66	6E8* 6TH8	6E8* 6K8* 6J8* 6P8
ECH41	-	-	CF61	-	-	-	-	-	-	-	-
ECH42	-	62TH	-	-	-	X150	6C9 6C10	-	-	-	-
ECH71	-	-	ECH21	-	-	X143	-	-	-	-	-
ECH80	-	-	-	-	-	-	-	-	-	-	6AN7
ECH81	-	-	-	-	-	-	-	-	-	-	6AJ8
ECL80	-	6AB8 63T1	-	-	-	LN152	-	-	-	-	6AB8
EF2	-	-	EF5 EF9	-	-	-	-	EF5 EF9	-	EF5 EF9	-
EF5	-	-	EF2 EF9	-	-	-	-	EF2 EF9	-	EF2 EF9	-

\* Series or parallel circuits.

† Series circuits only.



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
EF9	-	-	EF2 EF5	-	-	-	-	EF2 EF5	-	EF2 EF5	-
EF22	-	-	-	-	-	-	-	-	-	-	7G7 7L7 7T7 1232
EF36	-	OM5	-	-	-	-	-	-	-	-	-
EF37	-	OM5A OM5B	-	-	-	-	-	EF37A	-	-	-
EF37A	-	OM5B	-	-	-	-	-	-	-	-	-
EF39	-	OM6 OM7	-	-	-	W147	-	-	-	-	-
EF41	-	62VP	HF61	-	-	W150	6F15 6F16 6F13	-	-	-	-
EF42	-	-	HF62	-	-	Z150	-	-	Z150 Z90	-	-
EF50	-	63SPT	-	-	-	-	-	RL7	-	-	-
EF54	-	-	-	-	-	-	-	-	-	-	5840
EF72	-	-	-	-	-	-	-	-	-	-	6391
EF74	-	-	-	-	-	-	-	-	-	-	6BX6
EF80	6BX6 6BW7	6BX6 64SPT	-	-	-	Z152	-	-	Z719	-	6BW7
EF81	-	-	-	-	-	-	-	-	-	-	6BH5
EF82	6CH6 6132 7D10	-	-	-	-	-	-	-	-	-	6CH6 6132
EF85	-	-	-	-	-	-	-	-	-	-	6BY7
EF86	-	-	-	-	-	-	-	-	Z729	-	6267
EF91	6AM6 8D3 6064	SP6	PM07	-	6AM6	Z77 QZ77	6F12	M8083	Z77 QA2403	HP6	6AM6
EF92	9D6 6065	VP6	-	-	-	W77 QW77	-	-	W77 QA2400 W727	-	6CQ6
EF93	6BA6 5749	-	PM04	-	-	-	-	-	-	6BA6	6BA6 5749
EF94	6AU6	-	-	-	-	-	-	-	-	-	6AU6
EF95	-	-	PM05	-	DP61	-	-	M8100	-	-	6AK5 5591
EF96	-	-	-	-	6AG5	-	-	-	-	-	6AG5 6BC5
EK2	-	-	-	-	-	-	-	-	-	VO6s	-
EK32	-	AG8 OM8	-	-	-	-	-	-	-	-	-
EK90	6BE6 5750	-	HMO4	-	-	X77	-	-	X727	6BE6	6BE6 5750
EL2	-	-	-	-	-	-	-	-	-	PP6AS	-
EL3	-	-	-	-	-	-	-	-	-	PP6BS	-
EL22	7B5 7C5	-	-	-	-	KT81 N148 N147 KT61	-	-	KT81 N148 KT61	-	7B5 7C5
EL33	6AG6	-	6PX6	-	-	-	6P25	-	-	PP6BG	6AG6 6M6
EL34	-	-	-	-	-	-	-	-	-	-	6CA7
EL35	6L6	6L6	-	-	-	KT66	-	EL39	KT66	PP60	6L6 5881 5932
EL37	6L6	6L6	-	-	-	KT66	-	EL35	KT66	PP60	6L6 5881 5932 6CN6
EL38	-	-	-	-	-	-	-	-	-	-	-
EL41	-	67PT	BF61	-	-	N150	-	-	-	-	-
EL42	-	-	BF62	-	-	N151	-	-	-	-	-
EL70	-	-	-	-	-	-	-	-	-	-	SN947D
EL80	-	-	-	-	-	-	-	-	-	-	6MS
EL81	6CJ6	-	-	-	-	-	-	EL820	-	-	6CJ6
EL83	-	-	-	-	-	-	-	-	-	-	6CK6
EL85	-	-	-	-	-	-	-	-	-	-	6BN5
EL90	6AQ5	-	BPM04	-	-	-	-	-	N727	-	6AQ5 6005 6AM5
EL91	7D9	6AM5	-	-	-	N77 N144 QN77	-	M8082	N77 QA2402 QN77	-	-
EL820	6CJ6	-	EL81	-	-	-	-	EL81 TV6	-	-	6CJ6
EM1	-	-	-	C39A	-	-	-	-	-	ME6s	-
EM34	-	64ME	-	-	-	-	-	-	-	-	6CD7



COMMERCIAL EQUIVALENTS

EM35-HL4+

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
EM35	6G5G 6U5G	63ME	-	-	VFT6	Y61 Y62 Y63 Y64	6M1	-	Y61 Y62 Y63 Y64	6G5G 6U5G	-
EM80	-	-	-	-	-	-	-	-	-	-	6BR5
EQ80	-	-	-	-	-	-	-	-	-	-	6BE7
EY51	R12	SU61	-	-	-	U151	-	-	U43	-	6X2
EY70	-	-	-	-	-	-	-	-	-	-	SN954
EY80	-	-	-	-	-	-	-	-	-	-	5641
EY84	R18	-	-	-	-	-	-	-	-	-	6U3
EZ35	6X5	-	-	-	6X5	U70 U147	-	-	U70	-	6374
EZ40	-	66KU	V61	-	-	U150	UU9	-	-	-	6X5
EZ80	-	-	-	-	-	-	-	-	-	-	6W5
EZ90	6X4 6063	-	V2M70	-	-	U78 QU78	-	-	U78 QA2407	-	6ZY5
EZ91	-	-	-	-	-	-	-	-	-	-	5852
FC2	-	210PG	-	K80A	VHT2A	X22	-	-	X22	-	6V4
FC2A	-	210PG	-	K80A	VHT2A	X22	-	-	X22	-	6X4
FC4	15A2	41MPG	AK1	A80A	VHT4	MX40 X42	-	-	MX40 X42	VO4	6063
FC13	-	-	CK1	-	-	-	-	-	-	-	6202
FC13C	15D1	13PGA	-	C80B	VHTA	-	-	-	-	VO13	6203
FW4/500	-	4/100BU	-	-	-	U18/20	-	-	U18/20	RV200/600	6AV4
FW4/800	-	-	-	-	-	-	-	-	-	RV200/600	-
GZ30	5Z4 5V4	-	-	-	R52	-	-	-	-	-	5Z4 5V4
GZ32	-	54KU 53KU	GZ34	-	-	-	-	-	-	-	-
GZ33	-	53KU	-	-	-	-	-	-	-	-	-
GZ34	-	54KU 53KU	GZ32	-	-	-	-	GZ32	-	-	-
GZ40	-	-	V51	-	-	-	-	-	-	-	-
H2	-	-	-	-	-	-	-	PM2HL	-	HR210	-
H2D	-	210DDT	-	K23B	-	HD24	HL/21DD	TDD2A	HD24	MHD4	-
H4D	11A1 11A2	DDT	-	A23A	-	MHD4	AC/HLDD	TDD4	MHD4	-	DDT4
H20	-	-	-	-	-	-	-	HL20	-	R2018	-
H30	-	-	-	-	DS	-	-	-	-	-	-
H42	-	-	-	-	-	-	-	-	-	HL4G	-
H63	-	-	-	-	-	-	-	-	-	-	6F5
H210	-	-	-	-	-	-	-	PM2HL	-	HR210	-
HAA91	-	-	UAA91	-	-	-	-	-	-	-	12AL5
HABC80	-	-	-	-	-	-	-	-	-	-	19T8
HAD	11D3	13DHA	-	C23B	-	-	HLDD- 1320	TDD13C	-	DDT13	-
HBC90	12AT6	12AT6	-	-	-	-	-	-	-	-	12AT6
HBC91	-	-	-	-	-	-	-	-	-	-	12AV6
HCH81	-	-	-	-	-	-	-	-	-	-	12BK6
HD14	1H5	1H5	DAC32	1H5	1H5	-	-	DAC32	-	-	19AJ8
HD21	-	-	-	-	-	-	-	-	-	DDT2A	-
HD22	-	-	-	-	-	-	-	TDD2A	-	-	-
HD23	-	-	-	-	-	-	-	TDD2A	-	-	-
HD24	-	210DDT	-	K23B	H2D	-	HL21/DD	TDD2A	-	-	-
HF61	-	62VP	EF41	-	-	W150	6F15 6F16 6F13	EF41	-	-	-
HF62	-	-	EF42	-	-	Z150	-	EF42	-	-	-
HF93	-	-	-	-	-	-	-	-	-	-	12BA6
HF94	-	-	-	-	-	-	-	-	-	-	12AU6
HF121	-	-	UF41	-	-	W142	10F9	UF41	-	-	-
HK90	-	-	-	-	-	-	-	-	-	-	12BE6
HL2	HLB1	210HF	-	K30C	-	-	-	PM2HL	-	LD210	-
HL2K	-	-	-	-	-	-	-	PM2HL	-	HL2	-
HL4G	-	-	-	-	-	H42 MH4 MH41	-	-	H42	-	-
HL4+	HLA1	41MH 41MHL	-	A30B A30D	D4	-	AC/HL	354V	MHL4	-	-



HL13-K50M

COMMERCIAL EQUIVALENTS

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
HL13	4D1	-	CC2	C30B	DA	-	HL1320	HL13C	-	-	-
HL13C	4D1	-	CC2	C30B	DA	-	HL1320	-	-	HL13	-
HL13s	-	-	-	-	-	-	-	HL13	-	-	-
HL20	-	-	-	-	-	-	-	-	-	R2018	-
HL21	-	210HL	-	K30A K30K	-	-	HL210	PM1HL	-	-	-
HA2	-	-	E1C	-	-	-	-	-	-	-	955
HL21DD	-	210DDT	-	K23B	H2D	HD24	-	TDD2A	HD24	-	-
HL90	-	-	-	-	-	-	-	-	-	-	19AQ5
HL92	-	-	-	-	-	-	-	-	-	-	50C5
HL210	-	210HL	-	K30A K30K	-	HL21	-	PM2HL	HL21	HR210	-
HL1320	4D1	-	CC2	C30B	DA	-	-	HL13C	-	HL13	-
HLA1	-	-	-	-	-	-	AC/2HL	-	-	HL4+	-
HLA2	-	41MHL	-	A30D	D4	MH4	AC/HL	244V 354V	MH4	HL4+	-
HLB1	-	210HF	-	K30C	HL2	HL2	HL2	PM1HF	HL2	HL2	-
HLDD- 1320	11D3	13DHA	-	C23B	HAD	-	-	TDD13C	-	DDT13	-
HM04	6BE6 5790	-	EK90	-	-	X77	-	EK90	X727 X77	6BE6	6BE6 5750
HP2'	-	220B 240B	-	K33A	HP2	-	PD220	PM2B	-	CB215	-
HP6	6AM6 8D3 6064 9D2	SP6	EF91 PM07	-	6AM6	Z77 QZ77	6F12	EF91 M8083	Z77 QA2403	-	6AM6
HP13	-	13VPA	-	C50N	-	-	VP1322	VP13C	-	VP13B VP13K	-
HP13s	-	-	CF2	-	-	-	-	VP13A	-	-	-
HP210nc	-	210SPT	-	-	SPT2	Z21	SP210	SP2	Z21	-	-
HP211c	-	210VPT	-	K50M	-	Z22 VP21 W21	SP215 VP210 VP215	VP2	Z22 VP21 W21	-	-
HP4101c	8A1	41MPT	-	A50A	SPT4A	MSP4	AC/SP1	SP	MSP4	-	-
HP4105	-	-	-	-	-	-	-	VP4	-	-	-
HP4106c	9A1	-	AF2	A50M	VPT4A	-	-	VP4	-	-	-
HP4115c	-	MVSPen	AF2	A50N	VPT4B	-	-	VP4	-	-	-
HR1	R10	-	-	-	-	-	-	-	-	-	-
HR2	R10	-	-	-	-	-	-	-	-	-	-
HR210	-	210HF 210RC	-	K30A	-	HL2	HL210	PM2HL	HL2	-	-
HSD	11D5	-	-	-	-	DH30	-	-	DH30	-	-
HVR1	-	SU2130	-	-	-	-	-	-	U16	-	-
HVR2	-	-	1877	-	-	-	-	-	-	V21/7000	-
HVR2A	-	SU2150A	-	-	-	-	-	-	-	-	-
HY90	-	-	-	-	-	-	-	-	-	-	35W4
IW3	R2	-	-	-	-	-	UU4	-	-	APV4	-
IW4	R3	-	-	-	-	-	UU5	-	-	APV4	-
IW4/350	R1	-	1867 1868 1881 1861 AHC	-	-	MU12	UU4	-	MU12	APV4	-
IW4,500	R3	43IU	-	-	-	MU14	UU5	-	MU14	-	-
K23A	-	-	-	K23B	-	-	-	-	-	-	-
K23B	-	210DDT	-	-	H2D	HD24	HL21/DD	TDD2A	HD24	-	-
K30A	-	210HL	-	K30K	-	HL21	HL210	PM2HL	HL21	HR210	-
K30B	-	210LF	-	K30E	L2	L21	L2	PM2DX	L21	LD210	-
K30C	-	210HF	-	-	HL2	HL2	HL2	PM2HL	HL2	HL2	-
K30D	-	-	-	-	HL2	-	-	PM2HL	-	LD210	-
K30E	-	210LF	-	K30B	L2	L21	L2	PM2DX	L21	LL2	-
K30G	PB1	220PA	-	-	-	LP2	P220	PM2A	LP2	LP220	-
K30K	-	210HL	-	K30A	-	HL21	HL210	PM2HL	HL21	-	-
K33A	-	220B 240B	-	HP2	-	-	PD220	PM2B	-	CB215	-
K33B	-	-	-	-	-	-	PD220A	PM2BA	B21	CB220	-
K40B	-	215SG 220SG	B262	K33A	-	S21 S22 S23 S24	SG215	PM12 PM12A	S21 S22 S23 S24	SS210	-
K40N	-	-	-	-	-	-	-	PM12M	-	SE211c	-
K50M	-	210VPT	-	-	VPT2	VP21	VP210	VP2	VP21	HP211c	-



COMMERCIAL EQUIVALENTS

K50N-MHL4

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
K50N	-	-	-	-	-	-	VP210	VP2B	-	-	-
K70B	PenB1	220/OT	-	-	PT2	KT2	Pen220	PM22A	KT2	-	-
K70D	-	-	-	-	-	-	-	PM22D	-	-	-
K77A	-	-	-	-	-	-	QP240	QP22A	-	-	-
K77B	-	240QP	-	-	QPT2	-	QP230	QP22B	QP21	-	-
K80A	-	-	-	K80B	VHT2A	X22	-	FC2	X22	-	-
K80B	-	-	-	K80A	-	-	-	FC2A	-	-	-
KL35	-	-	-	-	-	-	-	-	-	-	1F5
KT2	PenB1	220/OT	-	K70B	PT2	-	Pen220	PM22A	-	-	-
KT24	-	-	-	-	-	-	Pen31	PM22D	-	-	-
KT30	7D5	-	-	-	PTA	N30	-	-	N30	PP13A	-
KT31	-	-	-	-	PTS	-	-	-	N31	-	-
KT32	25L6	-	-	-	-	-	-	-	-	-	25L6
KT33	25A6	-	-	-	-	-	-	-	-	25A6	25A6
KT41	7A3	42MP/Pen 420T	-	A70C A70D	PT4	N41	AC/2Pen	PenA4	N41	APP4B	-
KT42	7A2	-	-	-	-	-	AC/Pen	Pen4VA	-	APP4A	-
KT61	6AG6	-	EL33 6PX6	-	-	N147	6P25	EL33	-	PP6BG	6AG6 6M6 6F6 6V6 6AY6 6K6
KT63	6F6 6V6	-	-	-	-	N63	-	-	N63	-	-
KT66	-	-	-	-	-	-	-	-	-	PP60	-
KT71	50L6	-	-	-	-	-	-	-	-	50L6	50L6
KT81	7B5 7C5	-	EL22	-	-	KT81 N148	-	EL22	KT81 N148	-	7B5 7C5 6S7 6K7 6U7 5732
KTW61	-	-	-	-	-	-	-	-	-	-	-
KTW63	6K7	6K7	-	-	6K7	W61 W63	-	-	W61 W63	-	-
KTW- 74M	12K7	-	-	-	-	-	-	-	-	-	12K7
KTZ21	-	210SPT	-	-	SPT2	KTZ21	SP210	SP2	Z21 Z22 Z63	HP210nc SP2D 6J7	-
KTZ63	6J7	6J7	-	-	6J7	Z63	-	-	-	6J7 7000	-
L2	-	210LF	-	K30B K30E	L2	L21	L2	PM2HL	L21	LL2	-
L4	-	41MP	-	-	-	ML4	AC/P	TT4	ML4	-	-
L21	-	210LF	-	K30B K30E	L2	-	L2	PM2DX	-	LL2	-
L21DD	-	-	-	-	-	-	-	TDD2A	-	-	-
L63	6J5	6J5	-	-	6J5	-	-	-	-	-	6J5 6C5 6L5 6C4 6125
L77	6C4	-	EC90	-	-	QL77	-	EC90	QA2401	-	-
LD210	-	210LF	-	K30B K30D K30E	HL2	L210	-	PM1LF	L210	-	-
LL2	-	-	-	-	L2	L21	L2	PM2HL	L21	-	-
LL4	PA1	41MP	-	-	-	ML4	AC/P AC/P1 AC/P4	104V TT4	-	-	-
LL4C	-	-	-	-	-	-	-	-	-	-	-
LN152	-	6AB8 63T1	ECL80	-	-	-	-	ECL80	-	-	6AB8
LP2	-	230XP	-	-	-	P2	P220A	PM202	P2	LP220	-
LP4	-	4XP	E406N	S30C	-	PX4	PP3/250	ACO44	PX4	P12/250	-
LP220	PB1	220P 220PA	-	K30G	-	LP2	P220	PM2A	LP2	-	-
ME4s	-	-	-	A39A	-	-	-	TV4 TV4A	-	-	-
ME6s	-	-	-	C39A	-	-	-	TV6 EM1	-	-	-
MH4	HLA2	41MHL	-	A30D	D4	-	AC/HL	244V 354V	-	HL4+	-
MH41	HLA1	41MH	-	A30B	-	-	AC/2HL	484V	-	HL4+	-
MH4105	15A2	41MPG	AK1	-	VHT4	MX40 X42	-	-	X42	-	-
MHD4	11A1 11A2	DDT	-	A23A	H4D	-	AC/HLDD	TDD4	-	DDT4	-
MHL4	-	41MLF	-	-	-	-	AC/HL	244V	-	HL4+	-



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
MKT4	7A2	MP/Pen	-	A70B	-	MPT4 N40	AC/Pen	Pen4VA	MPT4 N40	APP4A	-
ML4	PA1	41MP	-	-	L4	-	AC/P	TT4	-	LL4	-
MM4V	-	-	-	-	-	VMS4B	AC/SG AC/SGVM	-	VMS4B	AS4125	-
MP/ Pen-A	7A2	-	-	A70B	-	N40 MKT4 MPT4 MKT4 N40	AC/Pen	Pen4VA	N40 MKT4 MPT4 MKT4 N40	-	-
MPT4	7A2	MP/Pen	-	A70B	-	-	AC/Pen	Pen4VA	-	APP4A	-
MS4	-	-	-	-	-	-	AC/SG	-	-	AS4120	-
MS4B	SGA1	MSG/LA	-	-	-	-	AC/SG	SP4	-	AS4120	-
MSG/LA	SGA1	-	-	-	-	MS4B	AC/SG	SP4	MS4B	AS4120	-
MSP4	8A1	MS/Pen	-	A50A	SPT4A	-	AC/S2Pen	SP4	-	HP4101	-
MS/Pen	8A1	-	-	A50A	SPT4A	MSP4	AC/S2Pen	SP4	MSP4	APP4A	-
MS/PenB	-	-	-	A50B	-	-	-	SP4B	-	-	-
MU12	R2	-	1867 1868 1881	-	-	-	UU4	IW4/350	-	APV4	-
MU12/14	-	-	-	-	-	-	UU5	IW4/500	-	-	-
MU14	R3	43IU	1861 AHC	-	-	-	UU5	IW4/500	-	-	-
MV/SG	VSGA1	-	-	-	-	VMS4B	AC/SG AC/SGVM	S4VA	VMS4B	AS4125	-
MVS/Pen	9A1	-	AF2	A50M A50N	VPT4	VMP4G	AC/VP1	VP4 VP4A	VMP4G	HP4115/5	-
MVS/ PenB	-	-	-	A50P	-	W42	AC/VP2	VP4B	W42	VP4	-
MX40	15A2	41MPG	AK1	A80A	VHT4	X42	-	FC4	X42	MH4105	-
N14	1C5	1C5	DL35	DL35	-	-	-	DL35	-	-	1C5
N15	3Q5	3Q5	DL33	-	-	-	-	DL33	N16	-	3Q5
N16	3Q5	3Q5	DL33	-	-	-	-	DL33	N15	-	3Q5
N17	3S4	3S4	DL92	DL92	-	-	1P10	DL92	-	-	3S4
N18	3Q4	3Q4	DL95	-	-	-	-	DL95	-	-	3Q4
N19	3V4	3V4	DL94	-	-	-	1P11	DL94	-	3V4	3V4
N30	7D5	-	-	-	PTA	-	-	-	-	PP13A	-
N31	-	-	-	-	PTS	KT31	-	-	KT31	-	-
N40	7A2	MP/Pen	-	A70B	-	MKT4 MPT4 KT41	AC/Pen	Pen4VA	MKT4 MPT4 KT41	APP4A	-
N41	7A3	42MP/Pen 42/OT	-	A70C A70D	PT4	-	AC/2Pen	PenA4	KT41	APP4B	-
N43	-	-	-	-	-	-	-	-	-	APP4G	-
N63	6F6	-	-	-	-	KT63	-	-	KT63	6F6	6F6
N77	6AM5 7D9	6AM5	EL91	-	-	N144 QN77	-	EL91 M8082	QA2402	-	6AM5
N142	-	451PT	UL41 UL46	-	-	-	10P14	UL41 UL46	-	-	-
N144	6AM5 7D9	6AM5	EL91	-	-	N77 QN77	-	EL91 M8082	QA2402	-	6AM5
N145	-	-	-	-	-	-	10P13	-	-	-	-
N147	6AG6	-	6PX6 EL33 EL22	-	-	KT61	6P25	EL33	KT61	PP6BG	6AG6 6M6 7B5 7C5
N148	7C5	7C5	-	-	-	KT81	-	EL22	KT81	-	-
N150	-	67PT	EL41 BF61	-	-	-	-	EL41	-	-	-
N151	-	-	EL42 BF62	-	-	-	-	EL42	-	-	-
N152	-	21A6 213Pen	PL81	-	-	-	-	PL81 PL820	N339	-	21A6
N153	-	15A6	PL83	-	-	N309	-	PL83	N309	-	15A6
N309	-	15A6	PL83	-	-	N153	-	PL83	-	-	15A6
N329	-	16A5	PL82	-	-	-	-	PL82	-	-	16A5
N339	-	163Pen 21A6 213Pen	PL81	-	-	N152	-	PL81	-	-	21A6
N727	6AQ5	-	EL90 BPM04	-	-	-	-	EL90	-	-	6AQ5 6005 O1A 40
O0A	-	-	-	-	-	-	-	-	-	-	-



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
O1A	-	-	-	-	-	-	-	-	-	-	O0A 40
O54V	PA1	41MXP	-	-	-	-	AC/P1	-	-	LL4	-
OA3	VR70	-	-	-	-	-	-	-	-	-	VR75
OB3	VR90	-	-	-	-	-	-	-	-	-	VR90
OC3	VR105	-	-	-	-	-	-	-	-	-	VR105
OD3	VR150	-	-	-	-	-	-	-	-	-	VR150
OE3	-	-	85A1	-	-	-	-	85A1	-	-	-
OG3	-	-	85A2	-	-	Q583/3	-	85A2	QS83/3	-	-
OM1	-	-	-	-	-	-	U281	CY31	-	-	-
OM3	6H6	-	-	-	-	D63	-	EB34*	D63	6H6	6H6
OM4	-	-	-	-	-	DL63 DH147	-	EBC33	DL63	-	1639
OM5	-	-	EF36	-	-	-	-	EF36	-	-	-
OM5A	-	-	EF37	-	-	-	-	EF37	-	-	-
OM5B	-	-	EF37A	-	-	-	-	EF37A	-	-	-
OM6	-	OM7	EF39	-	-	W147	-	EF39	-	-	-
OM7	-	OM6	EF39	-	-	W147	-	EF39	-	-	-
OM8	-	AG8	-	-	-	-	-	EK32	-	-	-
OM9	-	-	EL32	-	-	-	-	EL32	-	-	-
OM10	6K8	-	ECH3G* ECH35	-	-	X61M X65 X147	6C31	ECH33* ECH35 CCH35†	X61M X65	6E8 6TH8	6E8 6K8
OZ4A	-	-	-	-	-	-	-	-	-	-	CK1003
P2	-	230XP	-	-	-	P2	P220A	PM202	P2	SP220	-
P12/250	-	4XP	E406N	S30C	LP4	PX4	PP3/250	ACO44	PX4	-	-
P27/500	-	-	-	-	-	-	PP5/400	DO24 DO26	PX25	-	-
P215	-	215P	-	-	-	-	-	PM2	-	-	-
P220	-	220PA	-	K30G	-	LP2	-	PM2A	LP2	LP220	-
P220A	-	230XP	-	-	LP2	P2	-	PM202	P2	SP220	-
PA1	-	41MXP	-	-	-	-	AC/P1	O54V	-	LL4	-
PA20	-	2P	-	S30D	-	-	-	ACO42	-	-	-
PA40	-	-	-	-	-	DA30 PX25A	V503	DO30	DA30 PX25A	-	-
PCC84	7AN7	-	-	-	-	-	30L1	-	-	-	7AN7
PCF80	-	-	-	-	-	-	30C1	-	-	-	8A8
PCF82	9U8	-	-	-	-	-	-	-	-	-	-
PD220	-	220B 240B	-	K33A	HP2	-	PD220	PM2B	-	CB215	-
PD220A	-	-	-	K33B	-	-	PD220A	PM2BA	-	CB220	-
Pen4DD	-	-	-	A27D	-	-	-	-	-	DDPP4M	-
Pen4VA	7A2	MP/Pen	-	A70B	-	N40 MKT4 MPT4	AC/Pen	-	N40 MKT4 MPT4	APP4A	-
Pen4VB	7A3	-	-	-	-	-	AC/2Pen	-	-	APP4B	-
Pen13C	7D8	-	-	-	-	-	-	-	-	PP2018	-
Pen20	-	-	-	-	-	-	-	-	-	PP24s	-
Pen26	-	-	-	-	-	-	-	CL4	-	-	-
Pen31	-	-	-	-	-	KT24	-	PM22D	KT24	-	-
Pen36C	7D6	-	-	C70D	PTZ	-	Pen3520	-	-	PP35	-
Pen40DD	-	-	-	C27D	-	-	-	-	-	DDPP39M	-
Pen220	PenB1	220/OT	-	K70B	PT2	KT2	-	PM22A	KT2	-	-
Pen220A	-	-	-	-	-	-	-	-	-	PP225	-
Pen231	-	-	-	-	-	-	-	PM22D	-	-	-
Pen1340	7D8	-	-	-	-	-	-	-	-	-	-
Pen3520	7D6	-	-	C70D	PTZ	-	-	Pen36C	-	PP35	-
PenA1	-	PT41	-	-	-	PT4	-	PM24M	PT4	PP4	-
PenA4	7A3	42MP/Pen 42OT	-	A70C A70D	PT4	KT41 N41	AC/2Pen	-	KT41 N41	APP4B	-
PenB1	-	220/OT	-	K70B	PT2	KT2	Pen220	PM22A	KT2	-	-
PenB4	-	-	-	-	-	-	AC/4Pen	-	-	APP4E	-
PenDD-4020	-	-	-	-	-	-	-	-	-	DDPP39	-
PL21	-	-	-	-	-	-	-	-	-	-	2D21
PL81	-	21A6	-	-	-	N152	-	PL820	N339	-	21A6
PL82	-	213Pen 16A5 163Pen	-	-	-	-	-	-	N329	-	16A5
PL83	-	15A6	-	-	-	N153 N309	-	-	N309	-	15A6
PL820	-	21A6 213Pen	PL81	-	-	N152	-	PL81	N339	-	21A6

\* Series or parallel circuits.

† Series circuits only.



PM04-PT41

COMMERCIAL EQUIVALENTS

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
PM04	6BA6 5749	-	EF93	-	-	-	-	EF93	W727	6BA6	6BA6 5749
PM05	-	-	EF95	-	DP61	-	-	EF95 M8100	-	-	6AK5 5591
PM07	6AM6 8D3 6064	SP6	EF91	-	6AM6	Z77 QZ77	6F12	EF91 M8083	Z77 QA2403	HP6	6AM6 6064
PM1HF	HLB1	210HF	-	K30C	HL2	HL2	HL2	-	HL2	HR210	-
PM1HL	-	210HL	B228	K30A K30K	-	HL21	HL210	-	HL21	HL2	-
PM2	-	220P	-	-	-	-	-	-	-	P215	-
PM2A	PB1	220PA	-	K30G	-	LP2	P220	-	LP2	LP220	-
PM2B	-	220B 240B	-	K33A	HP2	-	PD220	-	-	CB215	-
PM2BA	-	-	-	K33B	-	-	PD220A	-	B21	CB220	-
PM2D	-	210LF	-	K30B	L2	L21	L2	PM2DX	L21	HL2	-
PM2DX	-	210LF	-	K30B K30E	L2	L21	L2	PM2HL	L21	HL2	-
PM2HL	HLB1	210HL	-	-	-	HL2	HL2	-	HL2	-	-
PM12	-	215SG	B262	-	S2	S23	SG215 SG215A	PM12A	S23	SS210	-
PM12A	-	215SG	B262	-	S2	S23	SG215 SG215A	PM12	S23	SS210	-
PM12M	-	220VS 220VSG	-	K40N	VS2	-	S215VM	PM12V	VS24 VS24K	SE211C	-
PM12V	-	220VS 220VSG	-	K40N	VS2	-	S215VM	PM12M	VS24 VS24K	SE211C	-
PM22	-	220PT	-	-	-	PT240	-	-	PT240	-	-
PM22A	PenB1	220/OT	-	K70B	PT2	KT2	Pen220	-	KT2	-	-
PM22C	-	-	-	-	-	-	-	-	-	PP225	-
PM22D	-	-	-	-	-	KT24	Pen31	-	KT24	-	-
PM24	PenA1	PT41	-	-	-	-	-	-	PT4	PP4	-
PM24A	PenA1	PT41	-	-	-	-	-	-	PT4	PP4	-
PM24B	-	PT41B	-	-	-	-	-	PM24C PM24D	-	-	-
PM24C	-	PT41B	-	-	-	-	-	PM24B PM24D	-	-	-
PM24D	-	PT41B	-	-	-	-	-	PM24C PM24B	-	-	-
PM24E	-	-	-	-	-	-	-	-	PT25	-	-
PM24M	PenA1	PT41	-	-	-	-	-	-	PT4	PP4	-
PM202	-	230XP	-	-	LP2	P2	P220A	-	P2	SP220	-
PM252	-	230XP	-	-	LP2	P2	P220A	-	P2	SP220	-
PP2	-	-	-	-	-	-	Pen220	PM22A	-	-	-
PP3/250	-	4XP	E406N	S30C	LP4	PX4	-	ACO44	PX4	P12/250	-
PP4	PenA1	41SPT	-	-	-	PT4	Pen425	PM24M	-	-	-
PP5/400	-	-	-	-	-	PX25	-	DO24	PX25	-	-
PP6As	-	-	EL2	-	-	-	-	EL2	-	-	-
PP6Bg	-	-	6PX6 EL33	-	-	N147 KT61	6P25	EL33	KT61	-	6AG6 6M6 5636 5871
PP6Bs	-	-	EL3	-	-	-	-	EL3	-	-	-
PP13A	7D5	-	-	-	PTA	N30 KT30	-	-	N30 KT30	-	-
PP24s	-	-	-	-	-	-	-	CL4 Pen26	-	-	-
PP34	-	402/OT 402Pen	-	-	PTZ	-	-	-	-	-	-
PP35	7D6	-	-	C70D	PTZ	-	Pen3520	Pen36C	-	-	-
PP60	-	-	-	-	-	KT66	-	-	KT66	-	-
PP222	-	-	-	-	-	-	Pen220	-	-	-	-
PP225	-	220PT 230PT	-	-	-	-	Pen220A	PM22C	-	-	-
PP2018	-	-	-	-	-	-	-	Pen20	-	-	-
PT2	PenB1	220/OT	-	K70B	-	KT2	Pen220	PM22A	KT2	-	-
PT4	PenA1	PT41	-	-	-	-	-	PM24M	PT4	APP4B	-
PT4D	-	42/OTDD	-	-	-	DN41	AC/2- PenDD	-	DN41	DDPP4B	-
PT10	-	-	-	-	-	-	AC/5Pen	-	-	APP4B	-
PT25	-	-	-	-	-	-	-	PM24E	-	-	-
PT41	PenA1	-	-	-	-	PT4	-	PM24M	PT4	PP4	-







## R16-T4D

## COMMERCIAL EQUIVALENTS

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
R16	1T2	-	-	-	-	U37	-	-	U37	-	1T2
R17	6157	-	-	-	-	-	-	-	-	-	6157
R18	-	-	EY84	-	-	-	-	EY84	-	-	6374
R19	-	-	-	-	-	-	-	-	-	-	1X2A
R42	-	44IU	-	A11C	-	-	UU5	W4/350	MU12 MU14 U50	RV120/350	-
R52	5Y3	-	-	-	-	U50	-	-	-	-	5AZ4 5Y3
R2018	-	-	-	-	-	-	-	H20 HL20	-	-	-
RL7	-	-	-	-	-	-	-	EF54	-	-	-
RL16	-	-	-	-	-	-	-	EC52	-	-	-
RL18	-	-	-	-	-	-	-	EC53	-	-	-
RL37	-	-	-	-	-	-	-	EC54	-	-	-
RV120/350	-	442BU	1861	S11A S11D	R42	U10 U12	UU120/350	DW4/350	U10 U12	-	-
RV120/500	-	-	1561	-	R4A	U14	UU120/500	DW4/500	U14	-	-
RV200/600	-	4/100BU	-	-	-	U18/20	-	FW4/500 FW4/800	U18/20	-	-
RZ	1D5	40SUA	CY1C	C10B	RZ	-	U4020	UR1C	-	V20	-
S2	-	215SG	B262	-	-	S23	SG215 SG215A	PM12	S23	-	-
S4V	-	-	-	-	-	-	-	-	-	AS4120	-
S4VB	SGA1	MSG/LA	-	-	-	MS4B	AC/SG	-	MS4B	AS4120	-
S11A	R1	-	-	-	-	-	-	DW2	-	RV120/350	-
S11D	R2	-	-	-	-	-	-	DW4/350	-	RV120/350	-
S21	-	-	-	-	-	-	-	-	-	SS210	-
S22	-	-	-	-	-	-	-	-	-	SS210	-
S23	-	215SG	B262	-	S2	-	SG215 SG215A	PM12	-	SS210	-
S24	-	-	-	-	-	-	-	-	-	SS210	-
S30C	-	4XP	E406N	-	LP4	PX4	PP3/250	ACO44	PX4	P12/250	-
S30D	-	2P	-	-	-	-	PA20	ACO42	-	-	-
S215	-	-	-	-	S2	-	-	PM12	S21	SS210	-
S215M	5B1	215SG	-	K40B	-	S23	-	PM12	S23	SS210	-
S215VM	-	220VS 220VSG	-	K40N	VS2	-	-	PM12A PM12M	VS24/K	SE211c	-
SD	DDA41	DD4	-	A20B	SD	D41	V914	2D4A	D41	DD4	-
SD61	-	-	-	-	-	-	6D1	EA50	-	-	-
SE211c	-	220VS 220VSG	-	K40N	VS2	VS24	S215VM	PM12M	VS24	-	-
SG215	-	215SG	B262	-	S2	S23	-	PM12	S23	SS210	-
SG215A	-	215SG	B262	-	S2	S23	-	PM12	S23	-	-
SGA1	-	MSG/LA	-	-	-	MS4B	AC/SG	S4VA	MS4B	-	-
SN947D	-	-	EL70	-	-	-	-	EL70	-	-	-
SN954	-	-	EY70	-	-	-	-	EY70	-	-	5641
SN956B	-	-	DY70	-	-	-	-	DY70	-	-	-
SP2	-	210SPT	-	-	SPT2	Z21	SP210	-	Z21	HP210nc	-
SP2D	-	210SPT	-	-	SPT2	Z21	SP210	-	Z21	HP210nc	-
SP4	8A1	MS/Pen	-	A50A	SPT4A	MSP4	AC/SG AC/S2Pen	-	MSP4	HP4101	-
SP4B	-	MS/PenB	-	A50B	-	-	-	-	-	-	-
SP6	6AM6 8D3 6064	-	EF91 PM07	-	6AM6	Z77 QZ77	6F12	EF91 M8083	Z77 QA2403	HP6	6AM6 6064
SP13	8D2	13SPA	CF1	-	-	-	-	SP13A	-	-	-
SP13A	8D2	13SPA	CF7	-	-	-	-	-	-	SP13	-
SP13B	-	-	CF1	C50B	-	-	-	SP13C	-	-	-
SP13C	8D2	13SPA	CF1	C50B	-	-	-	-	-	SP13B	-
SP13s	-	-	-	-	-	-	-	SP13	-	-	-
SP210	-	210SPT	-	-	SPT2	Z21	-	-	Z21	HP210nc	-
SP220	-	230XP	-	-	-	P2	P220A	PM202	P2	-	-
SPT2	-	210SPT	-	-	-	Z21	SP210	SP2	Z21	HP210nc	-
SPT4A	8A1	MS/Pen	-	A50A	-	MSP4	AC/S2Pen	SP4	MSP4	HP4101	-
SS210	5B1	215SG 220SG	B262	K40B	-	S23	S215	PM12 PM12A	S23	-	-
SU25	-	-	-	-	-	-	-	-	U24	-	-
SU61	R12	-	EY51	-	-	U151	-	EY51	U43	-	6X2
SU2130	-	-	-	-	-	-	-	HVR1	U16	-	-
SU2150	-	-	-	-	-	-	-	-	U21	-	-
SU2150A	-	-	-	-	-	-	-	HVR2A	-	-	-
T4D	-	-	-	-	-	-	D1	-	-	-	-



COMMERCIAL EQUIVALENTS

TD6-U149

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
TD6	-	-	-	-	-	-	-	EA50	-	-	-
TDD2	-	210DDT	-	K23B	H2D	HD24	HL21/DD	-	HD24	-	-
TDD2A	-	210DDT	-	K23B	H2D	HD24	HL21/DD	-	HD24	-	-
TDD4	11A1 11A2	DDT	-	A23A	H4D	MHD4	AC/HLDD	-	MHD4	DDT4	-
TDD13	-	-	CBC1	-	-	-	-	-	-	DDT13s	-
TDD13C	11D3	13DHA	-	C23B	HAD	-	HL/DD- 1320	-	-	DDT13	-
TH2	-	220TH	-	-	-	X24	-	-	X24	-	-
TH4	20A1	41STH	-	A36A A36B A36C	-	X41	AC/TH1	-	X41	-	-
TH4A	20A1	-	-	A36C C36A	-	-	AC/TH1 AC/TH1	TH4B	-	-	-
TH4B	-	4THA	-	-	-	-	TH2321	-	-	-	-
TH21C	-	202STH	-	-	-	-	TH2320	-	-	-	-
TH22C	-	-	-	-	-	-	TH2321	-	-	TH29	-
TH29	-	-	-	-	-	-	-	TH30C	-	-	-
TH30	-	-	-	-	-	-	-	TH30C	-	-	-
TH30C	-	302THA	-	C36B C36C	-	-	TH2321	-	-	-	-
TH2320	-	-	-	-	-	-	-	TH22C	-	TH29	-
TH2321	-	302THA 202STH	-	C36A	-	-	-	TH30C TH21C	-	-	-
TP4	-	-	-	-	-	-	AC/TP	-	-	-	-
TSP4	-	-	-	-	-	-	AC/SP3	-	-	-	-
TT4-A	-	41MP	-	-	L4	ML4	AC/P	-	ML4	LL4	-
TV4	-	-	-	A39A	-	-	-	TV4A	-	ME4s	-
TV4A	-	-	-	A39A	-	-	-	TV4	-	ME4s	-
TV6	-	-	-	C39A	-	-	-	EM1	-	ME6s	-
TX4	-	-	-	-	-	-	AC/TH1	-	-	-	-
TX21	-	-	-	-	-	-	TH2321	TH21C	-	-	-
U10	-	506BU	1821	-	-	-	UU3 UU5	DW2	-	RV120/350	-
U12	-	-	-	-	-	-	UU120/350	DW4/350	-	RV120/350	-
U12, 14	-	-	-	-	-	-	-	DW4/500	-	RV120/500	-
U14	-	-	1561	-	R4A	-	UU120/500	DW4/500	-	RV120/500	-
U16	-	SU2130	-	-	-	-	-	HVR1	-	-	-
U18, 20	-	4/100BU	-	-	-	-	-	FW4/500	-	RV200/600	-
U21	-	SU2150	-	-	-	-	-	FW4/800	-	-	-
U24	-	SU25	-	-	-	-	-	-	-	-	-
U30	-	-	-	-	-	-	-	-	-	PV25	-
U31	-	25Z4	-	-	-	-	-	PY31	-	-	25Y4 25Z4
U33	VLS61	-	-	-	-	-	-	-	-	-	-
U37	R16	-	-	-	-	-	-	-	-	-	1T2
U41	-	-	DY30	-	-	-	-	DY30	-	-	1B3 8016
U43	R12	SU61	-	-	-	U151	-	EY51	-	-	6X2
U50	5Y3	-	-	-	-	-	-	-	U50	5Y3	5A24 5Y3 5U4 5T4 5931
U52	5U4	-	-	-	-	-	-	-	-	-	6W5 6X5 6ZY5
U70	6X5	-	EZ35	-	-	U147	-	EZ35	-	-	5852 35Z4 35Z4
U74	35Z4	-	-	-	-	-	-	-	-	-	6X4 6063
U76	35Z4	-	-	-	-	-	-	-	-	-	6202 6203
U78	6X4 6063	-	EZ90 V2M70	-	-	QU78	-	EZ90	QA2407	-	7Z4 7Y4
U82	7Z4	-	-	-	-	U149	-	-	-	-	-
U142	-	3115U	UY41	-	-	-	-	UY41	-	-	-
U143	-	-	-	-	-	-	-	AZ31	-	-	-
U145	-	-	UY41	-	-	-	U404	UY41	-	-	-
U147	6X5	-	-	-	6X5	U70	-	EZ35	U70	-	6W5 6X5 6ZY5
U149	7Y4	7Y4	-	-	7Y4	-	-	-	U82	-	5852 7Y4 7Z4



U150-VHT4

COMMERCIAL EQUIVALENTS

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
U150	-	66KU	EZ40 V61	-	-	-	UU9	EZ40	-	-	-
U151	R12	SU61	EY51	-	-	-	-	EY51	U43	-	6X2
U152	-	19X3 19BD	PY80	-	-	U309	-	PY80	U309	-	19X3 19U3
U153	-	17Z3	PY81	-	-	-	-	PY81	-	-	17Z3
U154	-	19SU 19Y3	PY82	-	-	-	-	PY82	U319	-	19Y3
U201	-	-	-	-	-	-	-	CY31	-	-	-
U281	-	OM1	-	-	-	-	-	-	-	-	-
U309	-	19X3 19BD	PY80	-	-	U152	-	PY80	-	-	19X3 19U3
U319	-	19SU 19Y3	PY82	-	-	U154	-	PY82	-	-	19Y3
U404	-	-	-	-	-	U145	-	UY41	U145	-	-
U4020	1D5	40SUA	CY1C	C10B	RZ	-	-	UR1C	-	V30	-
UAA91	-	-	-	-	-	-	-	-	-	-	12AL5
UAF42	-	-	-	-	-	WD142	-	-	-	-	-
UBC41	-	-	-	-	-	DH142	10LD3	-	-	-	-
UBF80	-	171DDP	-	-	-	-	-	-	-	-	-
UCH41	-	-	CF141	-	-	-	-	-	-	-	-
UCH42	-	141TH	-	-	-	X142	-	-	-	-	-
UF41	-	-	HF121	-	-	W142 W145	10F9	-	-	-	-
UF42	-	-	-	-	-	Z142	10F3	-	Z142	-	-
UL41	-	451PT	-	-	-	N142	10P14	UL46	N142	-	-
UL46	-	451PT	-	-	-	N142	10P14	UL41	N142	-	-
UR1	-	-	CY1	-	-	-	-	-	-	V20s	-
UR1C	1D5	40SUA	CY1C	C10B	RZ	-	U4020	-	-	V20	-
UR2	-	-	-	-	-	-	-	-	-	PV29s	-
UR3	-	-	CY3	-	-	-	-	-	-	PV30s	-
UR3C	-	-	-	-	-	-	-	-	-	PV30	-
UU3	R2	506BU	-	-	-	U10	-	IW4/350 DW2	U10	-	-
UU4	R2	-	1867 1868 1881	-	-	-	-	IW4/350	-	APV4	-
UU5	R3	43IU	1861 AHC	-	-	MU14	-	IW4/500	MU14	-	-
UU7	-	-	-	-	-	-	UU8	-	-	-	-
UU9	-	66KU	EZ40 V61	-	-	U150	-	EZ40	-	-	-
UU- 60/250	R1	-	-	-	-	-	-	IW4/350	-	APV4	-
UU- 120/350	R2	-	-	-	-	-	-	-	-	-	-
UU- 120/500	-	-	1561	-	R4A	U14	-	DW4/500	U14	RV120/500	-
UY41	-	311SU	-	-	-	U142	-	-	-	-	-
V2M70	6X4 6063	-	EZ90	-	-	U78 QU78	-	EZ90	U78 QA2407	-	6X4 6063 6202 6203
V20	-	-	CY1C	C10B	RZ	-	-	UR1C	-	-	-
V20s	-	-	CY1	-	-	-	-	UR1 CY1	-	-	-
V21/7030	-	-	1877	-	-	-	-	HVR2	-	-	-
V30	1D5	40SUA	CY1C	-	-	-	U4020	-	-	-	-
V41	-	-	AZ41	-	-	-	-	-	-	-	-
V51	-	-	GZ40	-	-	-	-	-	-	-	-
V61	-	66KU	EZ40	-	-	U150	UU9	EZ40	-	-	-
V503	-	-	-	-	-	DA30 PX25A	PA40	DO30	-	DA30 PX25A	-
V914	-	DDL4	-	A20B	SD	D41	-	2D4A	-	DD4	-
VFT6	6U5G	63ME	EM35	-	-	-	6M1	EM35	-	6G5G	-
VHT2	-	-	-	-	-	-	-	FC2	-	-	-
VHT2A	-	210PG	-	K80A	-	X22	-	FC2 FC2A	X22	-	-
VHT4	15A2	41MPG	AK1	A80A	-	MX40 X42	-	FC4	MX40 X42	MH4105	-



COMMERCIAL EQUIVALENTS

VHTA-W81

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
VHTA	15D1	13PGA	-	C80B	-	-	-	FC13C	-	VO13	-
VHTS	-	-	-	-	-	-	-	-	X30	-	-
VLS61	-	-	-	-	-	U33	-	-	X32	-	-
VME4	-	-	-	-	-	-	AC/ME	-	U33	-	-
VMP4	9A1	-	-	-	-	-	-	VP4	-	-	-
VMP4G	9A1	MVS/Pen	AF2	A50M A50N	VPT4	-	AC/VP1	VP4 VP4A VP4A	-	-	-
VMS4B	VSGA1	MV/SG	-	-	-	-	AC/SG AC/SGVM	MM4V	-	AS4125	-
VO2	-	-	-	-	-	-	-	FC2A	-	-	-
VO4	-	-	AK1	A80A	-	-	-	FC4	-	-	-
VO6s	-	-	EK2	-	-	-	-	EK2	-	-	-
VO13	15D1	13PGA	-	C80B	VHTA	-	TH2320	FC13C	-	-	-
VO13s	-	-	-	-	-	-	-	FC13	-	-	-
VP2	-	210VPT	-	K50M	VPT2	W21 VP21	VP210	VP2B VP2D	W21 VP21	HP211c	-
VP2B	-	210VPT	-	K50N	VPT2	VP21	VP210	VP2 VP2D	VP21	HP211c	-
VP2D	-	210VPT	-	K50N	VPT2	VP21	VP210	VP2 VP2B	VP21	HP211c	-
VP4	9A1	MVS/Pen	AF2	A50M A50N	VPT4	VMP4G	AC/VP1	VP4A	VMP4G	HP4106c	-
VP4A	9A1	MVS/Pen	AF2	A50M A50N A50P	VPT4	VMP4G	AC/VP1	VP4	VMP4G	HP4115	-
VP4B	-	MVS/Pen	-	-	-	W42	AC/VP2	-	W42	-	-
VP4C	-	-	-	-	-	-	AC/VP1	-	-	-	-
VP6	9D6 6065	-	EF92	-	-	W77 QW77	-	EF92	W77 QA2400	-	6CQ6
VP12D	-	-	-	-	-	-	-	-	-	-	12C8
VP13	-	-	-	-	VPTA	-	VP1320	-	-	-	-
VP13A	-	-	CF2	-	-	-	-	-	-	HP13s	-
VP13B	-	-	-	C50N	-	-	VP1322	VP13C	-	-	-
VP13C	9D2	13VPA	-	C50N	-	-	VP1322	-	-	VP13B	-
VP13K	9D2	13VPA	-	-	-	-	-	-	-	-	-
VP21	-	210VPT	-	K50M	VPT2	-	VP210	VP2	-	HP211c	-
VP210	-	210VPT	-	K50M	VPT2	VP21	-	VP2	VP21	HP211c	-
VP215	-	-	-	-	-	-	-	-	-	HP211c	-
VP1320	-	-	-	-	VPTA	-	-	-	-	VP13	-
VP1322	9D2	13VPA	-	C50N	-	-	-	VP13C	-	VP13B	-
VPT2	-	210VPT	-	K50M	-	VP21	VP210	VP2	VP21	-	-
VPT4	9A1	MVS/Pen	AF2	A50M A50N	-	VMP4G	AC/VP1	VP4 VP4A VP4	VMP4G	HP4106c	-
VPT4B	-	-	-	-	-	-	-	-	-	HP4115	-
VPTA	-	-	-	-	-	-	-	-	-	VP13	-
VPTS	-	-	-	-	-	-	-	-	W30 W31	-	-
VR75	-	-	-	-	-	-	-	-	-	-	OA3
VR90	-	-	-	-	-	-	-	-	-	-	OB3
VR105	-	-	-	-	-	-	-	-	-	-	OC3
VR150	-	-	-	-	-	-	-	-	-	-	OD3
VS2	-	-	-	-	-	-	-	-	-	-	-
VS24K	-	-	-	-	-	-	-	PM12M	-	SE211C	-
VSGA1	-	MV/SG	-	-	-	VMS4B	AC/SG AC/SGVM	PM12M PM12M	VMS4B	SE211C	-
VX2	-	-	-	-	-	-	-	VP2B	-	-	-
W17	1T4	1T4	DF91	1T4	-	W17	1F3	DF91	W17	-	1T4
W21	-	210VPA	-	-	-	-	VP210	VP2	-	-	-
W30	-	-	-	-	VPTS VPTS	-	-	-	-	-	-
W31	-	-	-	-	-	-	-	-	-	-	-
W42	-	MVS/PenB	-	A50P	-	-	AC/VP2	VP4B	-	VP4	-
W61	6K7 6U7	-	-	-	-	W63 KTW63	-	-	W63 KTW63	6K7	6K7 6U7 5732
W63	6K7 6U7	-	-	-	-	KTW63 W61	-	-	KTW63 W61	6K7	6K7 6U7 5732
W76	12K7	-	-	-	-	-	-	-	-	-	12K7
W77	9D6 6065	VP6	EF92	-	-	QW77	-	EF92	QA2400	-	6CQ6 6065
W81	7H7	7H7	EF22	-	7H7	W143 W148	-	EF22	-	-	7H7 7A7



TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
W142	-	-	UF41 HF121	-	-	-	10F9	UF41	-	-	-
W143	7H7	7H7	EF22	-	7H7	W148	-	EF22	W81	-	7A7 7A7
W145	-	-	-	-	-	-	10F9	-	-	-	-
W147	-	OM6 OM7	EF39	-	-	-	-	EF39	-	-	-
W148	7H7	7H7	EF22	-	7H7	W143	-	EF22	W81	-	7H7 7A7 7B7
W149	7B7	7B7	-	-	-	-	-	-	-	-	-
W150	-	62VP	EF41 HF61	-	-	-	6F15 6F16	EF41	-	-	-
W727	6BA6 5749	-	EF93 PM04	-	-	-	-	EF93	-	-	6BA6 5749
WD142	-	-	UAF42	-	-	-	-	UAF42	-	-	-
WD150	-	-	EAF42	-	-	-	-	EAF42	-	-	-
X14	1A7	1A7	DK32	1A7	1A7	-	-	DK32	-	-	1A7
X17	1R5	1R5	DK91	1R5	1R5	-	-	DK91	-	-	1R5
X18	1AC6	1AC6	DK92	-	-	-	1C1 1C2	DK92	-	-	1AC6
X21	-	-	-	-	-	-	-	FC2A	-	-	-
X22	-	210PG	-	K80A	VHT2A	-	-	FC2	-	-	-
X23	-	220TH	-	-	-	-	-	TH2	-	-	-
X24	-	220TH	-	-	-	-	-	TH2	-	-	-
X30	-	-	-	-	VHTS	-	-	-	-	-	-
X32	-	-	-	-	VHTS	-	-	-	-	-	-
X41	20A1	41STH	-	A36A A36B A80A	-	-	AC/TH1	TH4	-	-	-
X42	15A2	41MPG	AK1	-	VHT4	MX40	-	FC4	MX40	MH4105	-
X61M	6K8*	OM10	ECH3G ECH33 ECH35*	-	6K8*	X62 X65* X66 X147*	6C31	ECH33 ECH35*	X62 X65* X66	6K8* 6TH8 6E8*	6K8* 6E8* 6J8* 6P8
X62	6K8	OM10	ECH3G ECH33 ECH35	-	6K8	X61 X65 X66 X147	6C31	ECH33 ECH35	X61 X65 X66	6K8 6TH8 6E8	6K8 6E8 6J8 6P8
X63	6A8	6A8	-	-	6A8	-	-	-	X63	-	6A8
X64	6L7	6L7	-	-	-	-	-	-	-	-	6L7
X65	6K8*	OM10	ECH3G ECH33 ECH35*	-	6K8*	X61M* X62 X66 X147*	6C31	ECH33 ECH35*	X61M* X62 X66	6K8* 6TH8 6E8*	6K8* 6E8* 6J8* 6P8
X66	6K8	OM10	ECH3G ECH33 ECH35	-	6K8	X61M X62 X65 X147	6C31	ECH33 ECH35	X61M X62 X65	6K8 6TH8 6E8	6K8 6E8 6J8 6P8
X71/M	12K8	-	-	-	-	-	-	-	-	-	12K8
X73/M	-	-	-	-	-	-	-	-	-	-	6D8
X76/M	12K8	-	-	-	-	-	-	-	-	12K8	12K8
X77	6BE6 5750	6BE6	EK90 HM04	-	-	-	-	EK90	X727	-	6BE6 5750
X79	-	-	-	-	-	-	-	-	-	-	6AE8
X81/M	7S7	7S7	-	-	7S7	X148	-	-	-	-	7S7 7J7
X142	-	141TH	UCH42	-	-	-	-	UCH42	-	-	-
X143	-	-	ECH21 ECH71	-	-	-	-	ECH21	-	-	-
X145	-	-	-	-	-	-	10C1	-	-	-	-
X147	6K8*	OM10	ECH3G ECH33 ECH35*	-	6K8*	X61M* X62 X65* X66	6C31	ECH33 ECH35*	X61M* X62 X65* X66 X81/M	6K8* 6TH8 6E8*	6K8* 6E8* 6J8* 6P8 7S7 7J7
X148	7S7	7S7	-	-	7S7	-	-	-	-	-	-
X150	-	62TH	ECH42	-	-	-	6C9 6C10	ECH42	-	-	7J7
X727	6BE6 5750	6BE6	EK90 HM04	-	-	X77	-	EK90	-	-	6BE6 5750
XXB	-	-	-	-	-	-	-	-	-	-	3C6
XXD	-	-	-	-	-	-	-	-	-	-	14AF7
XXFM	-	-	-	-	-	-	-	-	-	-	14N7 7X7

\* Series or parallel circuits.



COMMERCIAL EQUIVALENTS

Y61-ZD152

TYPE	BRIMAR	COSSOR	EUPN.	EV. RDY.	FERRANTI	MARCONI or EMITRON	MAZDA	MULLARD	OSRAM	TUNGSRAM	U.S.A.
Y61	6G5G 6U5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y62 Y63 Y64	6G5G 6U5G	-
Y62	6G5G 6U5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y61 Y63 Y64	6G5G 6U5G	-
Y63	6G5G 6U5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y61 Y62 Y64	6G5G 6U5G	-
Y64	6G5G 6U5G	63ME	EM35	-	VFT6	-	6M1	EM35	Y61 Y62 Y63	6G5G 6U5G	-
Z14	1N5	1N5	DF33	1N5	1N5	-	-	DF33	-	-	1N5
Z21	-	210SPT	-	-	SPT2	-	SP210	SP2	Z22	-	-
Z22	-	210SPT	-	-	SPT2	-	SP210	SP2	Z21	-	-
Z63	6J7	6J7	-	-	6J7	KTZ63	-	-	KTZ63	6J7	6J7 7000
Z77	6AM6 8D3 6064	SP6	EF91 PM07	-	6AM6	QZ77	6F12	EF91 M8083	QA2403	HP6	6AM6 6064
Z90	-	63SPT	-	-	-	-	-	EF50	-	-	EF50
Z142	-	-	UF42	-	-	-	10F3	UF42	-	-	-
Z145	-	-	-	-	-	-	10F1	-	-	-	-
Z150	-	-	EF42 HF62	-	-	-	6F13	EF42	-	-	-
Z152	6BX6 6BW7	6BX6 64SPT	EF80	-	-	-	-	EF80	Z719	-	6BX6 6BW7
Z719	6BX6 6BW7	6BX6 64SPT	EF80	-	-	Z152	-	EF80	-	-	6BX6 6BW7
Z729	-	-	EF86	-	-	-	-	EF86	-	-	6267
ZA2	-	-	E1F	-	-	-	-	-	-	-	954
ZD	-	-	-	-	-	-	-	-	-	-	-
ZD17	1S5	1S5	DAF91	1S5	1S5	-	DD620 1FD9	DAF91	-	DD6	1S5
ZD152	-	-	EBF80	-	-	-	-	EBF80	-	-	6N8

SUPPLEMENTARY VALVES

M8079	6AL5 6058	DD6	EAA91 D2M9	-	DD6	D77 D152 QD77	6D2	EB91	D77 QA2404	DD6G	6AL5 5726 6058
M8081	6J6	6J6	ECC91	-	-	-	-	ECC91	-	-	6J6 6101 6AM5
M8082	6AM5 7D9	6AM5	EL91	-	-	N77 N144 QN77 QZ77 Z77	-	EL91	N77	-	-
M8083	6AM6 8D3 6064	SP6	EF91 PM07	-	6AM6	-	6F12	EF91	QA2403 Z77	HP6	6AM6 6064
M8100	-	-	EF95 PM05	-	DP61	-	-	EF95	-	-	6AK5 5591
QB65	6SN7 5692 6180	6SN7	-	-	-	B65	-	ECC32 ECC33	QA2408 B65	6SN7	6SN7 5692 6180
QB309	12AT7 6060	-	ECC81	-	-	B152 B309	-	ECC81	B309 QA2406	-	12AT7 6060 6201
QD77	6AL5 6058	DD6	EAA91 D2M9	-	DD6	D152 D77	6D2	EB91 M8079	D77 QA2404	DD6G	6AL5 5726 6058
QL77	6C4	-	EC90	-	-	L77	-	EC90	L77 QA2401 N77	-	6C4 6125 6AM5
QN77	6AM5 7D9	6AM5	EL91	-	-	N77 N144	-	EL91 M8082	-	-	-
QU78	6X4 6063	-	EZ90 V2M70	-	-	-	-	EZ90	U78 QA2407	-	6X4 6063 6202 6203
QW77	9D6 6065	VP6	EF92	-	-	W77	-	EF92	W77 QA2400	-	6CQ6 6065
QZ77	6AM6 8D3 6064	SP6	EF91 PM07	-	6AM6	Z77	6F12	EF91 M8083	QA2403 Z77	HP6	6AM6 6064



# C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
1	DC51	88	DV32	182	E1488	276	11E2
2	DAG1	89	E1380	185	PM202	277	19G3
3	E1228	90	E1368	186	E1342	278	B65
4	E1229	92	E1232	187	U19	279	NC16
5	RG4-1250	93	V625	188	7475	281	X61M
6	Det20	94	DS103	189	BS4	283	6AL5
7	E1209	95	R3/10	190	DL510	284	STV30/20
8	E1248	96	R3/16	191	E1494	285	VA35
9	AL60	97	R2/10	192	E1481	286	QS95/10
12	AFH202	98	R2/38	199	NT99	287	STV70/20
13	BT9B	99	E1373	200	MZ2-200	}	ACT23
14	XN	100	V2D33B	201	V630		E1527
15	E1266	105	E1371	202	YF	E1481	
16	S25A	108	BM313	207	ACP4	296	DDR2
18	DET19	109	9PK5	208	1487	298	FA15
19	EHT1	110	VS68	209	MX57	302	ECH22
20	V1906	114	E1265	211	V2030B	303	EF22
21	VP41	115	E1415	212	LS594	304	EL22
22	BT45	116	KR6/1	214	E1531	305	EF51
23	E1287	117	E1417	215	E1497	306	MX52
24	HL41	118	SP61	216	VR150	307	VCR530
25	4242A	119	XJ	217	KRN3	309	QV04-7
26	813	120	MF	218	KRN3	310	NHP1
27	4357A	121	19H1	219	E1046	311	5L/444
28	ACT9	122	E1336	220	631/P1	312	ESU74
29	E1235	123	E1330	221	E1516	315	TY1-50
30	4270A	124	807	222	E1489	319	E1453
31	U20	125	2403	223	KRN2A	324	GU8
32	866	126	E1362	224	KRN2A	326	15B
33	4077A	127	S30A	225	ACT17	327	EF52
34	MR10	128	SU750	228	DV40B	328	L9
38	E1198	129	KRN2A	229	E1336	329	6F33
39	S22AF	130	KRN3	230	DV55	335	VCR522B
40	E1255	131	EF92	232	MF	336	VCR522C
41	E1267	132	V885	233	BS5	337	27M1
42	E1256	133	6C4	234	DV56	339	24B2
44	E1155	135	EY91	235	U23	343	V894
45	S130P	136	EL91	236	E1465	344	E1323
46	8011	137	EAC91	237	KR6/2	345	12E1
49	3B/501A	138	EF91	238	KR6/3	346	EZ22
51	Y65	139	6L34	240	ACT24	347	EBC21
52	E1231	140	6AL5	242	GS18	349	V2030E
53	S26A	141	U4B	243	4045A	353	M500
54	VU133A	142	U2	244	4046A	354	ME1005
55	E1190	143	U3	245	4328D	358	EF37A
56	E1325	144	U4	248	GS16	359	NE17
57	E1271	145	U5	249	4019A	360	NE18
58	E1273	147	U7	250	CMG25RS	367	N21B
63	E1323	148	U8	251	MX57	368	9-3
64	E1342	149	U7	252	ACR22	369	1B35
65	PEN25	150	PK150	254	9LO1A	370	2J42
66	EC54	152	RG3-1250	255	VCR516	371	19G6
69	E1326	153	E1411	256	NS2	372	3C45
71	Osglim	154	E1419	257	ACT22	374	S3A
72	V1120	155	E1190	258	E1273	375	EA50
73	11E3	158	KR3	259	E1495	377	V1135C
74	ESU74	159	AL1	260	S061	378	GZ32
75	4313C	160	E1342	261	R10	379	ACT19
76	E1359	161	VS26	262	9MD6	380	EF54
77	K Tube	171	W21	264	AP1188	382	T24/40JA
78	E1474	172	E1468	265	19E2	383	T24/40JB
79	E1379	173	EF55	266	E1336	384	DET5
80	VF01	174	E1459	267	E1336	385	DL71
81	VF08	175	XSG1.5	268	E1330	386	DF70
82	S27A	176	XP1.5	269	VCR97	387	DL72
84	3B/102/B	177	813	271	V986	389	VCRX210
85	V2023	178	E1458	272	KR6/4	391	LS650
86	V1507	180	KR4	273	5861	394	EM34
87	KRN2	181	ECC32	275	V1042	395	QS150/45



## C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
397	DET24	494	B12	566	RG-2	638	838
398	715B	495	5802	567	35Z5	639	843
400	3DE7	496	CG14	568	35Z5GT	640	860
403	V2053	498	NE17	569	ECC35	641	861
404	FVD7	500	6T7G	570	EQ/191E	642	872
405	55CG	501	EBF32	571	50L6GT	643	874
407	VCRX221	502	LD210	572	6X5G	644	875
408	A1714	503	5W4DT	573	6X5	645	876
409	A1820	504	6U5/6G5	574	EZ35	647	884
410	K3A	505	MT16	575	5U4G	648	885
411	GM5	506	GL8023	576	1B26	649	956
412	A800	508	1B49	577	1B36	650	958
413	G150/2D	509	6V6G	578	6A8G	651	991
415	TT15	510	6V6	579	6A8	652	1603
416	6F17	511	6V6GT	580	6A7GT	653	1611
417	EC91	512	6W7G	581	6C5G	654	1612
418	MX2	513	4J53	582	6C5	655	1613
419	DET18	514	2J36	583	6C5GT	656	1616
420	VCRX277	515	6Y6G	584	GS46	657	1620
421	CAT20c	516	3GP1	585	6C6	658	1622
422	QS105/45	517	OZ4A	586	EL37	659	1625
423	25SN7	518	AC/VP1	587	6Q7G	660	6AC7
424	QQV06/40	519	PEN4DD	588	6Q7	661	6AB7
425	CG1-C	520	VP2B	589	6Q7GT	662	8012
426	EY51	521	R4410	590	6S17G	663	8025
428	5B/251M	522	7B7	591	6S17	664	9002
429	MF31-55	523	12Y4	592	6S17GT	665	9003
430	29C1	524	TT12	593	GZ32	666	9004
431	85A1	525	12A6	594	6SH7	667	9005
432	ME1400	526	12A6GT	595	6SH7GT	668	35T
433	B1C1E	527	DA60	596	45	669	279A
434	QS75/60	528	VA16	597	879	670	645
435	GT11	529	12AH7GT	598	715C	676	7206A
436	ACT25	530	GT1E	599	1851	677	701A
437	KT67	531	12C8	600	5CP1	678	702A
438	G120/1B	532	GU11	601	5BP1	679	700A
439	22/11BXA	533	CAT17c	602	3AP1	683	316A
440	1601ABC	534	12J5	603	10	684	274B
441	V1052	535	12J5GT	604	30	686	VR105
443	CK505AX	536	4120/AA	605	37	687	GL446B
444	MZ1-75	537	12SA7	603	41	688	2C43
445	5J/180E	538	12SA7GT	609	42	690	RK48A
446	3Q/260E	539	1B23	610	45	691	E5357
447	4078GA	540	12SC7	611	56	692	OZ4
449	85A2	541	8016	612	57	693	HF300
450	EL38	542	5J23	613	58	694	12SG7
452	6AT6	543	12SK7	614	75	695	700B
453	6BE6	544	12SK7GT	615	76	696	700C
454	6BA6	545	AC/SP3	616	77	697	12S17
455	12AT7	546	12SQ7	617	80	698	12S17GT
460	BS48	547	12SQ7GT	618	83	699	700d
461	BS92	548	LP2	619	6Z4	700	12SR7
462	BS84	549	25A6	620	211	701	ESA892
463	BS82	550	25A6GT	621	801	702	830B
465	EF72	551	25L6G	622	802	703	12K8
466	EF73	552	25L6	623	803	704	RK20A
467	EF70	553	25L6GT	624	804	705	1DSGP
468	EC70	554	D63	625	805	706	6U7G
469	EA76	555	25Z5	626	808	707	HK54
471	EL70	556	QP25	627	810	708	161
473	EY70	557	D42	628	811	709	RX235
474	5643	558	25Z6	629	814	710	368A
475	EF71	559	25Z6GT	630	826	711	32
487	CRT/51	560	TSP4	631	828	712	38
489	BT75	561	35L6	632	829	713	1B27
490	19H5	562	35L6GT	634	832	714	C6A
491	12AU7	563	DA30	635	833	716	8013A
492	12AX7	564	35Z3	636	836	717	5R4GY
493	6X4	565	35Z3GT	637	837	718	5FP7



# C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
719	2J21A	792	2C22	872	6Z7G	948	32L7
720	723A	793	2C33	873	6ZY5G	949	33
722	725A	794	2D2	874	7	961	NC13
723	1619	795	2D4A	875	2C21	964	E4205-B7
724	816	796	2D13C	876	7A6	966	E4504-M16
725	1B24	797	2D21	877	7A7	977	TwinCV55
726	35Z3	798	2E22	878	7A8	979	DL510
727	1N21	800	2J22	879	7B4	987	NC13A
728	1P5GT	801	2J54	880	7B5	995	6AJ5
729	5V4G	802	2C26	881	7B5LT	996	1637
730	6A3	803	2V3	882	DH81	998	2000T
731	6F6GT	804	2V3G	883	7B8LM	999	3C22
732	6W4	805	50Y6GT	884	7BP7	1000	4D1
733	REL8D	807	3A4	885	7C5	1018	2155G
734	228A	808	3A5	886	7C5LT	1019	PM2
735	845	809	3A/105B	887	7C6	1020	220P
736	905	811	1291	888	7D7	1021	210LF
737	906	812	3B22	889	7D8	1022	220PA
738	953	814	3BP1	890	7E5	1023	230XP
739	3AP1/1A	815	1299	891	7E6	1025	DET25
740	5MP1	816	3DP1	892	7E7	1027	210LF
741	5LP1	817	3EP1	893	7F7	1028	220VSG
742	FG67	818	3Q4	894	1232	1029	ESU150
743	REL8D	819	3Q5	895	7H7	1030	4060A
744	GET4 $\frac{1}{2}$	820	3S4	896	7K7	1031	ESG250
745	HK24	821	4A1	897	7J7	1032	220B
746	648P1	822	EL3C	898	7N7	1034	DET3
747	7AC7	823	4C29	899	7Q7	1035	QP21
749	IN23A	824	HK257	900	7R7	1037	MH4
750	O1A	825	4SHA	901	7Y4	1038	MHL4
751	HY75	826	4THA	902	7W7	1039	MU14
752	OA4G	828	4TPB	904	892R	1040	PX25
753	1A3	829	4TPB	905	9HP7	1041	PM12M
754	1A4P	830	4TSP	906	1602	1042	210LF
755	1A5G	832	5AP1	908	12A5	1043	210PG
756	1A5GT	833	89	909	12A7	1044	210DDT
757	1A6	834	5B/300B	910	12A8GT	1045	X56
758	1B4P	836	5BP4	911	12B8GT	1046	PT25H
759	1B5	837	12C8SPEC	913	12DP7	1047	TZ05-20
760	1B7GT	838	5CP7	914	12DP7	1049	210SPT
761	1B22	839	5GP1	915	12FP7	1050	HL2K
762	1C21	840	5H4	916	12H6	1051	Pen220A
764	1D5	841	5U4GT	917	12J7	1052	EL32
765	1D7G	842	5W4G	918	12K7	1053	EF39
766	1E5GT	843	6AB5	919	12SF5	1054	EB34
767	1F4	844	6AC5G	920	12SF5GT	1055	EBC33
768	1F5G	845	6AC5GT	921	12SF7	1056	EF36
769	1F6	846	6AC7	922	12SH7	1057	EK32
770	1F7GV	847	6AF6G	924	12SL7	1058	EP60
771	1G5G	848	6AG5	925	12SN7	1059	955
772	1G6G	849	6AJ7	927	12Z3	1060	807
773	1G6GT	850	6AK5	929	13SPA	1061	RK34
774	1H4G	851	6B4G	930	14F7	1062	TY1-50
775	1LA6	852	6C4	931	15	1064	U12-14
776	1LB4	854	6C7	932	2C40	1065	SP61
777	1LC5	855	6C21	933	4C30	1066	P61
778	1LC6	856	6G8G	934	4B30	1067	6J5
779	1LD5	857	6H7	936	24A	1068	STV280/40
780	1LH4	858	6J6	937	25A7	1069	STV280/80
781	1LN5	859	6K8G	938	25AC5	1070	7475
782	1R5	860	6K5G	939	25B6	1071	5U4
783	1S4	861	6K5GT	940	25B8	1072	GU5
784	1S5	862	6L5G	941	HK24	1073	H63
785	1T4	864	6P7G	942	25Y5	1074	6J7
786	1T5	865	6SD7GT	943	26	1075	KT66
787	2A7	866	6SJ7Y	944	27	1076	DA41
788	832A	867	6SR7	945	28D7	1077	EM31
789	3C24	870	6V7G	946	28D7GT	1078	D1
790	2AP1	871	6Z5	947	31	1079	KT8



C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
1080	4307A	1170	D41	1296	MU14	1409	SP2
1081	4052A	1171	AT4	1300	10D1	1410	TH2
1082	220TH	1174	KT42	1301	6H6	1411	TH41
1083	210VPT	1175	AP4	1302	D42	1412	VT4
1087	14L	1176	ZA1	1303	HL210	1413	UU6
1088	832	1178	DO30	1304	LP2	1414	VP41
1090	E1046	1179	ML4	1306	HL23DD	1415	4011A
1091	EF50	1180	244V	1307	L21	1418	10D1
1092	EA50	1181	KT41	1308	TDD2A	1419	11D3
1095	954	1182	H42	1309	4019B	1420	4078A
1096	5B/502A	1183	W42	1310	4020A	1422	3D/100A
1097	ECR60	1184	A373	1311	4022AR	1423	9D2
1098	E960T	1186	6F6	1312	220RC	1424	20A1
1099	X66	1187	D41	1313	220LF	1425	7D5
1100	KTW62	1188	N43	1314	DLS10	1426	EK2
1101	MHLD6	1189	AC6/Pen	1316	4012B	1427	EF9
1102	BL63	1190	AC/P4	1317	S625	1428	EB3
1103	EM35	1191	KTZ41	1318	VS24	1429	EL2
1104	PT15	1192	Z62	1319	PM12V	1430	A/CSP3
1105	ML6	1193	X65	1320	SP2	1431	ACT16
1106	9D2	1194	X41	1321	9D2	1432	CMG25
1107	15D2	1195	KTW63	1322	SP210	1433	EC31
1108	8D2	1196	AC5/PenDD	1323	VP2	1434	EM4
1109	4D1	1197	EC53	1324	SP4	1435	GU2
1110	S130	1198	AC/P4	1325	42MPT	1436	HL2/K
1111	U27	1200	202	1326	AC4/Pen	1437	KT44
1112	V1026	1201	4317	1327	Pen1340	1438	KT61
1113	U17	1202	304	1328	7D8	1439	MT9F
1114	E1024	1205	E1007	1329	PenA4	1440	MT9L
1116	6F32	1206	DO60	1330	TSP4	1441	MT12A
1117	41MTL	1207	ES450	1331	VP23	1442	MT14
1118	KT2	1208	PM256	1332	VP21	1443	U10
1119	DDL4	1219	MZ1-100	1333	220PT	1444	42SPT
1120	SU2150A	1220	4033A	1334	KT24	1445	4012A
1121	T41	1221	PZ1-75	1335	SP41	1446	4017B
1122	41MXP	1222	ACT6	1336	SP42	1447	4030C
1123	EF8	1223	DET5	1337	116/Pen	1448	4043C
1124	HP4101	1233	DET5	1338	220VPT	1449	4064B
1125	MS/PenB	1235	DET12	1340	KT44	1450	4227A
1126	4SH	1237	PM24D	1341	MSP4	1451	4274A
1127	Pen46	1238	PM24D	1342	QP25	1452	4300A
1128	GT1C	1240	PZ1-35	1343	KTZ73	1453	4378
1129	MS/Pen	1246	PM202	1344	TP22	1454	225DU
1130	HL23	1250	4279A	1345	TP25	1455	41IU
1133	V960	1252	4212E	1347	ECH35	1456	Pen383
1134	HVR2	1253	E1161	1355	ESU300	1457	VP133
1135	DET20	1255	E1189	1356	U22	1458	41MP
1136	EF54	1256	E1232	1359	ME41	1459	MU2
1137	EC52	1259	ESU450	1361	MZ05-20	1460	X41
1141	DPQ	1260	ESU208	1363	DET16	1461	U22
1143	GT1A	1261	RX3-120	1364	807	1462	A915
1144	BT19	1262	GU1	1365	4282B	1463	CBL31
1151	PM3	1263	RG1-125	1366	V248A	1464	EF39
1152	PM4DX	1264	U18	1367	V245	1466	P57
1153	PM254	1265	U15	1368	V226	1467	PY3-600
1154	PM4DX	1266	U15	1369	4061A	1468	SP4
1155	DEQ	1267	U4020	1370	PV1-35	1469	Z22
1156	DEQ	1268	5Y3	1371	PZ1-75	1470	3P/270B
1158	PM14	1279	MU2	1372	4069A	1471	4049A
1159	PM14	1280	X64	1374	807	1472	CMG25
1160	ML4	1281	KTW61	1382	ACR10	1473	CMG25
1161	ML4	1282	MSP4	1400	C1C	1474	CE20
1163	PD220A	1283	SP4	1401	CL33	1501	TT11
1164	AC/SG	1285	ECC31	1402	CY31	1502	KT32
1165	VMS4	1286	EL35	1403	DD41	1503	KT33C
1166	LP2	1287	KT32	1404	EF36	1504	V1901
1167	PM24A	1288	DET12	1405	E1199	1505	MH41
1168	ACO44	1290	U16	1407	PEN45	1506	ESP450
1169	VMP4G	1291	HVR2	1408	P41	1508	V1913



# C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
1510	QV04-7	1691	DDL4	1796	DW4/350	1867	6A6
1518	O9D	1692	AC/P	1797	4081A	1868	5T01A
1522	E4103-B4	1695	DH30	1798	2051	1869	12T01A
1526	3EGI	1696	D21	1799	350B	1870	6A7
1530	6LYI	1697	X41	1800	1A7G	1873	6AB7
1543	12MD6	1698	A819	1801	GS118	1876	1852
1553	ES450X	1699	SP41	1802	1A7GT	1878	6AD7G
1567	2C25	1700	SP41	1803	1C5G	1879	HP4101
1568	4062A	1701	XLO	1804	EAC91	1880	7MB1A
1569	R3	1702	XP	1805	1C5GT	1882	6AG7
1570	EK32	1711	6B7	1806	1D5GT	1883	4H/180E
1572	807	1715	EBC3	1807	2J31	1884	33A/158M
1573	4074B	1716	E1541	1808	2J32	1885	6B5
1574	SP41	1718	AC/TP	1809	2J33	1886	EC80
1575	U52	1719	U22	1810	2J34	1887	6B6G
1576	KT44	1720	XL1-5	1811	1D8GT	1889	TYS4-500
1577	KT44	1721	XP1-5	1812	1E7G	1891	6B7
1578	EF50	1722	A901	1813	2DP1	1892	2K28
1579	954	1727	Z22	1814	5LP1	1893	6B8G
1581	ECH35	1731	S130	1815	6Q5G	1894	6B8
1585	T41	1732	ML4	1816	6Y3G	1895	STV/70/60
1586	HL23	1733	4018AG	1817	1G4	1896	6C8G
1587	ECR35	1734	3Q/213E	1818	1H5G	1897	4J34
1588	ECR30	1749	205D	1819	6P5GT	1898	4J35
1596	O9J	1750	33A/100A	1820	1H5GT	1899	6L18
1600	CAT1	1751	34	1821	1N5G	1900	6D6
1601	CAR1	1752	35/51	1822	2J48	1901	6F11
1602	CAR4	1753	35A5	1823	1N5GT	1902	6D8G
1606	CAT2	1754	35TG	1824	1Q5G	1903	GL592
1610	MT4	1755	1626	1825	KT45	1904	CAA322
1611	MR4	1756	1629	1826	1Q5GT	1905	4-65A
1614	ES1500A	1757	9001	1827	M510	1906	6E5
1615	ESU1500	1758	1L4	1828	M512	1907	CS2-C
1618	ES250M	1759	2C26A	1829	1T5GT	1908	6F5G
1619	4212D	1760	2J26	1830	1B3	1909	6F5
1620	DET6	1761	3FP7	1831	2A3	1910	6F5GT
1621	ESW501	1762	6AK6	1832	OA2	1911	6F6
1623	RGL-250	1763	6J4	1833	OB2	1912	6F6
1625	RG3-250	1764	CE2	1834	2A5	1913	CS44X
1626	RG1-240A	1765	3C31	1835	3B28	1914	4J31
1628	GU8	1766	CX25	1836	4B26	1915	6F7
1629	RG3-1250	1768	707B	1837	2B7	1916	4J33
1630	ESP450	1769	2A6	1838	QQZ04-15	1917	6F8G
1637	LS5	1770	7A4	1839	6F13	1918	6F8
1642	DER	1771	39/44	1841	BS52	1919	6F14
1643	E132	1772	47	1842	2G	1920	6LD20
1645	E133	1773	82	1843	2Y2	1921	U24
1649	6C5	1774	112A	1844	GS3-B	1924	TY2-125
1650	LS5A	1775	36	1846	5T4	1926	6G6G
1651	G445B	1776	6D7	1847	19H4	1927	B142
1652	P220A	1777	7C7	1848	20A2	1928	12BA6
1656	LS8	1778	101D	1849	5W4	1929	6H6G
1658	LS9B	1779	102D	1850	6L19	1930	6H6
1660	LS7	1780	Twin30	1851	5X4G	1931	6G6GT
1661	DL	1781	310B	1852	5X4	1932	6J5G
1663	3A/109B	1782	340A	1853	6P25	1933	6J5
1665	DH	1783	9JP1	1854	5Y3G	1934	6J5GT
1667	LS8A	1784	6AK7	1855	UU9	1935	6J7G
1669	P625	1785	IN26	1856	5Y3GT	1936	6J7
1672	PEN36C	1786	2K33	1857	5Y4G	1937	6J7GT
1673	HL2	1787	4C35	1858	BS62	1938	6K6G
1675	N43	1788	3J31	1859	BS4A	1939	37X50
1676	LS8A	1789	5FP7	1860	3OD5	1940	6K6GT
1677	ACS2	1790	7Z4	1861	5Z3	1941	6K7G
1678	HLA2	1791	5JP1	1862	6AQ5	1942	6K7
1683	MKT4	1792	1960	1863	5Z4G	1943	6K6GT
1684	APP4c	1793	724B	1864	5Z4	1944	6K8G
1686	D418	1794	759	1865	EC81	1945	6K8
1687	D418	1795	723A/B	1866	M503	1946	6K8GT



## C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
1947	6L6G	2124	BK24	2237	1AD4	2549	85
1948	6L6	2125	BD78	2238	5672	2550	100T
1949	6D4	2126	3V/420B	2239	5676	2551	100TH
1950	6L7G	2127	EF82	2240	3B4	2552	100TH
1951	6L7	2128	ECH81	2241	DY70	2553	101F
1953	6N6G	2129	5763	2245	3J/160E	2554	111A
1954	6N6	2130	QY3-125	2253	ME1501	2556	117L7
1955	EF91	2131	4-250A	2254	5678	2557	117N7
1956	6N7G	2132	90AV	2255	Z801U	2558	117Z6
1957	6N7	2133	90CG	2256	X662	2560	121A
1958	6N7GT	2134	90CV	2257	UD166C	2561	122A
1959	50C5	2135	6BR7	2258	CS4B	2562	164V
1960	6R6G	2136	6BW6	2259	DL68	2563	204A
1961	12AU6	2138	GM4	2260	DF64	2565	2050
1962	6R7G	2139	EHM2	2266	CC3L	2566	205E
1963	6R7	2140	B6	2270	90AG	2567	205F
1964	6R7GT	2141	B6E	2271	GC10B	2569	210DET
1966	6SA7	2142	B12E	2275	DC70	2570	210HF
1967	6SA7GT	2143	B24	2284	4J50	2571	210HL
1968	CWS24A	2144	B24E	2287	G10H	2572	450TH
1969	6SC7	2145	M6	2288	DL66	2573	5651
1970	6SC7GT	2146	DM6	2289	U37	2574	210VPA
1971	1T4	2147	G24H	2291	1909A	2575	5670
1972	6SF5	2148	GM5B	2293	XB-1	2576	4C21
1973	6SF5GT	2149	GM1B	2296	NSP2	2577	212E
1974	6S7G	2150	MX103	2500	35Z4GT	2578	5687
1975	6S7	2151	MX105	2501	40	2579	218
1976	MV6-5	2152	MX107	2502	41FP	2580	220C
1977	UL41	2153	MX108	2503	41MH	2581	220/OT
1978	6SG7	2159	BR153	2504	41MHL	2582	220VS
1979	61BT	2160	ESU77	2505	41MPG	2584	231D
1980	185BT	2162	12LO1A	2506	41MPT	2586	240B
1981	6SK7	2164	K302	2507	1U4	2587	242C
1982	6SK7GT	2173	G10H	2508	41STH	2588	244A
1984	6SL7	2174	G240/2D	2510	1Z2	2589	250TH
1985	6SL7GT	2175	DG7-5	2511	42/OT	2591	100TH
1986	6SN7	2179	E2134	2512	42OTDD	2592	256B
1988	6SN7GT	2180	19H4	2514	43	2593	257A
1989	SD6	2183	X661	2516	2C39A	2594	258B
1990	6SQ7	2185	88D	2517	2E30	2595	259A
1991	6SQ7GT	2187	Z239/1G	2518	4B32	2597	262B
1993	6SS7	2188	W7/2D	2519	4X150A	2598	264A
1995	6ST7G	2189	V240C/2K	2520	5C22	2599	264C
1996	6ST7	2190	V233A/1K	2521	6AH6	2600	267B
1999	1V	2191	DG13-2	2522	6AS6	2601	271A
2000	EF91	2192	9MW5AX	2523	6AS7	2602	272A
2001	EF91	2193	89D	2524	6AU6	2603	274A
2002	7D9	2194	G400/1K	2526	6AV6	2604	275A
2003	7D9	2195	EF91	2527	6BA7	2605	282A
2004	6AL5	2199	GC10A	2528	45DS	2608	300A
2005	6AL5	2202	XE2	2529	45IU	2609	300B
2006	DDR2	2203	FX215	2530	45Z5	2610	303
2007	12AU7	2208	G50/1G	2531	46	2611	304TH
2008	8054	2209	6F33	2532	49	2612	307A
2009	V738	2210	5544	2533	50	2613	310A
2010	6J6	2213	NT2	2534	50L6	2614	311A
2011	12AU7	2214	3B/240M	2535	53	2615	313C
2014	5763	2215	5545	2536	53A	2616	314A
2015	DDR2	2216	30E8/P1	2537	55	2617	323A
2101	DF72	2217	6K25	2538	59	2618	327A
2102	DL75	2223	G10/371K	2539	61P	2619	328A
2103	DF73	2224	G1/371K	2540	63D	2620	329A
2104	DAF70	2225	150B2	2541	71A	2621	330B
2105	DL70	2231	E2266	2543	73	2622	331A
2106	DL66	2232	DDX52	2544	78	2623	332A
2107	DF66	2233	G5H	2545	79	2624	337A
2108	9MO6A	2234	X662	2546	81	2625	338A
2110	E2004	2235	EY84	2547	83V	2626	346A
2115	U41	2236	Z800U	2548	84	2627	349A



# C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
2628	349B	2709	1294	2798	QQVO3-10	2875	CL4
2629	350A	2710	3D6/1299	2799	QQVO3-20	2876	2D21
2630	351A	2711	1500T	2800	A40	2877	6AK5
2631	352A	2712	1609	2801	A40/N3	2878	CRT1
2632	354A	2713	1610	2803	2915	2879	CRT1
2633	362A	2714	1614	2804	A915A	2882	6AL5
2634	367	2715	1630	2805	A924	2883	6AQ6
2636	375A	2716	6SC7SPEC	2806	AC/2HL	2884	6AS6
2637	388A	2717	1729	2807	AC/2HL	2885	54NCP11
2638	393A	2718	1876	2808	AC/Pen	2886	M2H
2639	394A	2719	1924	2809	AC/5Pen	2887	DAC1
2640	405BU	2721	EL81	2811	AC/HL	2888	EL31
2642	417A	2722	3025	2812	AC/HL	2889	DD620
2643	2C40	2723	869B	2813	AC/HLDD	2890	DDT
2644	460BU	2725	09	2814	5D21	2891	DES
2645	506BU	2726	EL83	2815	AC/P	2892	DE5B
2647	532	2727	26D	2816	3JP12	2895	DET1SW
2648	632A	2728	29D	2817	6L6	2896	52CG
2651	707B	2729	E80F	2818	AC/PT8	2897	7MB1A
2652	709A	2730	5800	2819	AC/S	2899	DET9
2653	714AY	2731	63DS	2820	AC/SP1	2900	DET10
2654	715A	2733	3951	2821	ECC33	2901	EF86
2655	715B	2734	4003A	2822	AC/SG	2907	DF1
2656	724B	2735	4015A	2823	AC/SP3	2909	DH73M
2657	800	2738	RG1-240	2824	AC/SPen	2910	DK1
2658	806	2742	1L4	2825	ACT6	2911	DL2
2659	3D21A	2743	3033AF	2826	1B63A	2912	DL63
2660	809	2745	4050AG	2827	ACT10	2913	DLS1
2661	812	2746	4064A	2829	1N34	2920	E1148
2662	5639	2747	6U5	2830	AC/TH1	2925	EBF2
2663	815	2748	5Z4	2831	2C51	2926	EBL31
2664	822	2749	4081	2832	AC/VP2	2927	EC50
2665	825	2750	89J	2833	AF3	2929	ECH3
2666	829B	2751	4096AB	2834	AGT1	2930	ECH33
2668	846	2752	4PR60A	2835	5R4	2936	4B22
2669	849	2753	5684	2836	APP4G	2938	EL33
2670	849H	2754	5685	2837	APP4G	2940	EL36
2671	851	2755	4251AX	2839	AR300	2941	EL50
2672	852	2756	4260A	2840	5UP7	2942	EM1
2673	857B	2759	4304	2841	ARP12T	2943	ESU76
2674	863	2760	430B	2842	6C4	2944	ESU1500
2675	864	2761	4304BB	2843	616	2945	ESU75
2676	865	2762	4316A	2844	6X4	2946	ESU150
2679	5799	2764	4606	2847	5704	2947	ESU300
						2948	ESU450
2680	868	2765	4673	2848	CK707	2949	F123A
2683	878	2766	4687	2849	K1051	2950	129B
2685	880	2767	4960	2850	AT200A	2952	FA13
2686	889	2768	8003	2851	3D22	2953	FA14
2687	889R	2769	9006	2852	2J56	2954	FC2A
2688	891R	2770	13077	2854	6AN5	2955	FC4
2689	893R	2772	23043	2855	6K4	2956	FC13C
2690	904V	2773	68503	2856	1N23B	2957	FG17
2691	913	2774	68504	2857	1N23BM	2958	FG27A
2692	918	2775	68506	2858	3B24	2959	3B21
2693	929	2776	68510	2859	5846	2960	FP54
2694	930	2777	4B28	2860	AZ1	2967	8020
2695	931	2778	2J21A	2861	AZ2	2969	GT1
2696	931A	2779	859483	2862	AZ31	2973	GU7
2697	935	2786	26J	2864	B21	2976	NE2
2698	5896	2790	01K	2865	B30	2977	H2
2699	6088	2791	K332	2866	2C51	2978	H12
2700	957	2792	2K25	2867	BU100/6	2979	H30
2701	958A	2793	2J50	2869	3JP7	2981	H410
2704	7E5/1201	2794	C10SS/2G	2870	CC3D	2982	H610
2705	1203	2795	1L4	2871	CAT6	2985	HD24
2706	7C4/1203A	2796	6L6	2872	CAT9	2986	HD203A
2707	1231	2797	QQVO6-40A	2874	CK1005	2987	HF100



## C.V. TYPES WITH COMMERCIAL EQUIVALENTS

C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent	C.V. No.	Commercial Equivalent
2988	HF200	3604	GL464	3740	TX5-400	3830	XH1-5
2989	HK354E	3605	GL464B	3741	TZ2-300	3831	XL2
2991	HL2	3620	P220	3742	TZ20	3832	XP2
2994	HL23	3621	P410	3743	U5	3833	XSG2-0
2995	HL23DD	3622	P610	3744	U6	3834	XW2
2996	HL41DD	3623	PA40	3746	U14	3836	Z21
2997	HL63	3624	PE7B	3747	U15	3837	Z22
2998	HL133	3625	PE8	3750	U22	3838	Z62
2999	HL133DD	3626	Pen4B	3751	U21	3839	Z66
3500	HL210	3630	Pen44	3752	U30	3845	RS366
3501	HL610	3631	Pen45DD	3753	U31	3846	RS261
3502	HL1320	3633	Pen231	3754	U50	3847	RS250
3503	HLDD1320	3634	Pen428	3756	U600	3848	RS260
3505	HY114B	3635	Pen1340	3758	UR3C	3849	RS217
3506	HY615	3636	Pen1346	3759	UU4	3850	RS207
3515	KB2	3638	PenA4	3760	UU5	3851	RS253
3516	KK2	3640	PJ8	3761	UU7	3852	RS285
3519	KT30	3641	PM1HL	3763	V123B	3853	RS15
3520	KT31	3642	PM1LF	3765	V226	3854	RS47
3527	KTW73M	3643	PM2A	3766	V312	3855	RS329
3529	KTZ41	3645	PM2DX	3767	V339	3856	RV330
3530	KTZ73	3647	PM22A	3768	V503	3857	RS283A
3531	L2	3648	PM24E	3770	V955	3858	RS18
3532	L21	3649	PM22	3772	V970	3859	RV271A
3533	L22DD	3652	PT5	3773	V1010	3860	RS282
3534	L30	3653	PT6	3774	V1020	3861	RS281
3537	L600	3654	PT11	3775	V1021	3862	RS55
3538	L610	3655	PT425	3776	V1023	3863	RS289
3541	LS6A	3656	PT425	3777	V1029	3864	RS389
3546	MHD4	3657	PV05-15	3778	V1105	3865	RS288
3547	MHL4	3658	PV1-35	3784	5A/102A	3866	RS203
3552	MPT4K	3667	RG1-250	3785	VMP4G	3867	ESU1500AX
3553	MS4B	3671	RK25	3786	VMP4G	3868	RSQ15/40
3554	MPT42	3672	RK28	3787	VP2	3869	RSQ15/5
3557	MR300	3673	RK28A	3788	VP4	3870	RGQ10/4D
3558	MR300/E	3674	RK31	3790	VP13C	3871	RS254
3561	MS/Pen	3677	RK47	3791	VP21	3872	RS255
3562	MSP41	3679	RK49	3792	VP23	3873	RS566
3563	MT11SW	3680	RK60	3793	VP24	3881	EB41
3564	MT12	3681	RK62	3794	VP210	3882	EB41
3565	ME41	3683	RKR47	3795	VP215	3883	EAF42
3567	MU1	3688	2C33	3796	VP1322	3884	ECC40
3570	MU4250	3690	RZ1-150	3797	V944A	3885	EF40
3571	MVSPen	3691	S23	3798	VR75	3886	EF41
3572	MVSPenB	3692	S23	3799	VR90	3887	EF42
3573	MZ205/20	3694	S130A	3800	VS2	3888	ECH42
3574	MZ1/76	3695	S215	3802	VS42	3889	EL41
3576	MX40	3696	S215A	3803	VS2K4	3890	EL42
3578	PM22D	3698	S610	3804	W21	3891	EZ40
3579	PT5E	3702	SG215	3805	W30K	3892	AZ41
3581	V1501	3703	SP4B	3806	W31	4007	6AL5
3582	VP4B	3704	SP13C	3810	WD30	4008	5719
3583	5HP1	3709	STV150/200	3812	1P31	4009	6BA6
3584	21/2	3712	STV280/80A	3813	8A	4010	6AK5
3586	471/A	3715	SW5	3816	X21	4011	6AS6
3587	705A	3719	SW7	3817	X21	4012	6BE6
3588	706A	3721	T4D	3818	X22	4013	5670
3589	707A	3722	T20	3819	X24	4016	5814
3590	708A	3723	T41	3820	X24	4017	5751
3593	713	3724	T200	3821	X31	4018	5727
3594	717A	3726	TDD2A	3822	X31	4019	6AQ5
3595	721A	3727	TDD4	3823	X41	4020	6073
3596	CE302	3730	TMC15B	3824	X61	4021	3B24
3597	726B	3731	TMC16B	3825	X63	4022	6135
3599	829A	3732	TMC20B	3826	X65	4023	6AU6
3600	902	3735	TP36	3828	X66	4024	12AT7
3601	7193	3739	TX3-200	3829	293A	6008	24B1



# COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
O1A	750	1R5	782	3B/240M	2214	5C22	2520
O9	2725	1S4	783	3B/501A	49	5CP1	600
OA2	1832	1S5	784	3BP1	814	5CP7	838
OA4G	752	1T4	785	3C22	999	5D21	2814
OB2	1833		1971	3C24	789	5FP7	718
OZ4	692	1T5	786	3C31	1765		1789
OZ4-A	517	1T5GT	1829	3C45	372	5GP1	839
1A3	753	1U4	2507	3D6	2710	5H4	840
1A4P	754	1V	1999	3D21A	2659	5HP1	3583
1A5G	755	1Z2	2510	3D22	2851	5J23	542
1A5GT	756	2A3	1831	3D/100A	1422	5J/180E	445
1A6	757	2A5	1834	3DP1	816	5JP1	1791
1A7G	1800	2A6	1769	3EP1	817	5LP1	741
1A7GT	1802	2A7	787	3EG1	1526		1814
1AD4	2237	2AP1	790	3FP7	1761	5MP1	740
1B3	1830	2B7	1837	3GP1	516	5R4GY	717
1B4P	758	2C21	875	3J31	1788	5R4WGY	2835
1B5	759	2C22	792	3J/160E	2245	5T4	1846
1B7GT	760	2C25	1567	3JP7	2869	5U4	1071
1B22	761	2C26	802	3JP12	2816		VU71
1B23	539	2C26A	1759	3P/270B	1470	5U4G	575
1B24	725	2C33	793	3Q4	818	5U4GT	841
1B26	576		3688	3Q5	819	5UP7	2840
1B27	713	2C39A	2516	3Q/191E	570	5V4G	729
1B35	369	2C40	932	3Q/213E	1734	5W4	1849
1B36	577		2643	3Q/260E	446	5W4DT	503
1B49	508	2C43	688	3S4	820	5W4G	842
1B63A	2826	2C51	2831	3V/420B	2126	5X4	1852
1C5G	1803	2C51W	2866	4-65A	1905	5X4G	1851
1C5GT	1805	2D2	794	4-250A	2131	5Y3	1268
1C21	762	2D4A	795	4A1	821		NU20
1D5	764	2D13C	796	4B22	2936	5Y3G	1854
1D5GP	705	2D21	797	4B26	1836	5Y3GT	1856
1D5GT	1806	2D21W	2876	4B28	2777	5Y4G	1857
1D7G	765	2DP1	1813	4B30	933	5Z3	1861
1D8GT	1811	2E22	798	4B32	2518	5Z4	1864
1E5GT	766	2E30	2517	4C21	2576	5Z4G	1863
1E7G	1812	2J21A	719	4C29	823	5Z4GT	2748
1F4	767		2778	4C30	934	6A3	730
1F5G	768	2J22	800	4C35	1787	6A6	1867
1F6	769	2J26	1760			6A7	1870
1F7GV	770	2J31	1807		1000	6A8	579
1G4	1817	2J32	1808		1109	6A8G	578
1G5G	771	2J33	1809	4D1	AR7	6A8GT	580
1G6G	772	2J34	1810		NR55	6AB5	843
1G6GT	773	2J36	514		VR109	6AB7	661
1H4G	774	2J42	370	4D21	2130		1873
1H5G	1818	2J48	1822	4H/180E	1883	6AC5G	844
1H5GT	1820	2J50	2793	4J31	1914	6AC5GT	845
	1758	2J54	801	4J33	1916		660
1L4	2742	2J56	2852	4J34	1897	6AC7	747
	2795	2K25	2792	4J35	1898		846
1LA6	775	2K28	1892	4J50	2284	6AD7G	1878
1LB4	776	2K33	1786	4J53	513	6AF6G	847
1LC5	777	2V3	803	4SH	1126	6AG5	848
1LC6	778	2V3G	804		VR126	6AG7	1882
1LD5	779	2Y2	1843	4SHA	825	6AH6	2521
1LH4	780	3A4	807	4THA	826	6AJ5	995
1LN5	781	3A5	808	4TPB	828	6AJ7	849
1N5	1821	3A/105B	809		829	6AK5	850
1N5GT	1823	3A/109B	1663	4TSP	830	6AK5W	2877
1N21	727	3AP1/1A	739	4X150A	2519		4010
1N23A	749		602	5A/102A	3784	6AK6	1762
1N23B	2856	3B4	2240	5AP1	832	6AK7	1784
1N23BM	2857	3B21	2959	5B/251M	428	6AL5	140
1N26	1785	3B22	812	5B/300B	834		283
1N34	2829	3B24W	2858	5B/502A	1096		2004
1P5GT	728	3B24WA	4021		VT96		2005
1Q5G	1824	3B28	1835	5BP1	601	6AL5W	2882
1Q5GT	1826	3B/102B	84	5BP4	836		4007







# COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	
12SQ7	546	39/44	1771	101D	1778	228A	734	
12SQ7GT	547	40	2501	101F	2553	230XP	1023	
12SR7	700	41	608	102D	1779	}	VT23	
12Y4	523	41FP	2502	111A	2554		231D	2584
12Z3	927	41MH	2503	112A	1774		240B	2586
13SPA	929	41MHL	2504	116/Pen	}{ ARP22		242C	2587
14F7	930	41MP	1458	117L7		2556	244A	2588
14L	1087	41MPG	2505		117N7	2557	244V	1180
15	931	41MPT	2506	117Z6	2558	}	NR58	
15D2	1107	41MTL	1117	121A	2560		250TH	2589
}	VR107	}	VR117	122A	2561	256B	2592	
	19E2		265	41MXP	1122	122A	257A	2593
19G3	277	}	VR122	129B	2950	258B	2594	
19G6	371		41STH	2508	150B2	2225	259A	2595
19H1	121	42	609	161	708	262B	2597	
}	1847	}	42MPT	1325	164V	2562	264A	2598
	2180		ARP7	2511	185BT	1980	264C	2599
19H5	490	42OT	2511	202	}{	267B	2600	
20A1	1424	42OTDD	2512	204A		N53	271A	2601
20A2	1848	42SPT	1444		205D	2563	272A	2602
23D	1588	43	2514	}	1749	274A	2603	
24A	936	45	}		2565	274B	684	
24B1	6008			610	205E	2566	275A	2604
24B2	339	45IU	2529	205F	2567	279A	669	
24C3	125	45Z5	2530	}	1044	282A	2605	
25A6	549	46	2531		VR44	293A	3829	
25A6GT	550	47	1772	210DET	2569	300A	2608	
25A7	937	49	2532	210HF	2570	300B	2609	
25AC5	938	50	2533	210HL	2571	303	2610	
25B6	939	50C5	1959	}	1027	304	1202	
25B8	948	50L6	2534		210LF	1042	}	NS5
25L6	552	50L6GT	571	}	1021	304TH		2611
25L6G	551	50Y6GT	805		VR21	1043	307A	2612
25L6GT	553	52CG	2896	VR27	1043	310A	2603	
25SN7	423	53	2535	210PG	VR43	310B	1781	
25Y5	942	53A	2536	}	1049	311A	2614	
25Z5	555	55	2537		210SPT	VR49	313C	2615
25Z6	558	55CG	405	}	2574	314A	2616	
25Z6GT	559	56	611		210VPA	1083	316A	683
26	943	57	612	}	NR41	323A	2617	
27	944	58	613		210VPT	NR83	327A	2618
27M1	337	59	2538	}	620	328A	2619	
28D7	945	61BT	1979		211	2577	329A	2620
28D7GT	946	61P	2539	212E	1018	330B	2621	
29C1	430	71A	2541	}	VR18	331A	2622	
30	604	73	2543		215SG		332A	2623
30D5	1860	75	614	218	2579	337A	2624	
30E7	400	76	615	}	1032	338A	2625	
31	947	77	616		220B	AR16	340A	1782
32	711	78	2544	}	VR32	346A	2626	
32L7	948	79	2545		220C	2580	349A	2627
33	949	80	617	}	1313	349B	2628	
33A/100A	1750	81	2546		220LF	AR15	359A	2629
33A/158M	1884	82	1773	}	2581	3502	1799	
34	1751	83	618		220P	1020	351A	2630
35/51	1752	83V	2547	}	VT20	352A	2631	
35A5	1753	84	}		1022	354A	2632	
35L6	561	}		2548	VR22	357A	691	
35L6GT	562		85	2549	220PT	1333	362A	2633
35T	668	85A1	431	}	ARP14	367	2634	
35TG	1754	85A2	449		220RC	1312	368A	710
}	564	89	833	}	AR14	375A	2636	
	726	89J	2750		220TH	1082	388A	2637
35Z3GT	565	90AG	2270	}	VR82	393A	2638	
35Z4GT	2500	90AV	2132		220VPT	1338	394A	2639
35Z5	567	90CG	2133	}	ARP24	405BU	2640	
35Z5GT	568	90CV	2134		220VS	2582	417A	2642
36	1775	100T	2550	}	1028	450TH	2572	
37	606	}	2551		220VSG	VR28	506BU	2645
38	712		100TH	2552	}	1454	532	2647
			2591	225DU		1455		



## COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
632A	2648	837	637	1612	654	4203	1587
645	670	838	638	1613	655	4205E	1648
700A	679	843	639	1614	2714	4212D	1619
700B	695	845	735	1616	656	4212E	1252
700C	696	846	2668	1619	723	4228A	1450
700D	699	849	2669	1620	657	4242A	25
701A	672	849H	2670	1622	658	4251AX	2755
702A	678	851	2671	1625	659	4260A	2756
703A	679	852	2672	1626	1755	4264A	2598
705A	3587	857B	2673	1629	1756	4270A	30
706A	3588	860	640	1630	2715	4274A	1451
707A	3589	861	641	1637	996	4279A	1250
707B	{ 1768	863	2674	1729	2717	4282B	1365
	{ 2651	864	2675	1851	599	4283B	ATS70
708A	3590	865	2676	1852	1876	4300A	1452
709A	2652	866	32	1876	2718	4304	2759
713	3593	866JR	2679	1924	2719	4304B	2760
714AY	2653	868	2680	2000T	998	4304BB	2761
715A	2654	869B	2723	2050	2721	4304CB	1062
715B	{ 398	872	642	2051	1798	4307A	{ 1080
	{ 2655	874	643	3025	2722		VT80
715C	598	875	644	3951	2733	4313C	75
717A	3594	876	645	4003A	2734	4316A	{ 683
721A	3595	878	2683	4011A	1415		{ 2762
723A	720	879	597	4012A	1445	4317	{ 1201
723A/B	1795	880	2685	4015A	2735		{ NS4
724A	2656	884	647	4017B	1446	4328A	2619
724B	1793	885	648	4018AG	1733	4328D	245
725A	722	889	2686	4019A	249	4357A	27
726B	3597	889R	2687	4019B	{ 1309	4378	1452
759	1794	891R	2688		{ AR11	4606	2764
800	2657	892R	904	4020A	{ 1310	4673	2765
801	621	893R	2689		{ AR12	4687	2766
802	622	902	3600	4021B	{ AR20	4960	2767
803	623	904V	2690		{ 1316	5544	2210
804	624	905	736	4022AR	{ 1311	5545	2215
805	625	906	737		{ AR13	5639	2662
806	2658	913	2691	4030C	1447	5643	474
	{ 124	918	2692	4033A	{ 1220	5651	2573
	{ 1060	929	2693		{ NT37	5654	4010
	{ 1364	930	2694	4033AF	2743	5670	{ 2575
807	{ 1374	931	2695	4045A	243		{ 4013
	{ 1572	931A	2696	4046A	244	5672	2238
	{ ARS25	935	2697	4049A	1471	5676	2239
	{ ARS25A	953	738	4050AG	2745	5678	2254
	{ VT60/A						
808	626	954	{ 1095	4052A	{ 1081	5684	2753
809	2660		{ 1579		{ VT81	5685	2754
810	627		{ VR95/A	4056A	1025	5687	2578
811	628	955	{ 1059	4060A	1030	5704	2847
812	2661		{ VR59	4061A	1369	5719	4008
813	{ 26	956	649		{ ATP10	5725	4011
	{ 177	957	2700	4062A	1568	5726	4007
814	629	958	650	4064A	2746	5727	4018
815	2663	958A	2701	4064B	1449	5749	4009
816	724	991	651	4066A	1181	5750	4012
822	2664	1201	2704	4069A	{ 1372	5751	4017
825	2665	1203	2705		{ ATP100	5763	{ 2014
826	630	1203A	2706	4074A	18		{ 2129
828	631	1231	2707	4074B	{ 1573	5799	2678
829	632	1232	894		{ VT61A	5800	2730
829A	3599	1291	811	4077A	33	5802	495
829B	2666	1294	2709	4078A	1420	5814	4016
830B	{ 702	1299	{ 815	4078AG	447	5846	2859
	{ 634		{ 2710	4081	2749	5861	273
832	{ 1088	1500T	2711	4081A	1797	5894A	2797
	{ VT88	1602	906	4094A	1620	5896	2698
832A	788	1603	652	4096AB	2751	6005	4019
833	635	1609	2712	4102D	1641	6073	4020
836	636	1610	2713	4104D	1694	6088	2699
		1611	653	4201	1097	6135	4022



# COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
7193	3601	ACT24	240			DL81	2913
7206A	676	ACT25	436	D42	{ 557	DO30	{ 1178
	188	AC/TH1	2830		{ 1302		{ NR56
	1070	AC/TP	1718	D63	{ ARD4	DO60	{ 1206
7475	{ VS70	AC/VP1	518	DA30	{ 563		{ NT18
	{ AWW2	AC/VP2	2832	DA41	{ 1076	DPQ	{ 1141
8003	2768	AF3	2833		{ VT76		{ NGT1
8011	46	AFH202	12	DA60	{ 527	DW4/350	{ 1796
8012	662	AL1	159	DA100	{ 1219	DY70	{ 2241
8013A	716	AL60	9		{ NT36	E80F	{ 2729
8016	541	AP4	{ 1175	DAC1	{ 2887	E4103-B4	{ 1522
8020	2967		{ NR54	DAF70	{ 2104	E4205-B7	{ 964
8025	663	APP4C	1684	DAG1	{ 2	E4504-M16	{ 966
8054	2008	APP4G	2836/7	DC51	{ 1	EA50	{ 1092
9001	1757	AR300	2839	DC70	{ 2275		{ VR92
9002	664	AT4	{ 1171	DD41	{ 1403	EA76	{ 469
9003	665		{ NR50	DD620	{ 2889	EAC91	{ 137
9004	666	AZ1	2860		{ 1119		{ 1804
9005	667	AZ2	2861	DDL4	{ 1691	EA42	{ 3883
9006	2769	AZ31	2862		{ VR119		{ 1054
13077	2770	AZ41	3892	DDT	{ 2890	EB34	{ ARDD5
23043	2772	B21	{ 1696	DE5	{ 2891		{ VR54
68503	2773		{ 2864	DE5B	{ 2892	EB41	{ 3881
		B30	2865	DEQ	{ 1156/7	EBC3	{ 1428
68504	2774	BL63	{ 1102		{ NR18		{ 1715
68506	2775		{ VR102	DER	{ 1642	EBC21	{ 347
68510	2776	B65	278	DET1SW	{ 2895		{ 1055
A40	2800	BR153	2159	DET3	{ 1034	EBC33	{ AR21
A40/N3	2801	BS4A	1859		{ 384		{ NR48
A1714	408	BS5	233	DET5	{ 1223		{ VR55
AC/2HL	2806/7	BS52	1841		{ 1233	EBC41	{ 3882
AC4/Pen	{ ARP8	BS62	1858		{ NT40	EBF2	{ 2925
	{ 1326	BS82	463	DET6	{ 1620	EBF32	{ 501
AC5/Pen	2809	BS84	462	DET9	{ 2899	EBL31	{ 2926
AC5/PenDD	{ NR87	BS92	461	DET10	{ 2900	EC31	{ 1433
	{ 1189	BT5	1147		{ 1235	EC50	{ 2927
AC6/Pen	{ NR74	BT9B	13	DET12	{ 1288	EC52	{ 1137
	{ 2811/2	BT19	1144		{ NT58		{ VR137
AC/HL	2813	BT45	22	DET16	{ 1363	EC53	{ 1197
AC/HLDD	1168	CIC	1400	DET18	{ 419	EC54	{ 66
AC044	{ NR44	CAR1	1601	DET19	{ 18	EC70	{ 468
	{ 1692	CAR4	1602	DET20	{ 6	EC80	{ 1886
AC/P	{ 2815	CAT1	1600		{ 1135	EC81	{ 1865
	{ 1190	CAT2	1606	DET24	{ 397	EC91	{ 417
ACP4	{ 1198	CAT6	2871		{ 1025		{ 181
	{ 207	CAT9	2872	DET25	{ AT35	ECC31	{ 1285
	{ NR94	CAT17C	533		{ VT25		{ NR73
		CAT20C	421	DF1	2907	ECC32	181
AC/Pen	2808	CBL31	1463	DF64	2260	ECC33	2821
ACR10	1382	CE2	1764	DF66	2107	ECC35	569
AC/S	2819	CE20	1474	DF70	386	ECC40	3884
AC/S2	1677	CE302	3596	DF72	2101	ECH3	2929
	1164	CK502	385	DF73	2103	ECH22	302
AC/SG	{ NR37	CK505	386	DG7-5	2175	ECH33	2930
	{ 2822	CK505AX	443	DG13-2	2191		{ 1347
AC/SP1	2820	CK506	387	DH	1665	ECH35	{ 1581
	545	CK707	2848	DH30	1695		{ ARTH2
AC/SP3	{ 1430	CK1005	2874	DH73M	2909	ECH42	{ 3888
	{ 2823	CL4	2875	DH81	882	ECH81	{ 2128
AC/SPen	2824	CL33	1401	DK1	2910	ECR30	1588
	1222	CMG25	1432	DL	1661	ECR35	1587
ACT6	{ 2825	CMG25RS	250	DL2	2911	ECR60	1097
	{ AT37	CY31	1402	DL63	2912	EF8	{ 1123
	{ NT39		{ 1072	DL66	{ 2106		{ VR123
ACT9	28	D1	{ ARD8		{ 2288	EF9	{ 1427
ACT10	2827		{ VR78	DL68	{ 2259	EF22	{ 303
ACT16	1431		{ 1070	DL70	{ 2105		{ 1056
ACT17	225	D41	{ 1187	DL71	{ 385	EF36	{ 1404
ACT19	379		{ NR46	DL72	{ 387		{ NR49
ACT22	257		{ NR66	DL75	{ 2102		{ VR56
ACT23	288						



## COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
EF37	{ 358	ESA892	701	H42	{ 1182		{ 1181
	{ 586	ESG250	1031		{ NR60	KT41	{ ARP25
EF37A	{ 358	ESP450	{ 1506	H63	{ 1073		{ NR59
	{ 1053		{ 1630		{ VT73	KT42	{ 1174
EF39	{ 1464	ESU74	{ 74	H410	2981		{ NR53
	{ ARP34		{ 312	H610	2982		{ 1340
	{ VR53	ESU75	2945	HD24	2985	KT44	{ 1437
EF40	3885	ESU76	2943	HD203A	2986		{ 1576/7
EF41	3886	ESU77	2160	HF100	2987		{ ARP26
EF42	3887		{ 1029	HF200	2988	KT45	{ 1825
	{ 1091	ESU150	{ 2946	HF300	693	KT61	{ 1438
EF50	{ 1578		{ VU29	HK24	745	KT66	{ 1075
	{ ARP35	ESU208	1260	HK54	707		{ VT75
	{ VR91/A	ESU300	{ 1355	HK257	824	KT67	{ 437
EF51	305		{ 2947	HK354E	2989	KTW61	{ 1281
EF52	327	ESU450	{ 1259	HL2	{ 2991		{ 1100
EF54	{ 380		{ 2948			KTW62	{ ARP15
	{ VR136	ESU1500	{ 1615				{ VR100
			{ 2944	HL2K	{ 1050		
EF55	173	ESU1500AX	3867		{ 1436		
EF70	467	ESW501	1621		{ VT50	KTW63	{ ARP15
EF71	475	EY51	426		{ 1130		{ NR86
EF72	465	EY70	473	HL23	{ 1586	KTW73M	{ 3527
EF73	466	EY84	2235		{ 2994		{ 1191
EF82	2127	EY91	135		{ VR130	KTZ41	{ 3529
EF86	2901	EZ22	346	HL23DD	{ 1306		{ NR76
	{ 138	EZ35	574		{ 2995	KTZ73	{ 1343
	{ 1955	EZ40	3891	HL41DD	{ AR8		{ 3530
EF91	{ 2000	F123A	2949	HL63	2996	L2	{ ARP38
	{ 2001	FC2A	2954	HL133	2997		{ 3531
	{ 2195	FC4	2955	HL133DD	2999	L21	{ 1307
EF92	131	FC13C	2956		{ 1303		{ 3532
EHM2	2139	FG67	742	HL210	{ 3500	L22DD	{ AR9
EHT1	19	FP54	2960		{ AR4	L30	{ 3533
EK2	1426	G120/1B	438	HL610	3501	L600	{ 3537
	{ 1057	GC10A	2199	HL1320	3502	L610	{ 3538
EK32	{ 1570	GC10B	2271	HLDD1320	3503	LD210	{ 502
	{ VR57	GL446B	687	HLA2	1678		{ 548
EL2	1429	GL464	3604		{ 1124		{ 1166
EL3C	822	GL464B	3605	HP4101	{ 1879	LP2	{ 1304
EL22	304	GL592	1903		{ ARP23		{ AR5
EL31	2888	GL8023	506		{ NR70		{ AR6
EL32	{ 1052	GM1B	2149		{ VR124		{ NR42
	{ VT52						
		GM5B	2148			LS5	1637
EL33	2938	GS46	584	HVR2	{ 1134	LS5A	1650
EL35	{ 1286	GT1A	{ 1143		{ NU34	LS6A	3541
	{ NR77		{ 1128		{ VU134	LS8	1656
EL36	2940		{ NGT2	HY75	751	LS8A	1667
EL38	450	GT1C	{ VGT128	HY114B	3505	LS9B	1658
EL41	3889		{ 530	HY615	3506	LS650	391
EL42	3890	GT1E	530	K3A	410	M500	353
EL50	2941	GU1	1262	KB2	3515		{ 1359
EL70	471		{ 1072	KK2	3516	ME41	{ 3565
EL81	2721	GU5	{ AU6		{ 1118		{ AW5
EL83	2726		{ NU16	KT2	{ ARP1	ME1005	354
EL91	136		{ VU72		{ NR39	ME1400	432
EM1	2942	GU7	2973		{ VR118	ME1501	2253
EM4	1434	GU8	{ 324	KT8	{ 1079	MF31-55	429
	{ 1077		{ 1628		{ VT79		
EM31	{ AW6	GU11	532	KT24	{ 1334	MH4	{ 1037
	{ V177	GU20	1435		{ ARP18		{ NR31
EM34	394	GU21	{ 5	KT30	3519		{ AR17
	{ 1103		{ 152	KT31	3520	MH41	{ VR37
EM35	{ NR69	GZ32	{ 378		{ 1287		{ 1505
	{ V1103		{ 593	KT32	{ 1502	MHD4	{ VR505
ES250M	1618				{ NR95		{ 3546
ES357	691	H2	2977		{ VR502	MHL4	{ 1038
ES450	1207	H12	2978	KT33C	{ 1503		{ 3547
ES450X	1553	H30	2979		{ VR503		{ NR26
ES1500/A	1614	H41	24				{ VR38



# COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
MHLD6	{ 1101	PE7B	3624			RS283A	3857
	VR101	PE8	3625	PX25	{ 1040	RS285	3852
MKT4	{ 1683	Pen4B	3626		NR47	RS288	3865
	1160/1	Pen4DD	519	PZ1-35	{ 1240	RS289	3863
ML4	{ 1732	Pen25	65		NR40	RS329	3855
	NR27/A	Pen36C	1672		1240	RS366	3845
	NR57	Pen44	3630	PZ1-75	{ 1221	RS389	3864
ML6	{ 1105	Pen45	1407		NT38A	RS566	3873
	VR105	Pen45DD	3631	QP21	{ 1035	RSQ15/5	3869
MPT4K	{ 3552	Pen46	1127		VR35	RSQ15/40	3868
MPT42	{ 3554				556	RV330	3856
MR4	{ 1611	Pen220A	{ VT127	QP25	{ 1342	RX3-120	{ 1261
MR10	{ 34		1051		ARP37		NU5
MS4B	{ 3553		VT51	QS75/60	{ 434	RX235	{ 709
	1282	Pen231	3633	QS95/10	{ 286	RZ1-150	{ 3690
MSP4	{ 1341	Pen383	1456	QS105/45	{ 422	S22AF	{ 39
	ARP33	Pen428	3634	QS150/45	{ 395	S23	3691/2
MSP41	{ 3562	Pen1340	{ 3635	QQE03-10	{ 2798	S25A	{ 16
	1129		ARP9	QQE06-40	{ 424	S26A	{ 53
MS/Pen	{ 3561	Pen1346	{ 3636	QQV03-20	{ 2799	S27A	{ 82
	NR71		1329	QQV06-40	{ 424	S30A	{ 127
	VR129	PenA4	{ 3638	QQV06-40A	{ 2797		
			ARP10				
MS/PenB	{ 1125	PM1HL	3641	QQZ04-15	{ 1838	S130	{ 1110
	VR125	PM1LF	3642	QV04-7	{ 309		1731
MT4	{ 1610			QY3-125	{ 2130	S130A	{ AW3
MT9F	{ 1439	PM2	{ NR28	R3	{ 1569	S130P	{ 45
MT9L	{ 1440		VR19		VU39A	S215	3695
MT11SW	{ 3563	PM2A	3643	R10	{ 261	S215A	3696
MT12	{ 3564	PM2DX	3645	RG1-240	{ 2738	S610	3698
MT12A	{ 1441	PM3	{ 1151	RG1-240A	{ 1626	S625	{ 1317
MT14	{ 1442		NR15		1263		ARS6
MT16	{ 505		1152	RG1-250	{ 3667	SD6	{ 1986
MU1	{ 3567	PM4DX	{ 1154		1623	SG215	{ 3702
	1279		NR15A	RG3-250	{ 1625		1320
MU2	{ 1459		NR16A	RG3-1250	{ 152	SP2	{ 1409
	NU31	PM12M	{ 1041		1629		ARP2
	1296		VR41	RG4-100	{ 3670		1283
MU14	{ AU3A	PM12V	{ 1319	RG4-1250	{ 5	SP4	{ 1324
	NU17		ARS8	RGQ10/4d	{ 3870		1468
	VU39	PM14	{ 1158/9	RH20A	{ 704		ARP6
MV6-5	{ 1976		NR22/3	RK25	{ 3671	SP4B	{ 3703
MVSPen	{ 3571			RK28	{ 3672	SP13C	{ 3704
MVSPenB	{ 3572	PM22	3649	RK28A	{ 3673		1335
MX2	{ 418	PM22A	3647	RK31	{ 3674		1574
MX40	{ 3576	PM22D	3578	RK34	{ 1061	SP41	{ 1699
MZ1-75	{ 444	PM22E	3648		VT61		1700
MZ1-76	{ 3574	PM24A	{ 1167	RK47	{ 3677		ARP19
MZ1-100	{ 1219		NR43	RK48A	{ 690		VR6A5
MZ2-200	{ 200	PM24D	{ 1237/8	RK49	{ 3679	SP42	{ 1336
	1361		NT62	RK60	{ 3680		ARP20
MZ05-20	{ 3573	PM202	{ 1246	RK62	{ 3681		118
	AT20	PM254	{ 1153	RL18	{ 1197	SP61	{ 260
	1188		NR16		NR88		1605
N43	{ 1675	PM256	{ 1208	RL37	{ 66		ARP36
	NR72		NT20	RS15	{ 3853		VR65
O9D	{ 1518	PT5	{ 3652	RS18	{ 3858	SP210	{ 1322
O9J	{ 1596	PT5E	{ 3579	RS47	{ 3854		ARP4
OA2	{ 1832		1371	RS55	{ 3862		284
OB2	{ 1833	PT6	{ 3653	RS203	{ 3866	STV70/20	{ 287
P41	{ 1408		ATP75	RS207	{ 3850		1895
P61	{ 1066	PT11	{ 3654	RS217	{ 3849	STV70/60	{ 3709
	VR66	PT15	{ 1104	RS250	{ 3847		1068
P220	{ 3620		VT104	RS253	{ 3851	STV150/200	{ AW4
P220A	{ 1652	PT25H	{ 1046	RS254	{ 3871		VS68
P410	{ 3621		VR46	RS255	{ 3872	STV280/40	{ VS69
P610	{ 3622	PT425	{ 3655/6	RS260	{ 3848		NS1
P625	{ 1669		1370	RS261	{ 3846	STV280/80	{ 3712
PA40	{ 3623	PV1-35	{ 3658	RS271A	{ 3859		128
PD220A	{ 1163		ATP35	RS281	{ 3861	STV280/80A	
	NR35	PVO5-15	{ 3657	RS282	{ 3860	SU750	



## COMMERCIAL TYPES WITH C.V. AND SERVICE EQUIVALENTS

Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type	Commercial Type	C.V. Type
SU2150A	1069	U7	146	VCRX221	407	X24	3819
	1120		149		VCRX277		420
	1290/1		147	VMP4G		1169	X31
	NU33		1443		3785	3822	
VU120	1064	3786	1194				
	AU3	NR45	1697				
T4D	3721	U12-14	NU3	VMS4	1165	X41	1460
T20	3722		VU64		NR38		3823
	1585	U14	3746	VP2	1323	X56	NR84
	1121		1265		3787		1045
T41	3723	U15	1266	VP2B	520	X61	VR45
	VGT121		3747		ARP5		VT45
T200	3724	U16	NU13	VP4	3788	X61M	3824
	1308		1290	VP4B	3582		281
TDD2A	3726	U17	1113	VP13C	3790	X63	3825
	AR10		AU4		1332		1280
TDD4	3727	U18	NU18	VP21	3791	X64	ARH1
TH2	1410		VU113		ARP13		NR67
TH41	1411	U19	1264	VP23	1331	X65	1193
TP22	1344		AU1		3792		NR82
TP25	ARTP1	U20	NU12	VP24	ARP12	X66	1099
	1345		187		3793		3828
TP26	ARTP2	U21	31	VP41	21	XH1-5	VR99
	3735		3751		1414		3830
TSP4	560	U22	1356	VP133	1457	XJ	119
	1330		1461		3794		XLI.5
	ARP11	1719	3750	VP210	3795	XLO	1720
TT11	1501	AU8	3750	VP215	3796		3831
TT12	524	U23	235	VP1322	3796	XP	1701
TT15	415		U24	1921	VR75		3798
TV4	1412	U27	1111	VR90	3799	XP1-5	1702
TX3-200	3739	U30	3752	VR105	686		176
TX5-400	3740	U37	2289	VR150	216	XP2	1721
	315	U41	2115	VS2	3800		3832
TY1-50	1062	U50	3754	VS24	3802	XSG1-5	175
	VT62	U52	1575	VS24K	AR57		XSG2
TY2-125	1924	U600	3756	VT4B	1553	XW2	3833
TYS4-500	1889	U4020	1267	W21	171	Y63	3834
TZ2-300	3741	UL41	1977	W30K	3804	Y65	1103
TZ20	3742	UR3C	3758		W31	3805	Z21
TZO5-20	1047	UU4	3759	W42	1183	Z22	1469
	VR47	UU5	3760	WD30	NR61		1727
U2	142	UU6	1413		X21	3810	Z62
U3	143	UU7	3761	3816		1192	
U4	144	UU9	1855	X22	3817	Z66	3838
U4B	141	VCRX210	389		3818		AR21
U5	145					NR79	3839
U6	3743					ZA1	1176
	3744						

## BRITISH ARMY VALVES WITH COMMERCIAL EQUIVALENTS

Services No.	Commercial Equivalent	Services No.	Commercial Equivalent	Services No.	Commercial Equivalent	Services No.	Commercial Equivalent
AD1	DLS10	AR14	220RC	ARH1	X64	ARP10	PenA4
AR4	HL210	AR15	220LF	ARP1	KT2	ARP11	TSP4
AR5	LP2	AR16	220B	ARP2	SP2	ARP12	VP23
AR6	LP2	AR17	MH4	ARP3	9D2	ARP13	VP21
AR7	4D1	AR20	4021B	ARP4	SP210	ARP14	220PT
AR8	HL23DD	AR21	EBC33	ARP5	VP2	ARP15	KTW63
AR9	L21	ARD2	D1	ARP6	SP4	ARP16	6I7
AR10	TDD2A	ARD4	D42	ARP7	42MPT	ARP17	6F6
AR11	4019B	ARDD1	10D1	ARP8	AC4/Pen	ARP18	KT24
AR12	4020A	ARDD3	6H6	ARP9	Pen1340	ARP19	SP41
AR13	4022AR	ARDD5	EB34	ARP9a	7D8	ARP20	SP42



## BRITISH ARMY VALVES WITH COMMERCIAL EQUIVALENTS—continued

Services No.	Commercial Equivalent	Services No.	Commercial Equivalent	Services No.	Commercial Equivalent	Services No.	Commercial Equivalent
ARP21	Z62	ARP37	QP25	AT37	ACT6	AU3A	MU14
ARP22	116/Pen	ARP38	KTZ73	ATP10	4061A	AU4	U17
ARP23	HP4101	ARS6	S625	ATP35	PV1-35	AU6	GU5
ARP24	220VPT	ARS7	VS24	ATP75	PT6	AU8	U22
ARP25	KT41	ARS8	PM12V	ATP100	4069A	AW2	7475
ARP26	KT44	ARTH2	ECH35	ATS25	807	AW3	S130
ARP33	MSP4	ARTP1	TP22	ATS25A	807	AW4	STV280/40
ARP34	EF39	ARTP2	TP25	ATS70	4282B	AW5	ME41
ARP35	EF50	AT20	MZ05-20	AU1	U18	AW6	EM31
ARP36	SP61	AT35	DET25	AU3	U12-14		

## ROYAL NAVY VALVES WITH COMMERCIAL EQUIVALENTS

NGT1	DPO	NR44	AC044	NR72	N43	NT18	DO60
NGT2	GT1C	NR45	VMP4G	NR73	ECC31	NT20	PM256
NGT4	GT1A	NR46	D41	NR74	AC6/Pen	NT36	DA100
NR15	PM3	NR47	PX25	NR75	2×AC/P4	NT37	4033A
NR15A	PM4DX	NR48	EBC33	NR76	KTZ41	NT38A	PZ1-75
NR16	PM254	NR49	EF36	NR77	EL35	NT39	ACT6
NR16A	PM4DX	NR50	AT4	NR78	6C5	NT40	DET5
NR18	DEQ	NR53	KT42	NR79	Z62	NT58	DET12
NR22	PM14	NR54	AP4	NR81	6K7	NT62	PM24D
NR23	PM14	NR55	4D1	NR82	X65	NT65A	PZ1-35
NR26	MHL4	NR56	DO30	NR83	6J7	NT82	PM202
NR27	ML4	NR57	ML4	NR84	X41	NU3	U12/14
NR27A	ML4	NR58	244V	NR85	6F6	NU5	RX3-120
NR28	PM2	NR59	KT41	NR86	KTW63	NU12	U18
NR31	MH4	NR60	H42	NR87	AC5/PenDD	NU13	U15
NR35	PD220A	NR61	VW42	NR88	RL18	NU16	GU5
NR37	AC/SG	NR66	D41	NR94	AC/P4	NU17	MU14
NR38	VMS4	NR67	X64	NR95	KT32	NU18	U17
NR39	KT2	NR68	6Q7	NS1	STV280/80	NU20	5Y3
NR41	210VPT	NR69	EM35	NS3	202	NU31	MU2
NR42	LP2	NR70	HP4101	NS4	4713	NU33	SU2150A
NR43	PM24A	NR71	MS/Pen	NS5	304	NU34	HVR2

## ROYAL AIR FORCE VALVES WITH COMMERCIAL EQUIVALENTS

VGT121	T41	VR56	EF36	VR118	KT2	VT60A	807
VGT128	GT1C	VR57	EK32	VR119	DDL4	VT61	RK34
VI77	EM31	VR59	955	VR122	41MXP	VT61A	4074B
VI103	EM35	VR65	SP61	VR123	EF8	VT62	TY1-50
VR18	215SG	VR65A	SP41	VR124	HP4101	VT73	H63
VR19	PM2	VR66	P61	VR125	MS/PenB	VT74	6J7
VR21	210LF	VR67	6J5	VR126	4SH	VT75	KT66
VR22	220PA	VR78	D1	VR129	MS/Pen	VT76	DA41
VR27	210LF	VR82	220TH	VR130	HL23	VT79	KT8
VR28	220VSG	VR83	210VPT	VR136	EF54	VT80	4307A
VR32	220B	VR91	EF50	VR137	EC52	VT81	4052A
VR35	QP21	VR91A	EF50	VR502	KT32	VT88	832
VR37	MH4	VR92	EA50	VR503	KT33C	VT96	5B/502A
VR38	MHL4	VR95	954	VR505	MH41	VT104	PT15
VR40	PX25	VR95A	954	VS68	STV280/40	VT127	Pen46
VR41	PM12M	VR99	X66	VS69	STV280/80	VU29	ESU150
VR43	210PG	VR100	KTW62	VS70	7475	VU39	MU14
VR44	210DDT	VR101	MHLD6	VT20	220P	VU39A	R3
VR45	X56	VR102	BL63	VT23	230XP	VU64	U12/14
VR46	PT25H	VR105	ML6	VT25	DET25	VU71	5U4
VR47	TZ05-20	VR106	9D2	VT45	X56	VU72	GU5
VR49	210SPT	VR107	15D2	VT50	HL2K	VU113	U17
VR53	EF39	VR108	8D2	VT51	Pen220A	VU120	SU2150A
VR54	EB34	VR109	4D1	VT52	EL32	VU134	HVR2
VR55	EBC33	VR117	41MTL	VT60	807		

## WAR-TIME CIVILIAN VALVES WITH COMMERCIAL EQUIVALENTS

BVA211 } BVA214 } BVA215 } BVA216 }	IW4-350 and Equivalents	BVA243 } BVA246 } BVA247 }	EF39 and Equivalents	BVA264 } BVA265 } BVA266 } BVA267 }	EL33 and Equivalents	BVA274 } BVA275 } BVA276 }	ECH35 and Equivalents
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## U.S.A. SERVICE TYPES WITH COMMERCIAL EQUIVALENTS

V.T. No.	Commercial Equivalent	V.T. No.	Commercial Equivalent	V.T. No.	Commercial Equivalent	V.T. No.	Commercial Equivalent
1	WE203A	78	78	134	12A6	203	9003
2	WE205B	80	80	135	12J5GT	204	3C24
4B	211	83	83	135A	12J5	205	6ST7
4C	211SPEC	84	84/6Z4	136	1625	206A	5V4G
5	WE215A	86	6K7	137	1626	207	12AH7GT
6	212A	86A	6K7G	138	1629	208	7B8
7	WX12	86B	6K7GT	139	OD3/VR150	209	12SG7
8	UV204	87	6L7	141	WL531	210	154
17	860	87A	6L7G	143	805	211	6SG7
19	861	88	6R7	144	813	212	958
22	204A	88A	6R7G	145	5Z3	213A	6LSG
24	864	88B	6R7GT	146	1N5GT	214	12H6
25	10	89	89	147	1A7GT	215	6E5
25A	10Y-10SPEC	90	6H6	148	1D8GT	216	816
26	22	90A	6H6GT/G	149	3A8GT	217	811
27	30	91	6J7	150	6SA7	218	100TH
28	24A	91A	6J7GT	150A	6SA7GT	220	250TH
29	27	92	6Q7	151	6A8G	221	3Q5GT
30	01A	92A	6Q7G	151B	6A8GT	222	884
31	31	93	6B8	152	6K6GT	223	1H5GT
33	33	93A	6B8G	152A	6K6G	224	2C34-RK34
34	207	94	6J5	153	12C8Y	225	307A
35	35/51	94A	6J5G	154	814	226	3EP1/1806P1
36	36	94D	6J5GT/G	161	12SA7	227	7184
37	37	95	2A3	162	12SJ7	228	8012
38	38	96	6N7	163	6C8G	229	6SL7GT
39	869	97	5W4	164	1619	230	350A
39A	869A	98	6U5/6G5	165	1624	231	6SN7GT
40	40	99	6F8G	166	371A	232	E1148
41	851	100	807	167	6K8	233	6SR7
42	872	100A	807SPEC	167A	6K8G	234	114B
42A	872A	101	837	168A	6Y6G	235	615
43	845	103	6SQ7	169	12C8	236	836
44	32	104	12SQ7	170	1E5GP	237	957
45	45	105	6SC7	171	1R5	238	956
46	866	106	803	172	1S5	239	1LE3
46A	866A	107	6V6	173	1T4	240	710A
47	47	107A	6V6GT	174	3S4	241	7E5/1201
48	41	107B	6V6G	175	1613	243	7C4/1203A
49	39/44	108	450TH	176	6AB7/1853	244	5U4G
50	50	109	2051	177	1LH4	245	2050
51	841	111	5BP4/1802P4	178	1LC6	246	918
52	45SPEC	112	6AC7/1852	179	1LN5	247	6AG7
54	34	114	5T4	180	3LF4	248	3CP1/1808P1
55	865	115	6L6	181	7Z4	249	1006
56	56	115A	6L6G	182	3B7/1291	250	EF50
57	57	116	6SJ7	183	1R4/1294	251	WL441 Series
58	58	116A	6SJ7GT	184	OB3/VR90	252	923
60	850	116B	6SJ7Y	185	3D6/1299	254	304TH
62	801/801A	117	6SK7	187	575A	255	705A
63	46	117A	6SK7GT	188	7E6	256	GL486
64	800	118	832	189	7F7	257	K-7
65	6C5	119	2X2/879	190	7H7	259	829
65A	6C5G	120	954	191	316A	260	OA3/VR-75
66	6F6	121	955	192	7A4	264	3Q4
66A	6F6G	124	1A5GT	193	7C7	266	1616
67	30SPEC	125	1C5GT	194	7J7	267	WL578
68	6B7	126	6X5	195	1005	268	12SC7
69	6D6	126A	6X5G	196	6W5G	269	717A
70	6F7	126B	6X5GT	197A	5Y3GT/G	277	417
72	842	128	1630	198A	6G6G	279	GY2
73	843	129	304TL	199	6S57	282	ZG489
74	5Z4	130	250TL	200	OC3/VR105	286	832A
75	75	131	12SK7	201	25L6	287	815
76	76	132	12K8	201C	25L6GT/G	288	12SH7
77	77	133	12SR7	202	9002	289	12SL7GT



TYPE	REPLACEMENT	MAKER	REMARKS
3/6A	65K	Cossor	Change base.
	65K/2	Cossor	Change base, ion-trap tube.
	TA15	Emitron	Tetrode tube, A <sup>1</sup> 250 v, aluminised, Max. EHT 7 kV, increased focus current.
12XP4-A	6705A	G.E.C.	Change base, aluminised, no ion trap, increased heater rating 6.3 v, 0.5 A, no grey filter.
	7102A	G.E.C.	Change base, aluminised, no ion trap, no grey filter.
	C12F	Brimar	Not aquadag coated, no grey filter.
	C12FM	Brimar	No grey filter.
	MW31-15	Mullard	Not aquadag coated, no grey filter.
	MW31-16	Mullard	No grey filter.
	MW31-17	Mullard	Not aquadag coated, no ion trap, no grey filter.
	MW31-18	Mullard	No ion trap, no grey filter.
	MW31-20	Mullard	Aluminised, no ion trap, not aquadag coated, change base, no grey filter.
	MW31-21	Mullard	Change base, no ion trap, no grey filter.
	MW31-22	Mullard	Aluminised, no ion trap, not aquadag coated, no grey filter.
	MW31-23	Mullard	No ion trap, no grey filter.
	MW31-74	Mullard	Direct replacement.
14KP4-A	14KP4A	Emitron	Direct replacement.
	141K	Cossor	Direct replacement.
	MW36-22	Mullard	Direct replacement.
		European	
	MW36-24	Mullard	Direct replacement.
		European	
15EP4	85K	Cossor	Change base, no aquadag coating, max. EHT 9 kV, increased heater current rating 6.3 v, 0.55 A.
17ASP4	171K	Cossor	Direct replacement.
	172K	Cossor	Pentode tube, connect pin 7 to cathode (pin 11).
	MW43-22	European	EHT 12 kV max.
	MW43-24	European	EHT 12 kV max., grey filter.
	MW43-29	European	EHT 12 kV max., aluminised.
	MW43-43	European	Glass or metal cone, pentode tube, connect pin 7 to cathode (pin 11), grey filter.
	MW43-61	European	Direct replacement.
	MW43-64	Mullard	Grey filter, pentode tube. Connect pin 7 to cathode (pin 11).
		European	
	T908	Eng. Electric	Direct replacement.
	TR17/7	Ferranti	Aluminised, no ion trap, no aquadag coating.
	TR17/8	Ferranti	Aluminised, no ion trap.
65K	65K/2	Cossor	Ion-trap tube.
	3/6A	Emitron	Change base, intended for cathode-modulated designs, max. EHT 4 kv.
	TA15	Emitron	Change base, tetrode tube, A <sup>1</sup> requires 250 v. Increased focus current, aluminised, intended for cathode-modulated designs, max. EHT 7 kV.
65K/2	65K	Cossor	No ion trap.
	3/6A	Emitron	Change base, intended for cathode-modulated designs, max. EHT 4 kV, no ion trap.
	TA15	Emitron	Change base, tetrode tube, A <sup>1</sup> requires 250 v. Increased focus current, aluminised, intended for cathode-modulated designs, no ion trap.
75K	108K	Cossor	Direct replacement.
85K	15EP4	Emitron	Change base, tetrode tube, A <sup>1</sup> = 250 v.
108K	75K	Cossor	Max. EHT 7 kV.
141K	14KP4	Emitron	Direct replacement.
	14KP4A	Emitron	Direct replacement.
	MW36-22	Mullard	Direct replacement.
		European	
171K	MW36-24	European	Direct replacement.
	17ASP4	Emitron	Direct replacement.
	172K	Cossor	Pentode tube, connect pin 7 to cathode (pin 11), grey filter.
	MW43-22	European	EHT 12 kV max.
	MW43-24	European	EHT 12 kV max., grey filter.
	MW43-29	European	EHT 12 kV max., aluminised.
	MW43-43	European	Glass or metal cone, pentode tube, connect pin 7 to cathode (pin 11), grey filter.
	MW43-61	European	Direct replacement.
	MW43-64	Mullard	Pentode tube, connect pin 7 to cathode (pin 11), grey filter.
		European	
	T908	Eng. Electric	Direct replacement.
	TR17/7	Ferranti	Aluminised, no ion trap, no aquadag coating.
	TR17/8	Ferranti	Aluminised, no ion trap.
172K	17ASP4	Emitron	No grey filter.
	171K	Cossor	No grey filter.
	MW43-22	European	No grey filter, EHT 12 kV max.
	MW43-24	European	EHT 12 kV max.
	MW43-29	European	Aluminised, no grey filter, EHT 12 kV max.
	MW43-43	European	Glass or metal cone.
	MW43-61	European	No grey filter.
	MW43-64	Mullard	Direct replacement.
		European	



TYPE	REPLACEMENT	MAKER	REMARKS
6501	T908	Eng. Electric	No grey filter.
	TR17/7	Ferranti	Aluminised, no ion trap, no aquadag coating, no grey filter.
	TR17/8	Ferranti	Aluminised, no ion trap, no grey filter.
	6502	G.E.C.	Aquadag coated.
	6504	G.E.C.	Direct replacement.
	6504A	G.E.C.	Aluminised, aquadag coated.
	MW22-14	Mullard	Change base, tetrode tube, A <sup>1</sup> = 200 v, aquadag coating.
	MW22-14c	Mullard	Change base, tetrode tube, A <sup>1</sup> = 200 v.
	MW22-15	Mullard	Change base, tetrode tube, A <sup>1</sup> = 350 v, increase EHT 9 kV max., ion-trap tube.
	MW22-16	Mullard	As for MW22-15 but with aquadag coating.
6502	MW22-17	Mullard	Change base, tetrode tube, A <sup>1</sup> = 350 v, increase EHT to 9 kV max.
	MW22-18	Mullard	As for MW22-17 but with aquadag coating.
	6504	G.E.C.	Not aquadag coated.
	6504A	G.E.C.	Aluminised.
	MW22-14	Mullard	Change base, tetrode tube, A <sup>1</sup> = 200 v.
	MW22-14c	Mullard	Change base, tetrode tube, A <sup>1</sup> = 200 v, not aquadag coated.
	MW22-15	Mullard	Change base, ion-trap tube, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV max., not aquadag coated.
	MW22-16	Mullard	Change base, ion-trap tube, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV max.
	MW22-17	Mullard	Change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT to 9 kV max., not aquadag coated.
	6503	MW22-18	Mullard
6505A		G.E.C.	Aluminised, aquadag coated.
6504	6502	G.E.C.	Aquadag coated.
	6504A	G.E.C.	Aluminised, aquadag coated.
6504A	MW22-14	Mullard	Aquadag coated, change base, tetrode tube, A <sup>1</sup> = 200 v.
	MW22-14c	Mullard	Change base, tetrode tube, A <sup>1</sup> = 200 v.
	MW22-15	Mullard	Change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT to 9 kV, ion-trap tube.
	MW22-16	Mullard	As for MW22-15 but with aquadag coating.
	MW22-17	Mullard	Change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT to 9 kV.
	MW22-18	Mullard	As for MW22-17 but with aquadag coating.
	6502	G.E.C.	Not aluminised.
	6504	G.E.C.	Not aluminised, not aquadag coated.
	MW22-14	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 200 v.
	MW22-14c	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 200 v, not aquadag coated.
MW22-15	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV, ion-trap tube.	
6505A	MW22-16	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV, ion-trap tube.
	MW22-17	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV, not aquadag coated.
6703A	MW22-18	Mullard	Not aluminised, change base, tetrode tube, A <sup>1</sup> = 350 v. Increase EHT 9 kV.
	6503	G.E.C.	Not aluminised, not aquadag coated.
6704A	6705A	G.E.C.	Direct replacement.
	7102A	G.E.C.	6.3 v, 0.3 A heater.
6705A	6706A	G.E.C.	Direct replacement.
	6703A	G.E.C.	EHT 8 kV max.
6706A	7102A	G.E.C.	6.3 v, 0.3 A heater.
	6704A	G.E.C.	Max. EHT 8 kV.
6901A	T901	Eng. Electric	Increased heater rating 6.3 v, 0.6 A, metal cone, tetrode gun, A <sup>1</sup> = 400 v max.
	T901B	Eng. Electric	Metal cone, tetrode gun, A <sup>1</sup> = 400 v max.
7102A	MW41-1	Mullard	Metal cone, tetrode gun, A <sup>1</sup> = 350 v max.
	6705A	G.E.C.	Increased heater rating, 6.3 v, 0.5 A.
C9A	MW31-74	Mullard	Ion trap tube, grey filter.
	CRM91	Mazda	Direct replacement.
	CRM92-A	Mazda	Direct replacement.
C9B	MW22-3	Mullard	Change base.
	C9B	Brimar	Change base, increased heater rating 2.0 v, 2.5 A.
	CRM91	Mazda	Change base, reduced heater rating 2.0 v, 1.4 A.
	CRM92-A	Mazda	Change base, reduced heater rating 2.0 v, 1.4 A.
C12A	MW22-3	Mullard	Change base, reduced heater rating 2.0 v, 1.2 A.
	C9A	Brimar	Change base, reduced heater rating 2.0 v, 1.4 A.
	CRM121-A	Mazda	Direct replacement.
	CRM121-B	Mazda	Grey filter screen.
	CRM123	Mazda	Aluminised, increase EHT to 10 kV.
C12B	C12B	Brimar	Aluminised, change base, increase EHT to 12 kV, increased heater rating 2.0 v, 2.5 A.
	C12BM	Brimar	As for C12B but with aquadag coating.
	C12D	Brimar	Change base, increased heater rating 2.0 v, 2.5 A.
	C12DM	Brimar	As for C12D but with aquadag coating.
	T12/91	Ferranti	Change base.
	T12/92	Ferranti	Change base, aquadag coated.
	CRM123	Mazda	Change base, max. EHT 10 kV.
	C12BM	Brimar	Aquadag coated.



TYPE	REPLACEMENT	MAKER	REMARKS
C12BM	CRM121B	Mazda	Change base, not aluminised, max. EHT 9 kV, grey filter.
	T12/91	Ferranti	Not aluminised, max. EHT 9 kV.
	T12/92	Ferranti	Not aluminised, aquadag coated, max. EHT 9 kV.
	C12B	Brimar	No aquadag coating.
	CRM123	Mazda	Change base, EHT max. 10 kV, no aquadag coating.
C12D	CRM121B	Mazda	Change base, EHT max. 9 kV, not aluminised, no aquadag coating, grey filter.
	T12/91	Ferranti	Not aluminised, EHT max. 9 kV, no aquadag coating.
	T12/92	Ferranti	Not aluminised, EHT max. 9 kV.
	C12A	Brimar	Change base.
	C12B	Brimar	Aluminised, increase EHT 12 kV.
C12DM	C12BM	Brimar	As for C12B but with aquadag coating.
	C12DM	Brimar	Aquadag coated.
	CRM121-A	Mazda	Change base, max. EHT 7.5 kV.
	CRM121B	Mazda	Change base, grey filter.
	CRM123	Mazda	Change base, aluminised, increase EHT 10 kV.
	T12/91	Ferranti	Max. EHT 9 kV.
	T12/92	Ferranti	Max. EHT, 9 kV, aquadag coated.
	C12A	Brimar	Change base, no aquadag coating.
	C12B	Brimar	Increase EHT 12 kV, no aquadag coating.
	C12BM	Brimar	Increase EHT 12 kV.
C15B C17FM CRM71 CRM91	CRM121-A	Mazda	No aquadag coating.
	CRM121-B	Mazda	Change base, no aquadag coating, max. EHT 7.5 kV.
	CRM123	Mazda	Grey filter, no aquadag coating, change base.
	T12/91	Ferranti	Aluminised, increase EHT to 10 kV, change base.
	T12/92	Ferranti	Max. EHT 9 kV, no aquadag coating.
	CRM151	Mazda	Max. EHT 9 kV.
	CRM171	Mazda	Change base, max. EHT 13 kV.
	MW18-2	Mullard	Not aquadag coated.
	CRM92-A	Mazda	Change base.
	C9A	Brimar	Direct replacement.
CRM92-A	MW22-3	Mullard	Direct replacement.
	C9B	Brimar	Change base.
	CRM91	Mazda	Change base, increased heater rating 2.0 v, 2.5 A.
	C9A	Brimar	Direct replacement.
	MW22-3	Mullard	Direct replacement.
CRM121-A	C9B	Brimar	Change base.
	CRM121B	Mazda	Change base, increased heater rating 2.0 v, 2.5 A.
	CRM123	Mazda	Direct replacement, grey-filter screen.
	C12A	Brimar	Aluminised, increase EHT to 10 kV.
	C12B	Brimar	Direct replacement.
CRM121B	C12BM	Brimar	Aluminised, change base, increase EHT to 12 kV, increased heater current 2.0 v, 2.5 A.
	C12D	Brimar	As for C12B but with aquadag coating.
	C12DM	Brimar	Change base, increased heater current 2.0 v, 2.5 A.
	T12/91	Ferranti	As for C12D but with aquadag coating.
	T12/92	Ferranti	Change base.
	CRM123	Mazda	Change base, aquadag coated.
	C12B	Brimar	Aluminised.
	C12BM	Brimar	Change base, aluminised, increased heater rating 2.0 v, 2.5 A, EHT 12 kV max.
CRM123	T12/91	Ferranti	As C12B but with aquadag coating.
	T12/92	Ferranti	Change base.
	C15B	Brimar	Change base, aquadag coated, not aluminised.
	C17FM	Brimar	Change base, max. EHT 10 kV.
	CRM71	Mazda	Aquadag coated.
CRM151 CRM171 MW18-2 MW22-1	T9/2	Ferranti	Change base.
	T9/3	Ferranti	Change base, max. permissible EHT 6 kV.
	T9/5	Ferranti	Change base, max. permissible EHT 6 kV.
	CRM91	Mazda	Change base, aquadag coated, max. permissible EHT 6 kV.
	CRM92-A	Mazda	Change base.
MW22-3	C9A	Brimar	Change base.
	C9B	Brimar	Change base.
	MW22-16	Mullard	Change base, increased heater rating 2.0 v, 2.5 A.
	MW22-17	Mullard	As for MW22-16 but with ion trap and aquadag coating.
	MW22-18	Mullard	Change base, increase EHT 9 kV max. Increase A <sup>1</sup> to 350 v max.
MW22-5	MW22-16	Mullard	As for MW22-17 but with aquadag coating.
	MW22-17	Mullard	As for MW22-17 but with ion trap and aquadag coating.
	MW22-18	Mullard	Change base, increase A <sup>1</sup> to 350 v max.
MW22-7	MW22-17	Mullard	As for MW22-17 but with aquadag coating.
	MW22-18	Mullard	As for MW22-17 but with aquadag coating.



TYPE	REPLACEMENT	MAKER	REMARKS	
MW22-14	6502	G.E.C.	Change base, triode tube, increased heater current 6.3 v, 0.5 A.	
	6504	G.E.C.	Change base, triode tube, not aquadag coated, increased heater current 6.3 v, 0.5 A.	
	6504A	G.E.C.	Aluminised, change base, triode tube, increased heater current 6.3 v, 0.5 A.	
	MW22-14c	Mullard	Not aquadag coated.	
	MW22-15	Mullard	Ion-trap tube, not aquadag coated, permissible EHT 9 kV, change base.	
	MW22-16	Mullard	Ion-trap tube, permissible EHT 9 kV, change base.	
	MW22-17	Mullard	Not aquadag coated, permissible EHT 9 kV, change base.	
MW22-14c	MW22-18	Mullard	Permissible EHT 9 kV, change base.	
	6502	G.E.C.	Change base, triode tube, aquadag coated, increased heater current 6.3 v, 0.5 A.	
	6504	G.E.C.	Change base, triode tube, increased heater current 6.3 v, 0.5 A.	
	6504A	G.E.C.	Change base, triode tube, aluminised. Aquadag coated, increased heater current 6.3 v, 0.5 A.	
	MW22-14	Mullard	Aquadag coated.	
	MW22-15	Mullard	Ion-trap tube, change base, max. EHT 9 kV.	
	MW22-16	Mullard	Aquadag coated, ion-trap tube, change base, permissible EHT 9 kV.	
MW22-15	MW22-17	Mullard	Change base, max. EHT 9 kV.	
	MW22-18	Mullard	Change base, max. EHT 9 kV, aquadag coated.	
	MW22-16	Mullard	Aquadag coated.	
	MW22-17	Mullard	No ion trap.	
	MW22-18	Mullard	No ion trap, aquadag coated.	
MW22-16	MW22-15	Mullard	Not aquadag coated.	
	MW22-17	Mullard	No ion trap, not aquadag coated.	
MW22-17	MW22-18	Mullard	No ion trap.	
	MW22-15	Mullard	Ion-trap tube.	
	MW22-16	Mullard	Ion-trap tube, aquadag coated.	
MW22-18	MW22-18	Mullard	Aquadag coated.	
	MW22-15	Mullard	Ion-trap tube, not aquadag coated.	
	MW22-16	Mullard	Ion-trap tube.	
MW31-3 } MW31-6 }	MW22-17	Mullard	Not aquadag coated.	
	6703A	G.E.C.	Change base, triode tube, aluminised, aquadag coated, max. EHT 8 kV.	
MW31-14	6705A } 7102A }	G.E.C.	As for 6703A but max. EHT 9 kV.	
	C12E	Brimar	Change base, triode tube, max. EHT = 7 kV.	
	C12F	Brimar	Change base, ion-trap tube, max. EHT = 7 kV.	
	C12FM	Brimar	Change base, ion-trap tube, aquadag coated, max A <sup>1</sup> = 200 v, A <sup>2</sup> 7 kV.	
	MW31-7	Mullard	Change base, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 7 kV.	
	MW31-14	Mullard	Change base, aquadag coated.	
	MW31-14c	Mullard	Change base.	
	MW31-15	Mullard	Change base, ion-trap tube, A <sup>1</sup> 350 v max., A <sup>2</sup> 9 kV max.	
	MW31-16	Mullard	As for MW31-15 but with aquadag coating.	
	MW31-17	Mullard	As for MW31-15 but without ion trap.	
	MW31-18 } MW31-21 }	Mullard	Change base, aquadag coated, A <sup>1</sup> 350 v max., A <sup>2</sup> 9 kV max.	
	MW31-23	Mullard	Change base, aluminised, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
	MW31-20	Mullard	As for MW31-20.	
	MW31-22	Mullard	Change base, grey filter, ion-trap tube, aquadag coated, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
	MW31-74	Mullard	Change base, triode tube, aquadag coated, max. EHT = 8 kV.	
	T12/56	Ferranti	Change base, triode tube, aluminised, increased heater rating 6.3 v, 0.5 A.	
	MW31-14	6703A } 6705A }	G.E.C.	Change base, triode tube, aluminised.
		7102A	G.E.C.	Change base, triode tube, aluminised.
		C12E	Brimar	Change base, triode tube, increased heater rating 6.3 v, 0.5 A, not aquadag coated.
C12F		Brimar	Change base, ion-trap tube, not aquadag coated.	
C12FM		Brimar	Change base, ion-trap tube.	
MW31-14c		Mullard	No aquadag coating.	
MW31-15		Mullard	Change base, no aquadag coating, ion-trap tube, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
MW31-16		Mullard	Change base, ion-trap tube, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
MW31-17		Mullard	Change base, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV, not aquadag coated.	
MW31-18		Mullard	Change base, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
MW31-20		Mullard	Aluminised, no aquadag coating.	
MW31-21		Mullard	Max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
MW31-22		Mullard	Change base, aluminised, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kv, not aquadag coated.	
MW31-23	Mullard	Change base, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.		
MW31-74	Mullard	Change base, ion-trap tube, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV, grey filter.		
MW31-14c	T12/56	Ferranti	Change base, triode tube, increased heater rating 6.3 v, 0.6 A.	
	6703A } 6705A }	G.E.C.	Change base, triode tube, aluminised, aquadag coated, increased heater rating 6.3 v, 0.5 A.	
	7102A	G.E.C.	Change base, triode tube, aluminised, aquadag coated.	
	C12E	Brimar	Change base, triode tube, increased heater rating 6.3 v, 0.5 A.	
	C12F	Brimar	Change base, ion-trap tube.	
	C12FM	Brimar	As for C12F but aquadag coated.	
	MW31-14	Mullard	Aquadag coated.	
	MW31-15	Mullard	Change base, ion-trap tube, max. A <sup>1</sup> = 350 v, A <sup>2</sup> 9 kV.	
	MW31-16	Mullard	As for MW31-15 but aquadag coated.	



TYPE	REPLACEMENT	MAKER	REMARKS
MW31-15	MW31-17	Mullard	Change base, max. $A^1 = 350$ v, $A^2$ 9 kV.
	MW31-18	Mullard	Change base, aquadag coated, max. $A^1 = 350$ v, $A^2 = 9$ kV.
	MW31-20	Mullard	Aluminised, max. $A^1 = 350$ v, $A^2$ 9 kV.
	MW31-21	Mullard	Aquadag coated, max. $A^1 = 350$ v, $A^2$ 9 kV.
	MW31-22	Mullard	Change base, aluminised, max. $A^1 = 350$ v, $A^2$ 9 kV.
	MW31-23	Mullard	Change base, aquadag coated, max. $A^1 = 350$ v, $A^2 = 9$ kV.
	MW31-74	Mullard	Change base, ion-trap tube, aquadag coated, max. $A^1 = 350$ v, $A^2$ 9 kV, grey filter.
	T12/56	Ferranti	Change base, triode tube, aquadag coated, increased heater rating 6.3 v, 0.6 A.
	6705A	G.E.C.	Change base, triode tube, increased heater rating 6.3 v, 0.5 A, aluminised, aquadag coated, no ion trap.
	7102A	G.E.C.	Change base, aluminised, aquadag coated, no ion trap, triode tube.
	C12F	Brimar	Direct replacement.
	C12FM	Brimar	Aquadag coated.
	MW31-16	Mullard	Aquadag coated.
	MW31-17	Mullard	No ion trap.
	MW31-18	Mullard	Aquadag coated, no ion trap.
MW31-20	Mullard	Change base, aluminised, no ion trap.	
MW31-21	Mullard	Change base, aquadag coated, no ion trap.	
MW31-22	Mullard	Aluminised, no ion trap.	
MW31-23	Mullard	Aquadag coated, no ion trap.	
MW31-74	Mullard	Aquadag coated, grey filter.	
6705A	G.E.C.	Change base, triode tube, increased heater rating 6.3 v, 0.5 A, aluminised, no ion trap.	
MW31-17	7102A	G.E.C.	Change base, aluminised, no ion trap.
	C12F	Brimar	Not aquadag coated.
	C12FM	Brimar	Direct replacement.
	MW31-15	Mullard	Not aquadag coated.
	MW31-17	Mullard	No ion trap, not aquadag coated.
	MW31-18	Mullard	No ion trap.
	MW31-20	Mullard	Change base, aluminised, no ion trap, not aquadag coated.
	MW31-21	Mullard	Change base, no ion trap.
	MW31-22	Mullard	Aluminised, no ion trap, not aquadag coated.
	MW31-23	Mullard	No ion trap.
	MW31-74	Mullard	Grey filter.
	6705A	G.E.C.	Change base, triode tube, increased heater rating 6.3 v, 0.5 A, aluminised, aquadag coated.
	7102A	G.E.C.	Change base, aluminised, aquadag coated.
	C12F	Brimar	Ion-trap tube.
	C12FM	Brimar	Ion-trap tube, aquadag coated.
MW31-15	Mullard	Ion-trap tube.	
MW31-16	Mullard	Ion-trap tube, aquadag coated.	
MW31-18	Mullard	Aquadag coated.	
MW31-20	Mullard	Change base, aluminised.	
MW31-21	Mullard	Change base, aquadag coated.	
MW31-22	Mullard	Aluminised.	
MW31-23	Mullard	Aquadag coated.	
MW31-74	Mullard	Ion-trap tube, aquadag coated, grey filter.	
6705A	G.E.C.	Change base, triode tube, increased heater rating 6.3 v, 0.5 A, aluminised.	
7102A	G.E.C.	Change base, triode tube, aluminised.	
MW31-15	Mullard	Not aquadag coated, ion-trap tube.	
MW31-16	Mullard	Ion-trap tube.	
MW31-17	Mullard	Not aquadag coated.	
MW31-20	Mullard	Change base, aluminised, not aquadag coated.	
MW31-21	Mullard	Change base.	
MW31-22	Mullard	Aluminised, not aquadag coated.	
MW31-23	Mullard	Direct replacement.	
MW31-74	Mullard	Ion-trap tube, grey filter.	
C12F	Brimar	Ion-trap tube, not aquadag coated.	
C12FM	Brimar	Ion-trap tube.	
6705A	G.E.C.	Change base, aquadag coated, increased heater rating 6.3 v, 0.5 A.	
7102A	G.E.C.	Change base, aquadag coated.	
C12F	Brimar	Change base, not aluminised, ion-trap tube.	
C12FM	Brimar	Change base, not aluminised, ion-trap tube, aquadag coated.	
MW31-15	Mullard	Change base, not aluminised, ion-trap tube.	
MW31-16	Mullard	Change base, not aluminised, aquadag coated.	
MW31-17	Mullard	Change base, not aluminised.	
MW31-18	Mullard	Change base, not aluminised, aquadag coated.	
MW31-21	Mullard	Not aluminised, aquadag coated.	
MW31-22	Mullard	Change base.	
MW31-23	Mullard	Change base, not aluminised, aquadag coated.	
MW31-74	Mullard	Change base, ion-trap tube, aquadag coated, not aluminised.	
6705A	G.E.C.	Change base, aluminised, increased heater rating 6.3 v, 0.5 A.	
7102A	G.E.C.	Change base, aluminised.	
C12F	Brimar	Change base, not aquadag coated, ion-trap tube.	



TYPE	REPLACEMENT	MAKER	REMARKS
MW31-22	C12FM	Brimar	Change base, ion-trap tube.
	MW31-15	Mullard	Ion-trap tube, not aquadag coated.
	MW31-16	Mullard	Change base, ion-trap tube.
	MW31-17	Mullard	Change base, not aquadag coated.
	MW31-18	Mullard	Change base.
	MW31-20	Mullard	Aluminised, not aquadag coated.
	MW31-22	Mullard	Change base, aluminised, not aquadag coated.
	MW31-23	Mullard	Change base.
	MW31-74	Mullard	Change base, aquadag coated, ion-trap tube, grey filter.
	6705A	G.E.C.	Change base, aquadag coated, increased heater rating 6.3 v, 0.5 A.
	7102A	G.E.C.	Change base, aquadag coated.
	C12F	Brimar	Not aluminised, ion-trap tube.
MW31-23	C12FM	Brimar	Not aluminised, ion-trap tube, aquadag coated.
	MW31-15	Mullard	Ion-trap tube, not aluminised.
	MW31-16	Mullard	Ion-trap tube, not aluminised, aquadag coated.
	MW31-17	Mullard	Not aluminised.
	MW31-18	Mullard	Not aluminised, aquadag coated.
	MW31-20	Mullard	Change base.
	MW31-21	Mullard	Change base, not aluminised, aquadag coated.
	MW21-23	Mullard	Not aluminised, aquadag coated.
	MW21-74	Mullard	Not aluminised, ion-trap tube, aquadag coated.
	6705A	G.E.C.	Change base, aluminised, increased heater rating 6.3 v, 0.5 A.
	7102A	G.E.C.	Change base, aluminised.
	MW31-74	C12F	Brimar
C12FM		Brimar	Ion-trap tube.
MW31-15		Mullard	Ion-trap tube, not aquadag coated.
MW31-16		Mullard	Ion-trap tube.
MW31-17		Mullard	Not aquadag coated.
MW31-18		Mullard	Direct replacement.
MW31-20		Mullard	Change base, aluminised, not aquadag coated.
MW31-21		Mullard	Change base.
MW31-22		Mullard	Aluminised, not aquadag coated.
MW31-74		Mullard	Ion-trap tube, grey filter.
6705A		G.E.C.	Change base, aluminised, no ion trap, increased heater rating 6.3 v, 0.5 A, no grey filter.
MW36-22		7102A	G.E.C.
	12XP4-A	Emitron	Direct replacement.
	C12F	Brimar	Not aquadag coated, no grey filter.
	C12FM	Brimar	No grey filter.
	MW31-15	Mullard	Not aquadag coated, no grey filter.
	MW31-16	Mullard	No grey filter.
	MW31-17	Mullard	Not aquadag coated, no ion trap, no grey filter.
	MW31-18	Mullard	No ion trap, no grey filter.
	MW31-20	Mullard	Aluminised, no ion trap, not aquadag coated, change base, no grey filter.
	MW31-21	Mullard	Change base, no ion trap, no grey filter.
	MW31-22	Mullard	Aluminised, no ion trap, not aquadag coated, no grey filter.
	MW31-23	Mullard	No ion trap, no grey filter.
MW36-24	14KP4	Emitron	Direct replacement.
	14KP4A	Emitron	Direct replacement.
	141K	Cossor	Direct replacement.
	MW36-24	Mullard	Direct replacement.
MW41-1	14KP4	European	Direct replacement.
	14KP4A	Emitron	Direct replacement.
	141K	Cossor	Direct replacement.
	MW36-22	Mullard	Direct replacement.
MW43-22	T901	Eng. Electric	Increased heater rating 6.3 v, 0.6 A.
	T901B	Eng. Electric	Direct replacement.
MW43-24	6901A	G.E.C.	Triode tube, aluminised, no ion trap, all glass construction.
	MW43-24	European	Grey filter.
	MW43-29	European	Aluminised.
	MW43-43	European	Glass or metal cone, pentode tube, connect pin 7 to cathode (pin 11), grey filter.
	MW43-61	European	Direct replacement.
MW43-29	MW43-64	Mullard	Grey filter, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-22	European	No grey filter.
	MW43-29	European	Aluminised, no grey filter.
	MW43-43	European	Glass or metal cone, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-61	European	No grey filter.
MW43-29	MW43-64	Mullard	Pentode tube, connect pin 7 to cathode (pin 11).
	MW43-22	European	Not aluminised.
	MW43-24	European	Not aluminised, grey filter.



TYPE	REPLACEMENT	MAKER	REMARKS
<b>MW43-43</b> (Glass)	MW43-43	European	Pentode tube, connect pin 7 to cathode (pin 11), grey filter, not aluminised.
	MW43-61	European	Not aluminised.
	MW43-64	European	Grey filter, not aluminised, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-22	European	Direct replacement.
	MW43-24	European	Grey filter.
	MW43-29	European	Aluminised.
<b>MW43-61</b>	MW43-61	European	Direct replacement.
	MW43-64	European	EHT 12 kV max., grey filter.
	MW43-22	European	Aluminised.
	MW43-24	European	Glass or metal cone, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-43	European	Pentode tube, connect pin 7 to pin 11, grey filter.
	MW43-64	Mullard	
<b>MW43-64</b>	17ASP4	Emitron	No grey filter.
	171K	Cossor	No grey filter.
	172K	Cossor	Direct replacement.
	MW43-22	European	No grey filter, EHT 12 kV max.
	MW43-24	European	EHT 12 kV max.
	MW43-29	European	Aluminised, no grey filter, EHT 12 kV max.
	MW43-43	European	Glass or metal cone.
	MW43-61	European	No grey filter.
	T908	Eng. Electric	No grey filter.
	TR17/7	Ferranti	Aluminised, no ion trap, no aquadag coating, no grey filter.
<b>T9/2</b>	TR17/8	Ferranti	Aluminised, no ion trap, no grey filter.
	T9/3	Ferranti	Direct replacement.
<b>T9/3</b>	T9/5	Ferranti	Aquadag coated.
	T9/2	Ferranti	Direct replacement.
<b>T9/5</b>	T9/5	Ferranti	Aquadag coated.
	T9/2	Ferranti	No aquadag coating.
<b>T12/2</b>	T9/3	Ferranti	No aquadag coating.
	T12/3	Ferranti	Direct replacement.
	T12/44	Ferranti	Direct replacement.
	T12/54	Ferranti	Aquadag coated.
<b>T12/3</b>	T12/404	Ferranti	Aluminised, increase EHT to 9 kV.
	T12/449	Ferranti	Increase EHT to 9 kV.
	T12/504	Ferranti	Aluminised, aquadag coated, increase EHT 9 kV.
	T12/549	Ferranti	Aquadag coated, increase EHT 9 kV.
	T12/44	Ferranti	Direct replacement.
	T12/54	Ferranti	Aquadag coated.
	T12/404	Ferranti	Aluminised, increase EHT to 9 kV.
	T12/449	Ferranti	Increase EHT to 9 kV.
	T12/504	Ferranti	Aluminised, aquadag coated, increase EHT to 9 kV.
	T12/549	Ferranti	Aquadag coated, increase EHT to 9 kV.
<b>T12/44</b>	T12/3	Ferranti	Direct replacement.
	T12/54	Ferranti	Aquadag coated.
	T12/404	Ferranti	Aluminised, increase EHT to 9 kV.
	T12/449	Ferranti	Increase EHT to 9 kV.
<b>T12/54</b>	T12/504	Ferranti	Aluminised, aquadag coated, increase EHT to 9 kV.
	T12/549	Ferranti	Aquadag coated, increase EHT to 9 kV.
	T12/3	Ferranti	No aquadag coating.
	T12/44	Ferranti	No aquadag coating.
	T12/404	Ferranti	Aluminised, increase EHT to 9 kv, no aquadag coating.
	T12/449	Ferranti	Increase EHT to 9 kv, no aquadag coating.
<b>T12/91</b>	T12/504	Ferranti	Aluminised, increase EHT to 9 kV.
	T12/549	Ferranti	Increase EHT to 9 kV.
	CRM121B	Mazda	Change base.
	CRM123	Mazda	Change base, aluminised.
<b>T12/92</b>	C12B	Brimar	Aluminised, increase EHT 12 kV.
	C12BM	Brimar	As for C12B but with aquadag coating.
	T12/92	Ferranti	Aquadag coated.
	CRM121B	Mazda	Change base, no aquadag coating.
	CRM123	Mazda	Aluminised, change base, no aquadag coating.
	C12B	Brimar	Aluminised, increase EHT 12 kV, no aquadag coating.
<b>T12/404</b>	C12BM	Brimar	Aluminised, increase EHT 12 kV.
	T12/91	Ferranti	No aquadag coating.
	T12/449	Ferranti	Not aluminised.
<b>T12/449</b>	T12/504	Ferranti	Aquadag coated.
	T12/549	Ferranti	Not aluminised, aquadag coated.
	T12/404	Ferranti	Aluminised.
	T12/504	Ferranti	Aluminised, aquadag coated.
	T12/549	Ferranti	Aquadag coated.



TYPE	REPLACEMENT	MAKER	REMARKS
T12/504	T12/404	Ferranti	No aquadag coating.
	T12/449	Ferranti	Not aluminised, no aquadag coating.
	T12/549	Ferranti	Not aluminised.
T12/549	T12/404	Ferranti	Aluminised, no aquadag coating.
	T12/449	Ferranti	No aquadag coating.
	T12/504	Ferranti	Aluminised.
T901	T901B	Eng. Electric	Decreased heater rating 6.3 v, 0.3 A.
	MW41-1	Mullard	Decreased heater rating 6.3 v, 0.3 A.
	6901A	G.E.C.	Decreased heater rating 6.3 v, 0.3 A, triode tube, aluminised, no ion trap, all glass construction.
T901B	T901	Eng. Electric	Increased heater rating 6.3 v, 0.6 A.
	MW41-1	Mullard	Direct replacement.
	6901A	G.E.C.	Triode tube, aluminised, no ion trap, all glass construction.
T908	17ASP4	Emitron	Direct replacement.
	171K	Cossor	Direct replacement.
	172K	Cossor	Grey filter, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-22	European	EHT 12 kV max.
	MW43-24	European	EHT 12 kV max., grey filter.
	MW43-29	European	Aluminised, EHT 12 kV max.
	MW43-43	European	Glass or metal cone, grey filter, pentode tube, connect pin 7 to cathode (pin 11).
	MW43-61	European	Direct replacement.
	MW43-64	Mullard	Grey filter, pentode tube, connect pin 7 to cathode (pin 11).
		European	
TA15	TR17/7	Ferranti	No aquadag coating, aluminised, no ion trap.
	TR17/8	Ferranti	Aluminised, no ion trap.
	65K/2	Cossor	Not aluminised, ion trap tube, max. EHT 6 kV.
TR14/4	TR14/12		Change base, no aquadag coating.
	TR14/13		Change base.
TR14/12	TR14/4		EHT 12 kV max., aquadag coated, change base.
	TR14/13		Aquadag coated.
TR14/13	TR14/4		EHT 12 kV max., change base.
	TR14/12		No aquadag coating.
TR17/7	MW43-29	European	EHT 12 kV max., ion trap tube, aquadag coated.
TR17/8	TR17/8	Ferranti	Aquadag coated.
	MW43-29	European	Max. EHT 12 kV, ion trap tube.
	TR17/7	Ferranti	Not aquadag coated.

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