

RADIATRON

6J7-G

TRIPLE-GRID DETECTOR AMPLIFIER

Types 57, 6J7-G & 1603 are similar electrically apart from the heater rating

6J7-G
SHEET 1

Heater— Coated Unipotential Cathode
 Voltage 6.3 a-c or d-c volts
 Current 0.3 amp.

Direct Interelectrode Capacitances :

Pentode Connection^oTriode Connection^o

Grid to Plate 0.007 max.

Grid to Plate 1.8 pF

Input 4.6

Grid to Cathode 2.6 pF

Output 12.0

Plate to Cathode 17.0 pF

Maximum Overall Length 4-15/32"

Maximum Seated Height 5-29/32"

Maximum Diameter 1-9/16"

Bulb ST-12

Cap Skirted Miniature

Base Small Shell Octal 7-Pin

Pin 1 - Internal shield

Pin 5 - Suppressor

Pin 2 - Heater

Pin 7 - Heater

Pin 3 - Plate

Pin 8 - Cathode

Pin 4 - Screen

Cap - Grid

Mounting Position Any



BOTTOM VIEW (G-7E)

Maximum Ratings are Design-Centre Values.

A-F AMPLIFIER - CLASS A1.

Plate Voltage	300 max. volts
Screen Voltage	250 max. volts
Screen Supply Voltage	300 max. volts
Grid Voltage	0 min. volts
Plate Dissipation	1.4 max. watts
Screen Dissipation	0.35 max. watt
Typical Operation:	
Plate Voltage	100 250 volts
Screen Voltage	100 100 volts
Grid Voltage A	-3 -3 volts
Suppressor	Connected to cathode at socket
Plate Resistance	1.0 + megohm
Transconductance	1188 1225 μmhos
Grid Bias (approx.) Δ	-7 -7 volts
Plate Current	2.0 2.0 mA.
Screen Current	0.5 0.5 mA.

PENTODE POWER AMPLIFIER

Plate Voltage	300 max. volts
Screen Voltage	250 max. volts
Screen Supply Voltage	300 max. volts
Grid Voltage	0 min. volts
Plate Dissipation	1.4 max. watts
Screen Dissipation	.35 max. watt
Typical Operation:	
Plate Voltage	250 250 volts
Screen Voltage	100 175 volts
Grid Voltage A	-2.5 -4 volts
Suppressor	Connected to cathode at socket
Cathode Bias Resist. ^{oo}	600 440 ohms
Peak A-F Grid Volts	2.5 4 volts
Zero-Sig. Plate Current	2.8 7.5 mA.
Max.-Sig. Plate Current	3.3 - mA.
Zero-Sig. Screen Current	0.7 1.8 mA.
Max.-Sig. Screen Current	0.9 - mA.
Plate Resistance	+ ohms
Transconductance	1870 (approx.) - μmhos
Load Resistance	56000 25000 ohms
Max.-Signal Power Output	0.35 0.65 watt

^o With close fitting shield connected to cathode.^{oo} Screen and suppressor connected to plate at the socket; without shield-can.

For other footnotes see back of sheet.

6J7-G

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TRIODE POWER AMPLIFIER*

Plate Voltage		250 max. volts	
Grid Voltage		0 min. volts	
Plate & Screen Dissipation (total)		1.75 max. watts	
Typical Operation:			
Plate Voltage	180	250	volts
Grid Voltage ^Δ	-5.5	-8.0	volts
Cathode Bias Resistor ^{ΔΔ}	1000	1830	ohms
Zero-Signal Plate Current	5.5	6.5	mA.
Amplification Factor	20	20	
Plate Resistance	11000	10500	ohms
Transconductance	1800	1900	μmhos
Load Resistance	25000	22000	ohms
Second Harmonic Distortion	5	5	%
Power Output	0.115	0.275	watt

DETECTOR

Typical Operating Conditions as Biased Detector:

Plate Supply Voltage *	100	100	250	250	volts
Screen Voltage	12	30	50	100	volts
Grid Voltage ^Δ	-1.2	-1.5	-2.0	-4.3	volts
Cathode Bias Resistor	18000	10000	3000	10000	ohms
Suppressor	Connected to Cathode at socket				
Zero-Sig. Cathode Cur.	0.065	0.185	0.55	0.45	mA.
Plate Load Resistor	1.0	0.25	0.25	0.5	megohm
Coupling Condenser	0.01	0.01	0.05	0.05	μF
Grid Resistor ^{ΔΔ}	1.0	0.5	0.25	0.25	megohm
R-F Signal (RMS) ^{ΔΔ}	1.05	1.6	1.15	1.37	volts

In circuits where the cathode is not directly connected to the heater the potential difference between heater and cathode should be kept as low as possible.

Δ The grid circuit resistance should not exceed 1 megohm as a pentode or triode power amplifier or 3 megohms as a conventional r-f or i-f amplifier. Where the circuit constants are such that the plate current cannot exceed 1mA, the grid circuit resistance may be as high as 10 megohms; for higher values of grid circuit resistance it is essential to operate with reduced heater voltage.

† Greater than 1 megohm.

Δ For cathode current cut-off.

* The voltage at the plate will be the "Plate Supply Voltage" minus the voltage drop across the plate load resistor caused by the plate current.

ΔΔ For the following valve.

ΔΔ For these signal values modulated 20% the voltage output under each set of conditions is 17 peak volts at the grid of the following amplifier. This value is sufficient to ensure full audio output from a type 6F6-G (class A pentode service) with 250 volts on the plate.

• Screen and suppressor connected to plate.

ΔΔ The requisite negative bias may be obtained from an external source or, alternatively, may be derived from a cathode bias resistor of the stated value. For this particular service the type of bias has negligible effect on the operation.

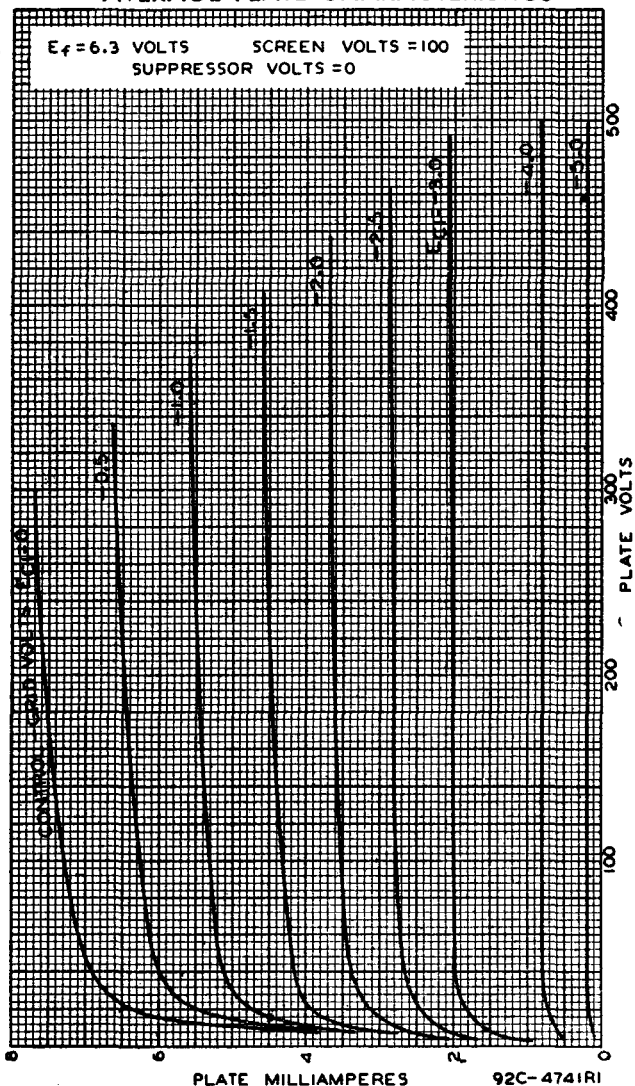
For recommended operating conditions as a resistance-coupled a-f voltage amplifier refer to sheet headed "Resistance-Coupled Pentodes."

← Indicates a change.

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6J7-G

AVERAGE PLATE CHARACTERISTICS

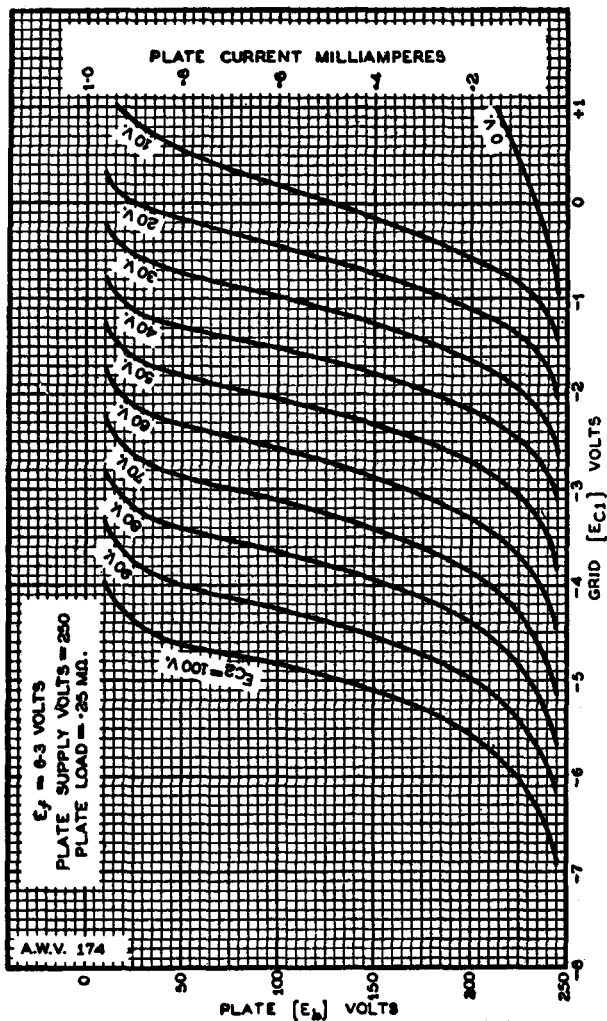


6J7-G

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6J7-G

AVERAGE DYNAMIC CHARACTERISTICS

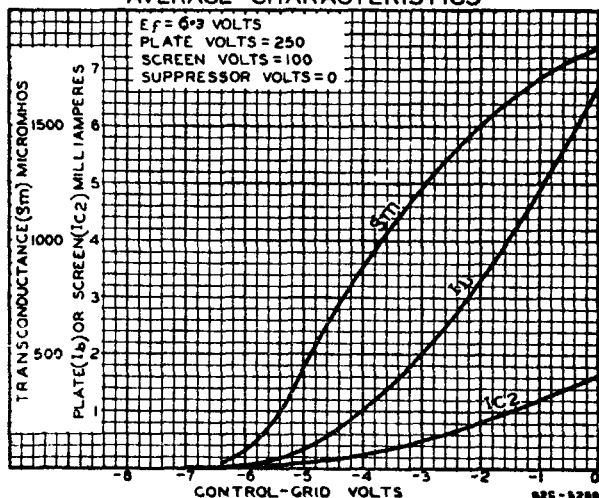


RADIOTRON

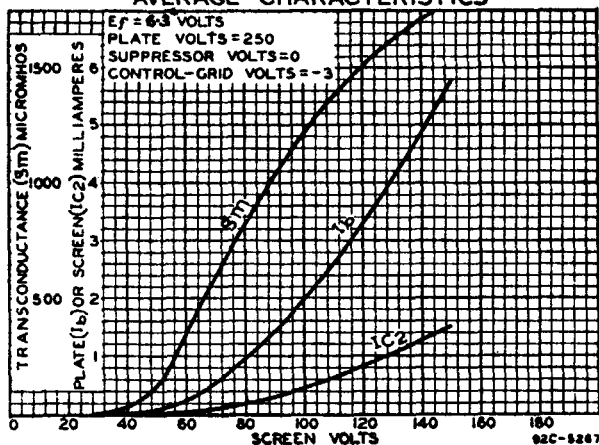
6J7-G

6J7-G
SHEET 3

AVERAGE CHARACTERISTICS



AVERAGE CHARACTERISTICS



AMALGAMATED WIRELESS VALVE Co. PTY. LTD.

MAY, 1945

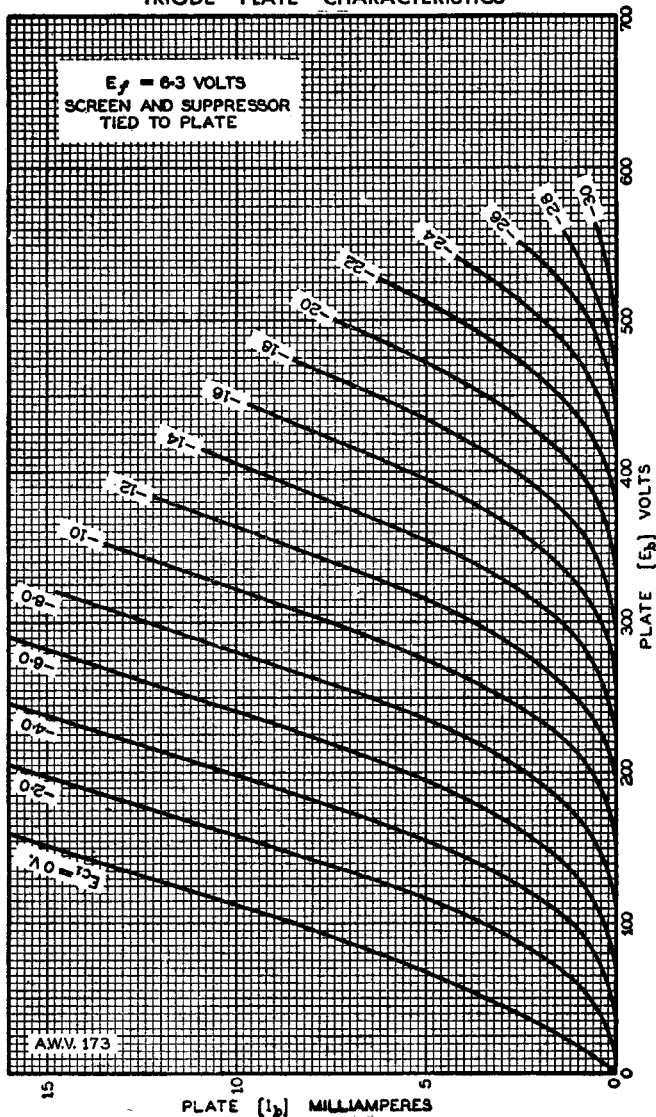
SYDNEY, AUSTRALIA

6J7-G

RADIOTRON

6J7-G

TRIODE PLATE CHARACTERISTICS



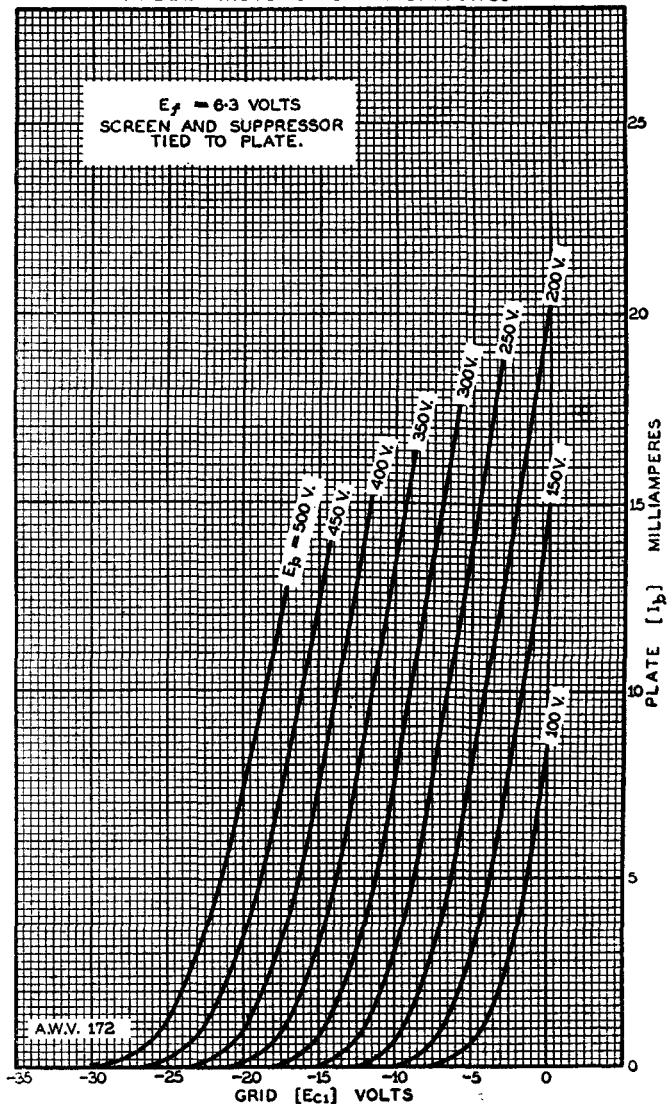
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6J7-G

TRIODE MUTUAL CHARACTERISTICS

6J7-G
SHEET 4

$E_f = 6.3$ VOLTS
SCREEN AND SUPPRESSOR
TIED TO PLATE.



A.W.V. 172

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

MAY, 1945

SYDNEY, AUSTRALIA