Superseding Radiotron 6J7, 6J7-G Data Sheet, issued May 1940

RADIOTRON
6J7-G
TRIPLE-GRID DETECTOR AMPLIFIER

Types 37, 6J7-G & 1603 are similar electrically apart from the heater rating

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

Direct Interelectrode Capacitances :

Pentode Connection ○		Triode Connection ●	
Grid to Plate	0.007 max.	Grid to Plate	1.8 μμF
Input	4.6	Grid to Cathode	2.6 μμF
Output	12.0	Plate to Cathode	17.0 μμF

Maximum Overall Length	4-15/32"
Maximum Seated Height	3-29/32"
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-7R)

Maximum Ratings are Design-Centre Values.

R-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		0.55 max.	watt
Typical Operation:			
Plate Voltage	100	250	volts
Screen Voltage	100	100	volts
Grid Voltage ▲	-3	-8	volts
Suppressor	Connected to cathode at socket		
Plate Resistance	1.0	+	megohm
Transconductance	1185	1225	μmhos
Grid Bias (approx.) △	-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		.55 max.	watt
Typical Operation:			
Plate Voltage	250	250	volts
Screen Voltage	100	175	volts
Grid Voltage ▲	-2.5	-4	volts
Suppressor	Connected to cathode at socket		
Cathode Bias Resist.○●	600	440	ohms
Peak A-F Grid Volts	2.5	4	volts
Zero-Sig. Plate Current	2.8	7.8	mA.
Max.-Sig. Plate Current	3.5	-	mA.
Zero-Sig. Screen Current	0.7	1.8	mA.
Max.-Sig. Screen Current	0.9	-	mA.
Plate Resistance	+	-	ohms
Transconductance	1370 (approx.)	-	μmhos
Load Resistance	56000	25000	ohms
Max.-Signal Power Output	0.58	0.68	watt

○ With close fitting shield connected to cathode.
● Screen and suppressor connected to plate at the socket; without shield-can.
For other footnotes see back of sheet.

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.
MAY, 1945 SYDNEY, AUSTRALIA

6J7-G

RADIOTRON

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TRIPLE-GRID DETECTOR AMPLIFIER

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 ▲	-5.5	-8.0		volts
Cathode Bias Resistor ●●	1000	1250		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	0.113	0.275		watt

DETECTOR

Typical Operating Conditions as Biased Detector:

Plate Supply Voltage *	100	100	250	250	volts
Screen Voltage	12	50	50	100	volts
Grid Voltage ▲	-1.2	-1.6	-2.0	-4.3	volts
Cathode Bias Resistor	18000	10000	8000	10000	ohms
Suppressor	Connected to Cathode at socket				
Zero-Sig.Cathode Cur.	0.053	0.183	0.65	0.43	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 oo	1.0	0.5	0.25	0.25	megohm
R-F Signal (RMS) ▲▲	1.06	1.6	1.18	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.

▲ 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.

△ 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.

oo For the following valve.

▲▲ 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.

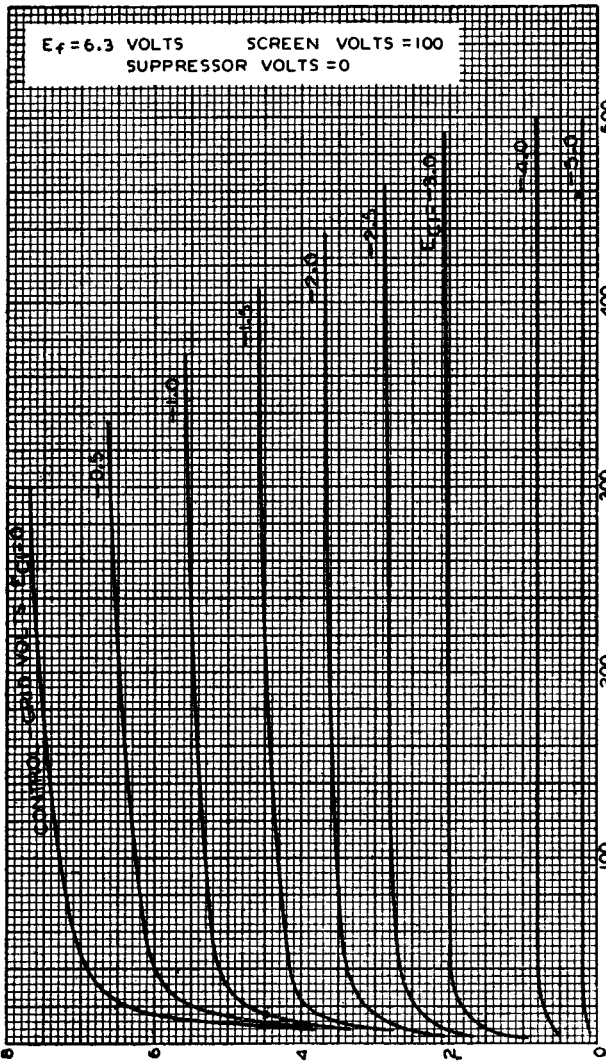
● Screen and suppressor connected to plate.

●● 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.

RADIOTRON
6J7-G
AVERAGE PLATE CHARACTERISTICS



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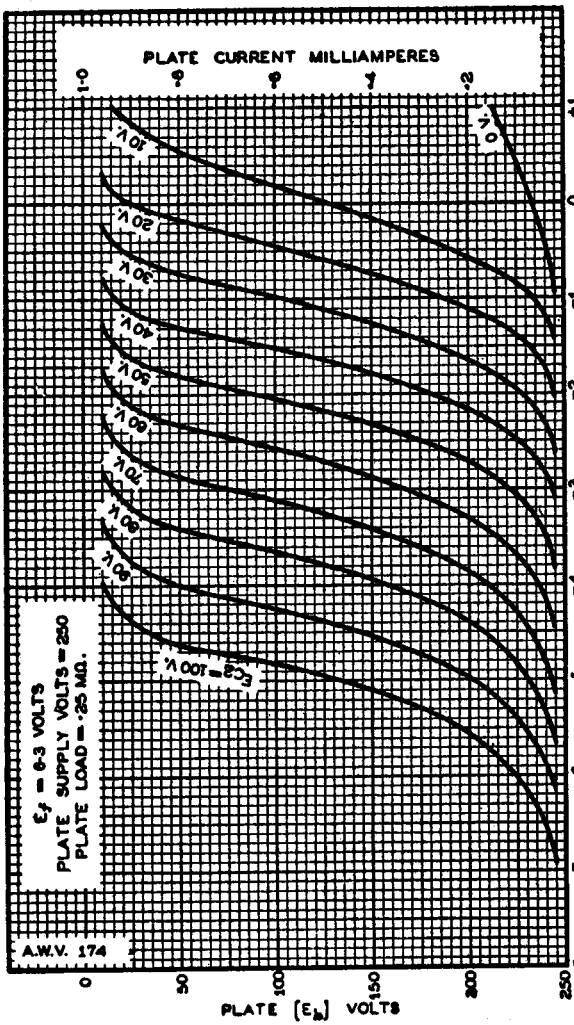
AVERAGE DYNAMIC CHARACTERISTICS



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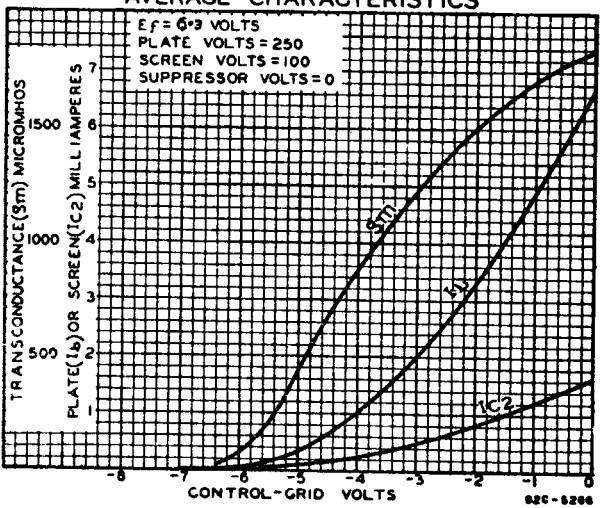
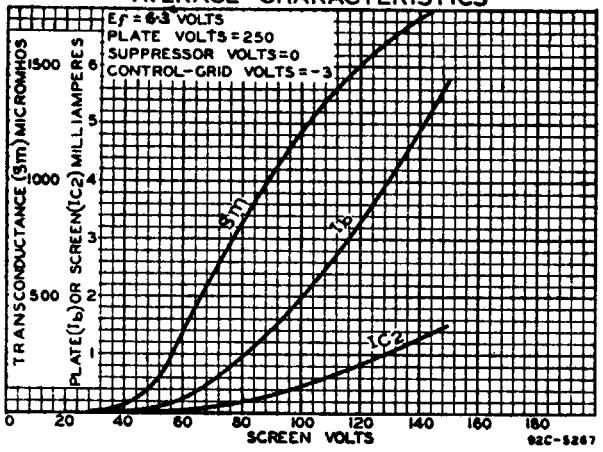
AVERAGE CHARACTERISTICS



AVERAGE CHARACTERISTICS



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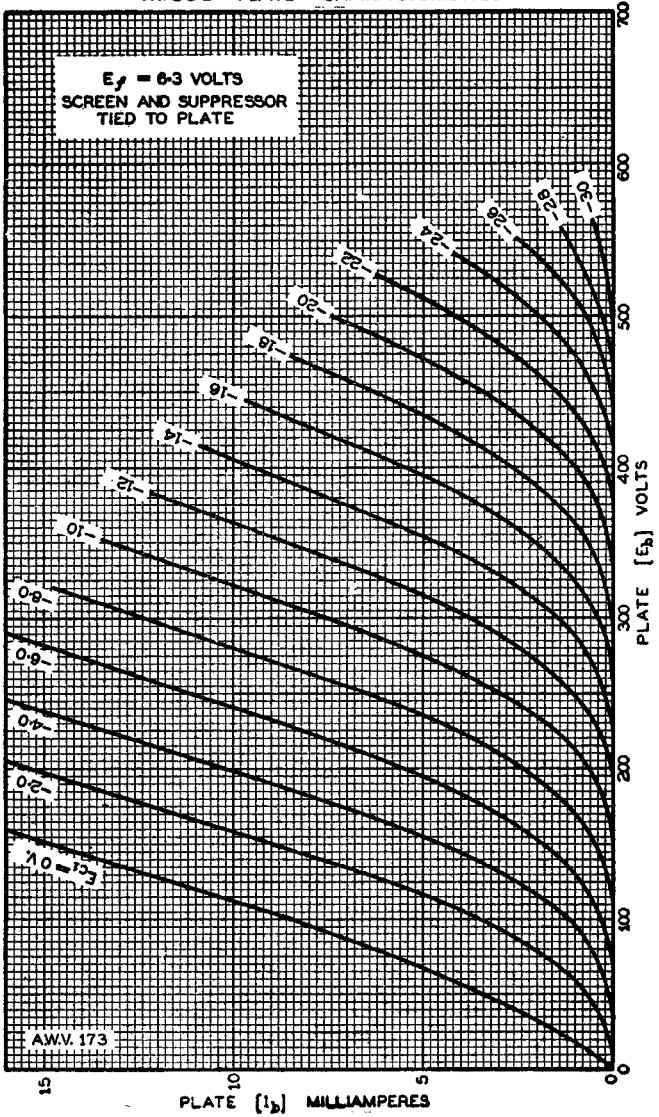
TRIODE PLATE CHARACTERISTICS

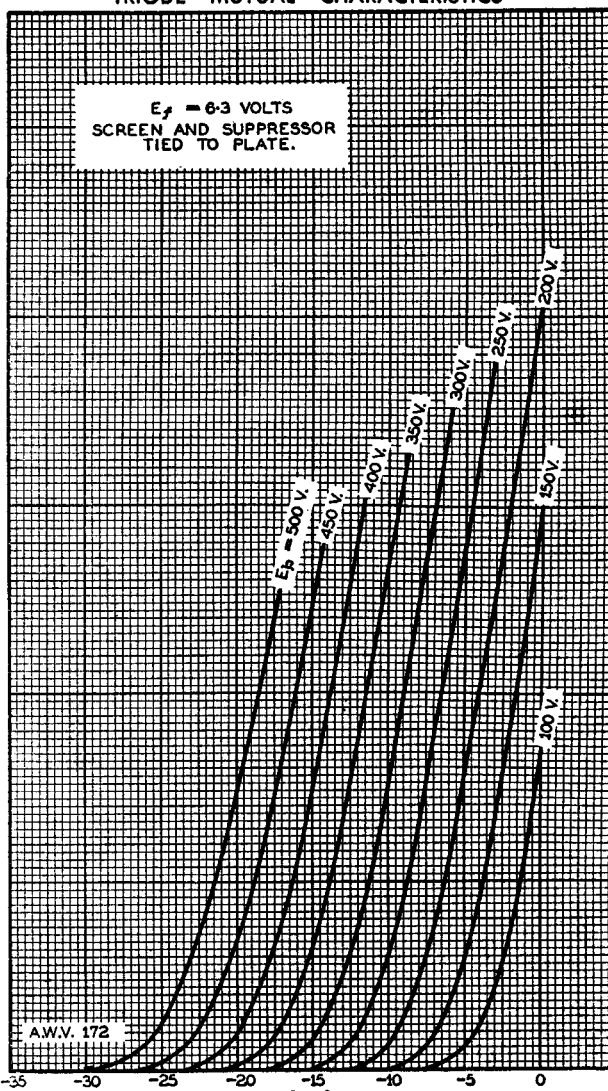


RADIOTRON

6J7-G

6J7-G SHEET 4

TRIODE MUTUAL CHARACTERISTICS



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