

**6J7**

**Description and Rating**

**RADIO-FREQUENCY-AMPLIFIER PENTODE**

**GENERAL DESCRIPTION**

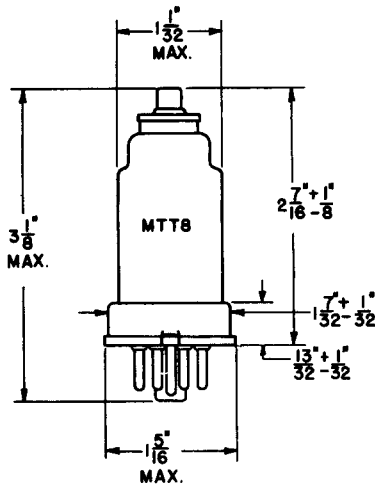
Principal Application: The 6J7 is a heater-cathode type pentode amplifier tube with a sharp cut-off characteristic and is designed for service as a biased detector or high-gain amplifier. Except

Cathode: . . . . . Coated Unipotential  
Heater Voltage (A-C or D-C). . . . . 6.3 Volts  
Heater Current: . . . . . 0.3 Ampere  
Envelope: . . . . . MTT-8 Metal Shell  
Base: . . . . . B7-22 Small Wafer Octal 7-Pin Phenolic  
Top Cap: . . . . . Cl-4 Miniature with Wafer

for capacitances the electrical ratings and characteristics of the 6J7 are the same as those of the 6J7-G, 6J7-GT and 6C6.

Mounting Position: . . . . . Any  
Direct Interelectrode Capacitances: \*  
Triode ‡ Pentode  
Grid to Plate . . . . . 2.0 . . . . . 0.005 Max  $\mu\mu\text{f}$   
Input . . . . . 5 . . . . . 7 . . . . .  $\mu\mu\text{f}$   
Output . . . . . 14 . . . . . 12 . . . . .  $\mu\mu\text{f}$

**PHYSICAL DIMENSIONS**

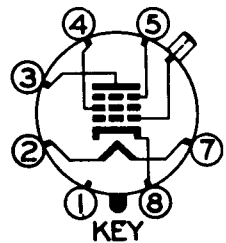


RMA B-4

**TERMINAL CONNECTIONS**

- Pin 1 - Shell and Internal Shield
- Pin 2 - Heater
- Pin 3 - Plate
- Pin 4 - Grid Number 2 (Screen)
- Pin 5 - Grid Number 3 (Suppressor)
- Pin 7 - Heater
- Pin 8 - Cathode
- Top Cap - Grid Number 1

**BASING DIAGRAM**



RMA 7R  
BOTTOM VIEW

**MAXIMUM RATINGS**

	Triode Connection ‡		Pentode Connection		
	Design Center	Absolute	Design Center	Absolute	
Plate Voltage . . . . .	250 . . . . .	275 . . . . .	300 . . . . .	330 . . . . .	Volts
Screen (Grid Number 2) Voltage . . . . .	---	---	125 . . . . .	140 . . . . .	Volts
Screen Supply Voltage . . . . .	---	---	300 . . . . .	330 . . . . .	Volts
External Grid Bias Voltage . . . . .	Never Positive . . . . .		Never Positive . . . . .		
Plate Dissipation . . . . .	1.75 . . . . .	1.93 . . . . .	0.75 . . . . .	0.83 . . . . .	Watts
Screen Dissipation . . . . .	---	---	0.10 . . . . .	0.11 . . . . .	Watt
D-C Heater-Cathode Voltage . . . . .	90 . . . . .	100 . . . . .	90 . . . . .	100 . . . . .	Volts

‡ With grid number 2 and grid number 3 connected to plate.

\* With shell and internal shield connected to cathode.

## CHARACTERISTICS AND TYPICAL OPERATION

### CLASS A AMPLIFIER

	Triode Connection §		Pentode Connection		
Heater Voltage . . . . .	6.3	6.3	6.3	6.3	Volts
Plate Voltage . . . . .	180	250	100	250	Volts
Screen Voltage . . . . .	180	250	100	100	Volts
Suppressor Voltage . . . . .	180	250	0 <sup>o</sup>	0 <sup>o</sup>	Volts
Grid Bias Voltage ** . . . . .	-5.3	-8	-3	-3	Volts
Amplification Factor . . . . .	20	20	---	---	
Plate Resistance . . . . .	0.0110	0.0105	1.0	>1.0	Megohm
Transconductance . . . . .	1800	1900	1185	1225	Micromhos
Grid Bias for Cathode-Current Cutoff . . . . .			-7	-7	Volts
Plate Current . . . . .	5.3	6.5	2.0	2.0	Milliamperes
Screen Current . . . . .	---	---	0.5	0.5	Milliampere

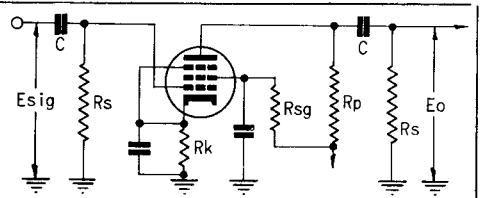
§ With grid number 2 and grid number 3 connected to plate.

\*\* The d-c resistance in the grid circuit should not exceed 1.0 megohm under rated maximum conditions.

<sup>o</sup> Suppressor-grid connected to cathode at socket terminal.

### CLASS A RESISTANCE-COUPLED AMPLIFIER

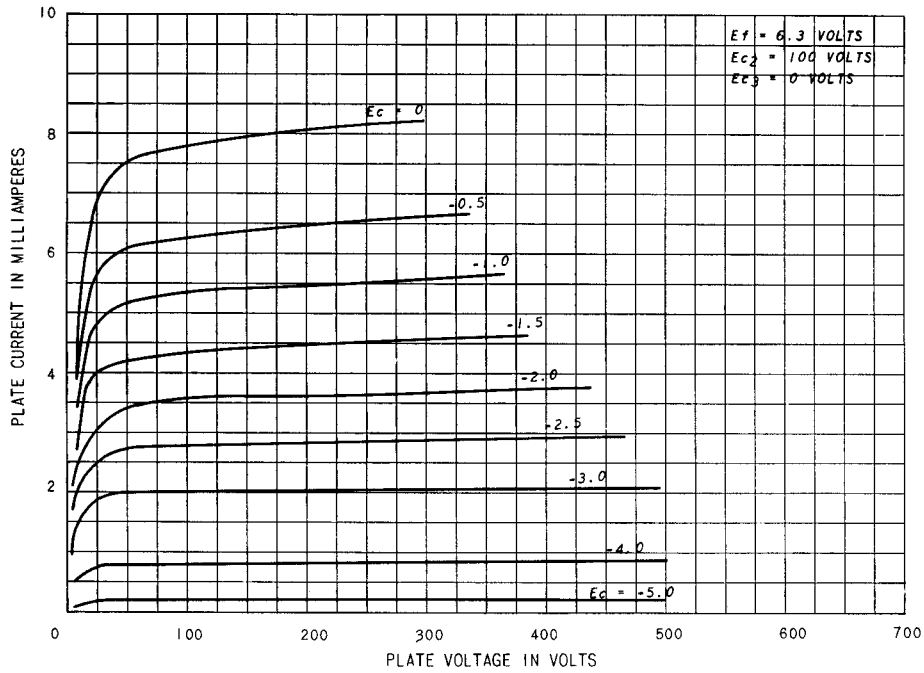
Rp Meg.	Rg1 Meg.	Rs Meg.	Ebb = 90 Volts				Ebb = 180 Volts				Ebb = 300 Volts			
			Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo
0.10	*	0.10	1100	.39	40	16	910	.43	50	42	620	.47	60	54
0.10	*	0.24	1100	.43	53	21	820	.47	68	50	560	.51	80	80
0.24	*	0.24	2400	1.0	67	23	1200	1.1	91	40	1000	1.2	102	78
0.24	*	0.51	2700	1.1	82	31	1500	1.2	115	60	1100	1.3	140	100
0.51	*	0.51	4700	2.2	92	28	2400	2.4	130	44	1600	2.4	157	72
0.51	*	1.0	5100	2.4	116	29	3000	2.7	160	55	2000	3.0	239	95
0.24	10	0.24	---	1.2	71	4.5	---	1.3	112	20	---	1.3	130	39
0.24	10	0.51	---	1.3	86	10	---	1.5	138	35	---	1.5	172	52
0.51	10	0.51	---	2.4	96	6.5	---	2.7	145	29	---	2.7	185	40
0.51	10	1.0	---	2.7	122	11	---	3.0	178	40	---	3.0	280	54



Note: Coupling capacitors (C) should be adjusted to give desired frequency response. Rk and Rsg should be adequately by-passed.

Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data generator impedance is negligible. \* Value of Rg1 is non-critical.

AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

TRIODE CONNECTION

