

*Excellence in Electronics***TYPE
6GC6
12GC6**

The 6GC6 is a heater-cathode type Beam Pentode designed for use as a horizontal deflection amplifier in television receivers. The 6GC6 has extremely high perveance, such that the design of wide-angle deflection systems is made possible without the necessity of using an expensive deflection amplifier tube.

Except for heater characteristics, the 12GC6 is identical to the 6GC6. The 12GC6 has the controlled heater warm-up characteristic which makes it especially suited for use in series-string television receivers.

MECHANICAL DATA

ENVELOPE: T-12 Glass

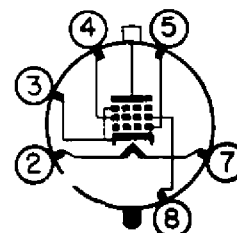
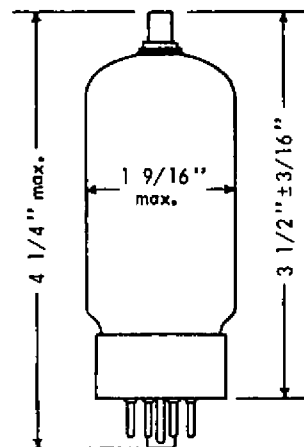
BASE: Short Medium Octal with External Barriers JEDEC #B6-122

TOP CAP: Skirted Miniature-JEDEC C1-3

TERMINAL CONNECTIONS:

Pin 1 No Pin	Pin 5 Grid #1
Pin 2 Heater	Pin 6 No Pin
Pin 3 Cathode; Beam Plates	Pin 7 Heater
Pin 4 Screen-Grid #2	Pin 8 Screen-Grid #2
	Cap Plate

MOUNTING POSITION: Any



BOTTOM VIEW

8X

ELECTRICAL DATA**HEATER CHARACTERISTICS:**

	6GC6	12GC6
Heater Voltage	6.3	12.6 volts
Heater Current	1.2	0.6 amp.
Heater-Cathode Voltage		
Heater Negative with Respect to Cathode		
Total DC and Peak	200	200 volts
Heater Positive with Respect to Cathode		
DC	100	100 volts
Total DC and Peak	200	200 volts
Heater Warm-Up Time *		11 sec.

DIRECT INTERELECTRODE CAPACITANCES: (pfd.)

Grid #1 to Plate: (g1 to p)	0.55
Input: g1 to (h+k+g2+b.p.)	15
Output: p to (h+k+g2+b.p.)	7.0

**** DESIGN MAXIMUM RATINGS—HORIZONTAL DEFLECTION AMPLIFIER: ♦**

Plate Supply Voltage (boost+DC power supply)	770 volts
Grid #2 Voltage	220 volts
Plate Dissipation*	17.5 watts
Grid #2 Dissipation	4.5 watts
Average Cathode Current	175 ma.
Peak Cathode Current	550 ma.
Peak Positive Plate Voltage	6500 volts
Peak Negative Plate Voltage	1500 volts
Peak Negative Grid #1 Voltage	330 volts
Grid #1 Circuit Resistance	1.0 meg.
Bulb Temperature (at hottest point)	220 °C

AVERAGE CHARACTERISTICS:

Plate Voltage	250 volts
Grid #2 Voltage	150 volts
Grid #1 Voltage	-22.5 volts
Plate Current	75 ma.
Grid #2 Current	2.4 ma.
Triode Amplification Factor A	4.1

Tentative Data

RECEIVING TUBE DIVISION

RAYTHEON COMPANY



ELECTRICAL DATA

AVERAGE CHARACTERISTICS: (cont'd.)

Transconductance	6600 μ mhms
Plate Resistance	20,000 ohms
Grid #1 Voltage (approx.) for $I_b = 1$ ma. (approx.)	-46 volts
Zero-Bias: With $E_b = 60$ volts, and $E_{c2} = 150$ V (instantaneous values)	
Plate Current	345 ma.
Grid #2 Current	30 ma.
Cutoff: For $I_b = 1$ ma. with $E_b = 5000$ v. and $E_{c2} = 150$ v. (Approx. value)	-100 volts

♦ For operation in a 525 line, 30-frame system as described in "Standards of Good Engineering Practice for Television Broadcasting Stations; Federal Communications Commission." The duty cycle of the voltage pulse not to exceed 15% of a scanning cycle.

● In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.

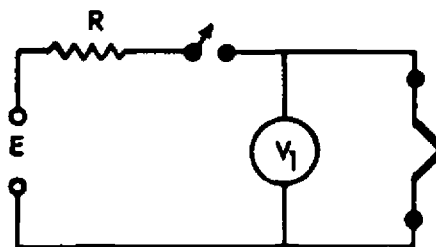
▲ $E_b = E_{c2} = 150$ Volts.

* * Design—Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron device of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions. The device manufacturer chooses these values to provide acceptable serviceability of the device taking responsibility for the effects of changes in operating conditions due to variations in device characteristics. The equipment manufacturer should design so that initially and throughout life no design—maximum value for the intended service is exceeded with a bogey device under the worst probable operating conditions with respect to supply—voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.

* Heater warm-up time is defined as the time required in the circuit shown to the right, for the voltage across the heater terminals to increase from zero to the heater test voltage (V_1).

FOR TYPE:

$E =$	12GC6 50 volts (RMS or DC)
$V_1 =$	10.0 volts (RMS or DC)
$R =$	63 ohms



Heater of tube
Under test

RECEIVING TUBE DIVISION

RAYTHEON COMPANY

55 CHAPEL ST., NEWTON 58, MASS.