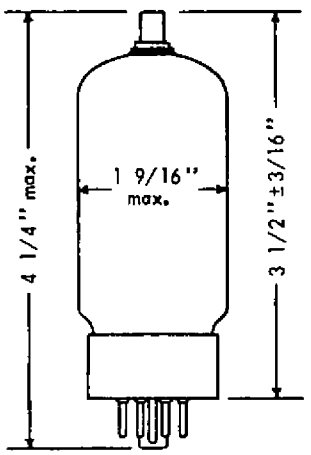
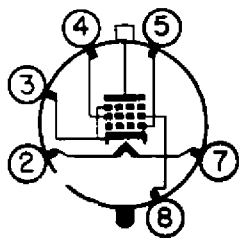
Excellence in Electronics

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.





BOTTOM VIEW

8JX

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

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: (μμfd.)

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 Δ	4.1	

Tentative Data

Printed in U.S.A.

RECEIVING TUBE DIVISION

RAYTHEON COMPANY

55 CHAPEL ST., NEWTON 58, MASS.

from JEDEC release #2644, Nov. 23, 1959

ELECTRICAL DATA

AVERAGE CHARACTERISTICS : (cont'd.)

Transconductance	6600 μmhos
Plate Resistance	20,000 ohms
Grid #1 Voltage (approx.) for Ib= 1 ma. (approx.)	−46 volts
Zero-Bias: With Eb= 60 volts, and Ec2= 150V (instantaneous values)	
Plate Current	345 ma.
Grid #2 Current	30 ma.
Cutoff: For Ib= 1 ma. with Eb= 5000v. and Ec2= 150v. (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.*

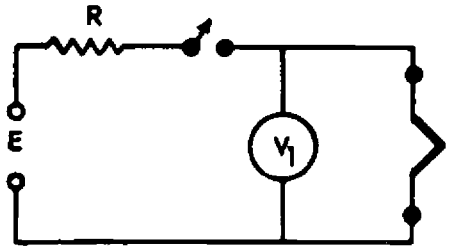
● *In stages operating with grid leak bias, an adequate cathode bias resistor or other suitable means is required to protect the tube in the absence of excitation.*

▲ *Eb= Ec2= 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 :	*12GC6*
E=	*50 volts (RMS or DC)*
V_1=	*10.0 volts (RMS or DC)*
R=	*63 ohms*



Heater of tube Under test