

## Beam Power Tube

T12 Novar Type

High Perveance Beam Power Tube

For Horizontal-Deflection Amplifier

Service in Low B+ Color-TV Receivers

■ Plate Dissipation = 33 W      ■ RCA Dark Heater

■ Peak Cathode Current = 1400 mA

## ELECTRICAL CHARACTERISTICS — Bogey Values

Heater Voltage, ac or dc . . . . .	$E_h$	6.3	V
Heater Current . . . . .	$I_h$	2.85	A
Direct Interelectrode Capacitances: <sup>a</sup>			
Grid No. 1 to plate . . . . .	$c_{g1-p}$	1.0	pF
Input: G1 to (K, G3, G2, H) . . .	$c_i$	40	pF
Output: P to (K, G3, G2, H) . . .	$c_o$	16	pF

For the following characteristics, see Conditions below:

Amplification Factor

(Triode Connection)<sup>b</sup> . . .  $\mu$       —      —      —      4<sup>c</sup>

Plate Resistance

(Approx.) . . . . .  $r_p$       —      —      —      6000       $\Omega$ Transconductance . . . . .  $g_m$       —      —      —      14000       $\mu\text{mho}$ DC Plate Current . . . . .  $I_b$       —      1100<sup>d</sup>      750<sup>d</sup>      125      mADC Grid-No. 2 Current . . .  $I_{c2}$       —      110<sup>d</sup>      42<sup>d</sup>      3.3      mA

Cutoff DC Grid-No. 1

Voltage for  $I_b = 1$  mA . .  $E_{c1(c0)}$       -125      —      0      -40      V

Conditions:

Heater Voltage . . . . .  $E_h$       ← Bogey Value →      V

Peak Positive-Pulse

Plate Voltage<sup>e</sup> . . . . .  $e_{bm}$       5000      —      —      —      VDC Plate Voltage . . . . .  $E_b$       —      45      60      175      VDC Grid-No. 3 Voltage . .  $E_{c3}$       30      30      30      0      VDC Grid-No. 2 Voltage . .  $E_{c2}$       110      160      110      110      VDC Grid-No. 1 Voltage . .  $E_{c1}$       —      0      0      -21      V

## MECHANICAL CHARACTERISTICS

Envelope . . . . . JEDEC T-12

Top Cap . . . . . Small (JEDEC C1-1)

Base . . . . . Large-Button Novar 9-Pin with Exhaust Tip  
(JEDEC E9-88)

Terminal Connections

(See *TERMINAL DIAGRAM*) . . . . . JEDEC 9QL

Type of Cathode . . . . . Coated Unipotential

Operating Position . . . . . Any

# 6MC6

## MAXIMUM RATINGS – Design-Maximum Values <sup>f</sup>

For operation as a Horizontal-Deflection-Amplifier Tube in a 525-line, 30-frame system.

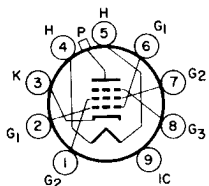
DC Plate Supply Voltage . . . . .	$E_{bb}$	990	V
Peak Positive-Pulse Plate Voltage <sup>g</sup> . . . . .	$e_{bm}$	7000	V
Peak Negative-Pulse Plate Voltage . . . . .	$-e_{bm}$	1100	V
DC Grid-No. 3 Voltage <sup>h</sup> . . . . .	$E_{c3}$	75	V
DC Grid-No. 2 (Screen-Grid) Voltage . . . . .	$E_{c2}$	250	V
Peak Negative-Pulse Grid-No. 1 (Control-Grid) Voltage . . . . .	$-e_{clm}$	330	V
Heater-Cathode Voltage:			
Peak . . . . .	$e_{hkm}$	±200	V
Average . . . . .	$E_{hk}$	100	V
Heater Voltage: 6MC6 . . . . .	$E_h$	5.7 to 6.9	V
Heater Current: 36MC6 . . . . .	$I_h$	0.42 to 0.48	A
Cathode Current:			
Peak . . . . .	$i_{km}$	1400	mA
Average . . . . .	$i_{k(av)}$	400	mA
Grid-No. 2 Input . . . . .	$P_{g2}$	5	W
Plate Dissipation <sup>j</sup> . . . . .	$P_b$	33	W
Envelope Temperature (at hottest point on envelope surface) . . . . .	$T_E$	250	°C

## MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance: . . . . .	$R_{g(ckt)}$	
Cathode bias . . . . .		1.0 megohm (with min. $R_K = 100 \Omega$ )
Grid-resistor bias . . . . .		10.0 megohms (with signal peak clamped to zero bias)
Fixed bias . . . . .		0.47 megohm (where positive grid current is not drawn)

## TERMINAL DIAGRAM – JEDEC 9QL (Bottom View)

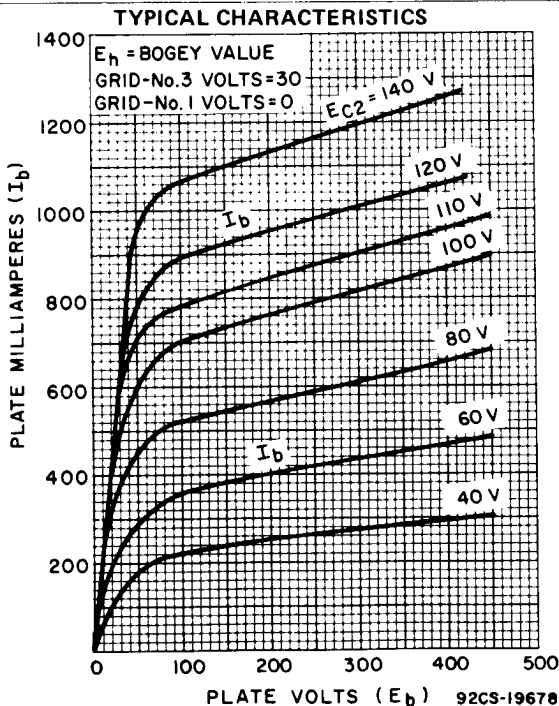
Pin 1 – Grid No. 2  
Pin 2 – Grid No. 1  
Pin 3 – Cathode  
Pin 4 – Heater  
Pin 5 – Heater



Pin 6 – Grid No. 1  
Pin 7 – Grid No. 2  
Pin 8 – Grid No. 3  
Pin 9 – Do Not Use  
Top Cap – Plate

<sup>a</sup> Measured without external shield in accordance with the current issue of EIA Standard RS-191B.

<sup>b</sup> With grid No. 3 and grid No. 2 connected, respectively, to cathode and plate at socket.

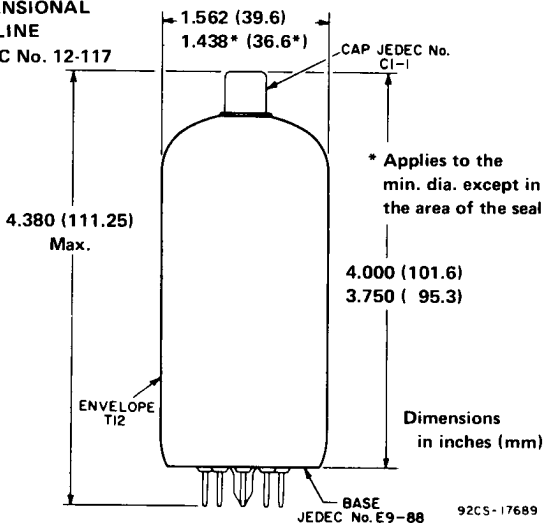


- c Conditions:  $E_b = E_{c2} = 175 \text{ V}$ ,  $E_{c1} = -21 \text{ V}$ .
- d This value can be measured by a method involving a recurrent waveform such that the Maximum Ratings of the tube will not be exceeded.
- e Under pulse-duration condition specified in *Footnote g*.
- f As defined in the current issue of EIA Standard RS-239A.
- g This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one scanning cycle is  $10 \mu\text{s}$ .
- h In horizontal-deflection-amplifier service, a positive voltage should be applied to grid No. 3 to reduce interference from "snivets", which may occur in both vhf and uhf television receivers, and to increase power output. A typical value is 30 V.
- j An adequate bias resistor or other means is required to protect the tube in the absence of excitation.

# 6MC6

## DIMENSIONAL OUTLINE

JEDEC No. 12-117



## TYPICAL PLATE CHARACTERISTICS

