6ME8

Two-Plate Beam-Deflection Tube

BALANCED OUTPUT **9-PIN MINIATURE TYPE** **DARK HEATER**

For Color-Demodulator Applications in Color-TV Receivers and a Variety of Other Switching and Gating Applications

ELECTRICAL CHARACTERISTICS

		Bogey Values[a]	
Heater Voltage (AC or DC)	E_h	6.3	V
Heater Current at E_h = bogey value	I_h	0.300	A
Direct Interelectrode Capacitances			
Without external shield			
Grid No.1 to all except plates		7.5	pF
Either plate to all	$C_{p\text{-}all}$	6.0	pF
Either deflecting electrodes to all other electrodes	$C_{dj\text{-}all}$	6.0	pF
Plate No.1 to Plate No.2	$C_{p1\text{-}p2}$	0.4	pF
Deflecting-electrode No.1 to deflecting-electrode No.2	$C_{dj1\text{-}dj2}$	0.4	pF
Grid No.1 to deflecting-electrode No.1	$C_{g1\text{-}dj1}$	0.07 max	pF
Grid No.1 to deflecting-electrode No.2	$C_{g1\text{-}dj2}$	0.1 max	pF
For the following characteristics see Conditions "A"			
Transconductance, grid No.1 to both plates	g_m	4400	μmho
Total DC Plate Current (plate-No.1 + plate-No.2 current)	$I_{b(tot)}$	14.5	mA
DC Grid-No.3 Current	I_{c3}	0.7	mA
Cutoff DC Grid-No.1 Voltage for I_b(tot) = 10 μA	$E_{c1(co)}$	-16	V

Conditions "A"

Heater Voltage	E_h	Bogey Value	V
DC Plate-No.1 Supply Voltage	E_{bb1}	250	V
Plate No.2	-	Connected to plate No.1	
DC Deflecting-Electrode-No.1 Supply Voltage	-	75	V
DC Deflecting-Electrode-No.2 Supply Voltage	-	75	V
DC Grid-No.3 Supply Voltage	E_{cc3}	350	V
DC Grid-No.1 Supply Voltage	E_{cc1}	0	V
Cathode Resistor	R_k	390	Ω
For the following deflecting-electrode characteristics, see Conditions "B"			
Deflecting-Electrode Switching Voltage[b]	$E_{dj(switching)}$	30 max	V
Voltage Difference between Deflecting Electrodes for equal plate currents ($I_{b1} = I_{b2}$)	-	0	V

Plate-No.1 Current with deflecting electrode-No.1 voltage (E_{dj1}) = 55 V and deflecting-electrode-No.2 voltage (E_{dj2}) = 95 V	I_{b1}	1.3 max	mA
Plate-No.2 Current with (E_{dj1}) = 95 V and (E_{dj2}) = 55 V	I_{b2}	1.3 max	mA
Deflecting-Electrode-No.1 Current with E_{dj1} = 125 V and E_{dj2} = 25 V	I_{dj1}	0.04 max	mA
Deflecting-Electrode-No.2 Current with E_{dj1} = 25 V and E_{dj2} = 125 V	I_{dj2}	0.04 max	mA

Conditions "B"

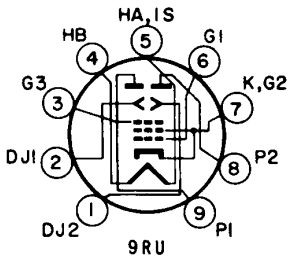
Heater Voltage	E_h	6.3	V
DC Plate-No.1 Supply Voltage	E_{bb1}	250	V
DC Plate-No.2 Supply Voltage	E_{bb2}	250	V
DC Grid-No.3 Supply Voltage	E_{cc3}	350	V
DC Grid-No.1 Supply Voltage	E_{cc1}	0	V
Cathode Resistor	R_k	390	Ω

MECHANICAL CHARACTERISTICS

Operating Position	Any
Type of Cathode	Coated Unipotential
Maximum Overall Length	2.625 in
Maximum Seated Length	2.375 in
Length, Base Seat to Bulb Top Excluding tip	1.906 to 2.094 in
Maximum Diameter	0.875 in
Dimensional Outline (JEDEC 6-3)	See *General Section*
Envelope	JEDEC T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC E9-1)

TERMINAL DIAGRAM (Bottom View)

Pin 1 - Deflecting Electrode No.2
Pin 2 - Deflecting Electrode No.1
Pin 3 - Grid No.3
Pin 4 - Heater End B
Pin 5 - Heater End A, Internal Shield▲
Pin 6 - Grid No.1
Pin 7 - Grid No.2, Cathode
Pin 8 - Plate No.2
Pin 9 - Plate No.1



▲ Pin No.5 should be connected directly to ground.

DESIGN-MAXIMUM RATINGS

DC Plate Voltage, each plate	E_b	400	V
DC Deflecting-Electrode Voltage, each electrode	E_{dj}	100	V
Peak Deflecting-Electrode Voltage, each electrode	e_{djm}	±200	V
DC Grid-No.3 (Accelerating-Grid) Voltage	E_{c3}	400	V
DC Grid-No.1 (Control-Grid) Voltage Positive-bias value	E_{c1}	0	V
Heater Voltage (AC or DC)	E_h	5.7 to 6.9	V

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DESIGN-MAXIMUM RATINGS (Cont'd)

Average Cathode Current	$I_{K(av)}$	30	mA
Grid-No.3 Input	P_{g3}	2	W
Plate Dissipation, each plate	P_b	2	W

MAXIMUM CIRCUIT VALUES

Grid-No.1-Circuit Resistance	$R_{g1(ckt)}$	
For fixed-bias operation		0.1 MΩ
For cathode-bias operation		0.25 MΩ

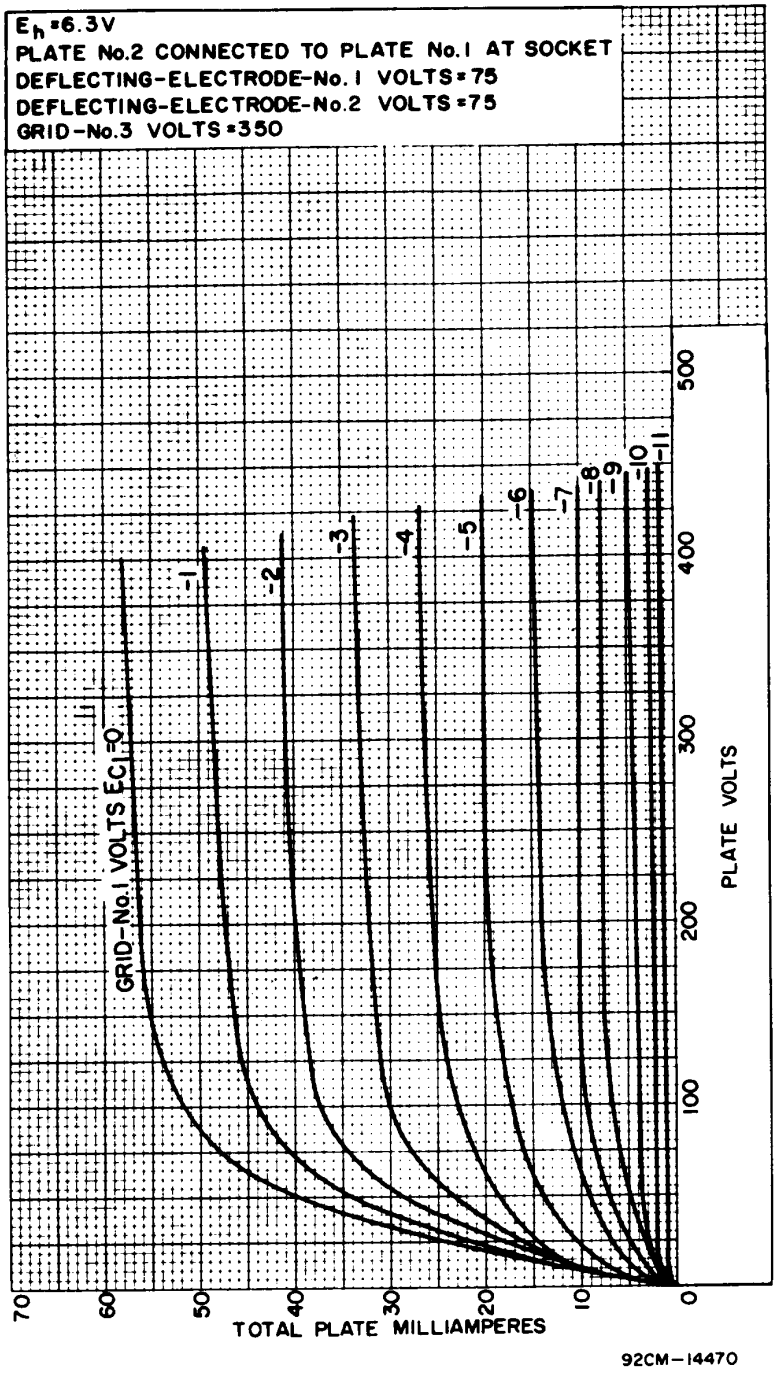
[a] Unless otherwise specified.

[b] Defined as the total voltage change from 75 volts on either deflecting electrode with an equal and opposite change on the other deflecting electrode required to switch the plate current from one plate to the other.

OPERATING CONSIDERATIONS

Magnetic fields adversely affect the intrinsic operating plate-current balance of the 6ME8. To minimize this effect, the tube should be mounted as far as possible from all devices producing extraneous magnetic fields such as transformers, chokes, or similar components. It is recommended that an external shield be used in those applications critical for plate-current balance.

Typical Plate Characteristics



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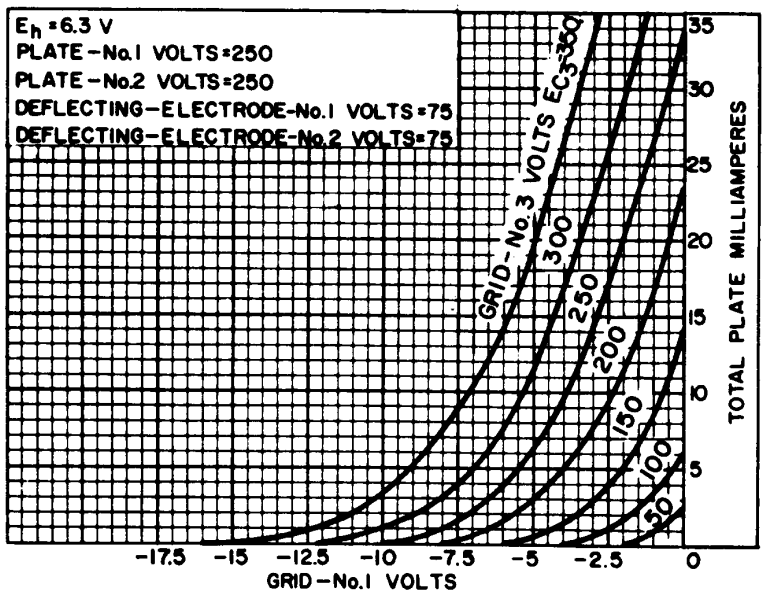
Transfer Characteristics



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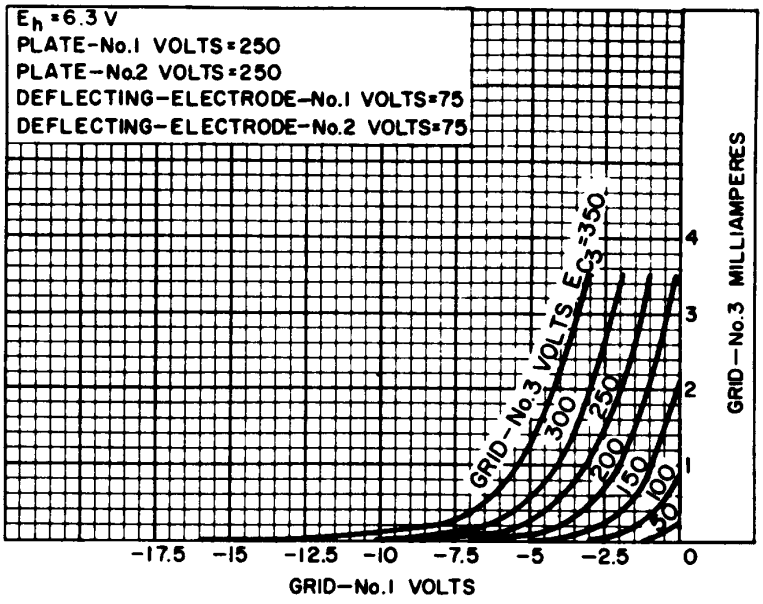

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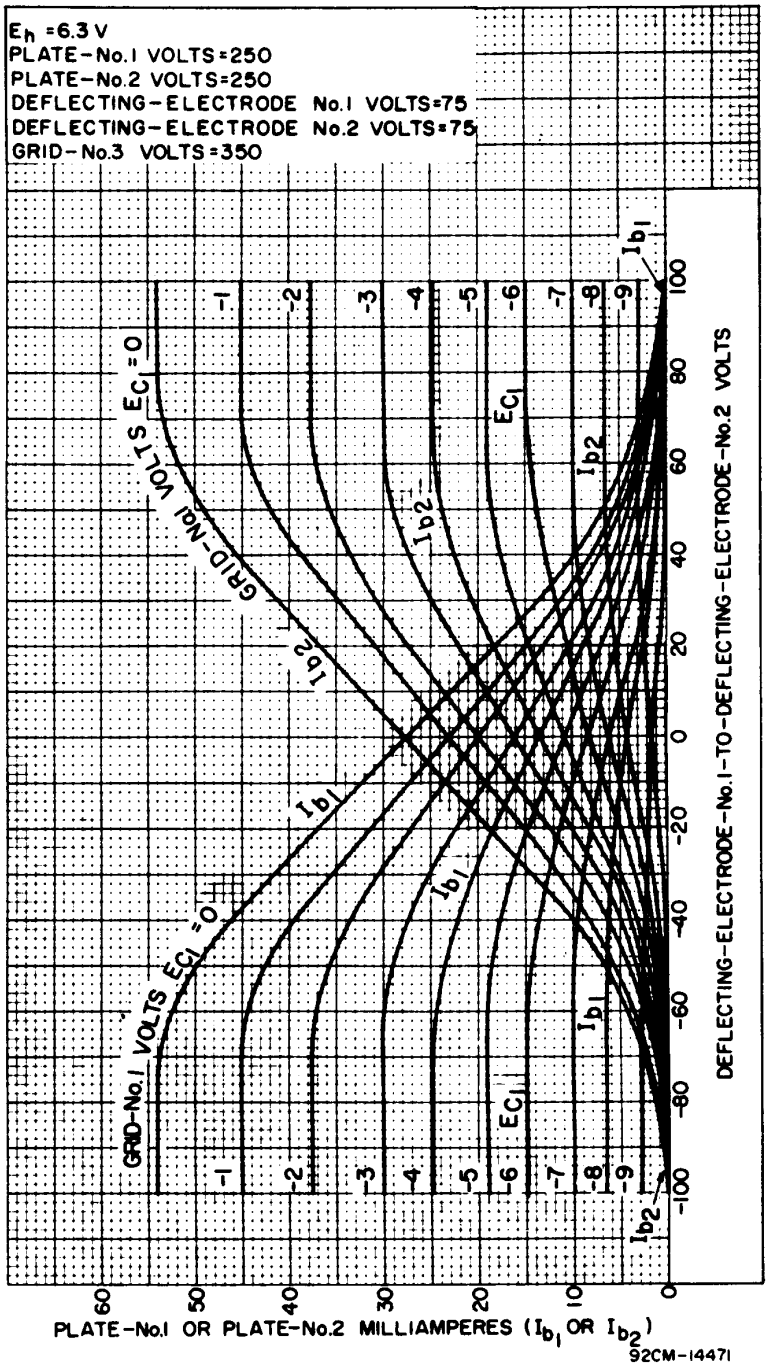
Transfer Characteristics



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