

TENTATIVE DATA

EITEL-McCULLOUGH, INC.
SAN BRUNO, CALIFORNIA

2C39A

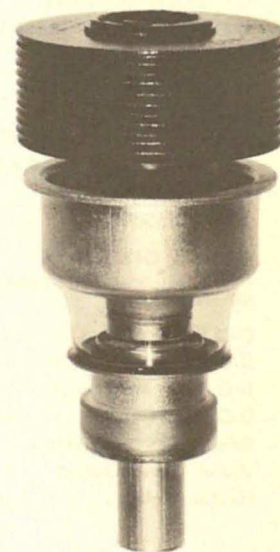
HIGH-MU TRIODE

Supersedes
Types

2C38 - 2C39

► The Eimac 2C39A is a high-mu, forced-air cooled, transmitting triode designed for use as a power amplifier, oscillator, or frequency multiplier from low frequencies to above 2500 megacycles. Its small size, rugged construction, unusually high transconductance and relatively high plate-dissipation make possible the manufacture of compact equipment for moderate power output in either fixed or mobile service.

Because of the design and planar construction of the Eimac 2C39A, with the grid connection between anode and cathode connections, "grid-isolation" circuits can be employed. The electrode terminals are short cylinders of increasing diameters so that the tube may be readily inserted in cavity type circuits.



GENERAL CHARACTERISTICS

► ELECTRICAL

Cathode: Coated Unipotential	
Heater Voltage	- - - - - 6.3 volts
	See Application Notes
Heater Current	- - - - - 1.0 amperes
Amplification Factor	- - - - - 100
Transconductance ($I_b=70$ ma., $E_b=600$ v.)	- - - - - 22,000 umhos average
Direct Interelectrode Capacitances	
Grid-Plate	- - - - - 1.95 $\mu\mu\text{f}$
Grid-Cathode	- - - - - 6.50 $\mu\mu\text{f}$
Plate-Cathode	- - - - - 0.035 $\mu\mu\text{f}$ max.

MECHANICAL

Cooling: Anode	- - - - - Forced Air
Grid and Cathode Seals	- - - - - Forced Air
Maximum Overall Dimensions	
Length	- - - - - 2.75 inches
Diameter	- - - - - 1.26 inches
Net Weight	- - - - - 2.8 ounces
Shipping Weight	- - - - - 7 ounces

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► Indicates change from sheet dated 4-1-46.

TENTATIVE DATA

RADIO FREQUENCY POWER AMPLIFIER AND MODULATOR (Key-down conditions, per tube)

MAXIMUM RATINGS

D-C PLATE VOLTAGE	-	-	-	-	1000	VOLTS
D-C CATHODE CURRENT	-	-	-	-	125	MA.
D-C GRID VOLTAGE	-	-	-	-	-150	VOLTS
D-C GRID CURRENT	-	-	-	-	50	MA.
HEATER VOLTAGE	-	-	-	-	SEE APPLICATION NOTES	
PEAK POSITIVE R-F GRID VOLTAGE	-	-	-	-	30	VOLTS
PEAK NEGATIVE R-F GRID VOLTAGE	-	-	-	-	-400	VOLTS
PLATE DISSIPATION	-	-	-	-	100	WATTS
GRID DISSIPATION	-	-	-	-	2	WATTS

TYPICAL OPERATION

(Power Amplifier "Grid-Isolation" Circuit CW Operation 500 Megacycles.)

D-C Plate Voltage	-	-	-	-	800	Volts
D-C Plate Current	-	-	-	-	80	Ma.
D-C Grid Voltage	-	-	-	-	-45	Volts
D-C Grid Current	-	-	-	-	45	Ma.
Driving Power (approx.)	-	-	-	-	6	Watts
Useful Power Output	-	-	-	-	27	Watts
Heater Voltage	-	-	-	-	See Application Notes	

TYPICAL OPERATION

(R-F Oscillator—2500 Megacycles)

D-C Plate Voltage	-	-	-	-	900	Volts
D-C Cathode Current	-	-	-	-	90	Ma.
D-C Grid Voltage	-	-	-	-	-22	Volts
D-C Grid Current	-	-	-	-	27	Ma.
Useful Power Output	-	-	-	-	12	Watts
Heater Voltage	-	-	-	-	See Application Notes	

Note: These conditions are for "interrupted oscillation" performance, and conform to the minimum requirements of the JAN specifications for the 2C39A.

"Interrupted oscillations" are those which are periodically interrupted at an audio or radio frequency rate. Usually such action is related to the high time constant of the grid-leak resistor and associated bypass capacitors which prevents the developed bias-voltage from following, rapidly enough, the random changes in amplitude of the oscillations.

PLATE MODULATED OSCILLATOR OR AMPLIFIER 100% MODULATION

MAXIMUM RATINGS

(Note: For less modulation a higher D-C plate voltage may be used if the sum of the peak positive-audio voltage and D-C voltage does not exceed 1200 volts.)

D-C PLATE VOLTAGE	-	-	-	-	600	VOLTS
D-C CATHODE CURRENT	-	-	-	-	100	MA.
D-C GRID VOLTAGE	-	-	-	-	-150	VOLTS
D-C GRID CURRENT	-	-	-	-	50	MA.
HEATER VOLTAGE	-	-	-	-	SEE APPLICATION NOTES	
PEAK POSITIVE R-F GRID VOLTAGE	-	-	-	-	30	VOLTS
PEAK NEGATIVE R-F GRID VOLTAGE	-	-	-	-	-400	VOLTS
PLATE DISSIPATION	-	-	-	-	100	WATTS
GRID DISSIPATION	-	-	-	-	2	WATTS

APPLICATION

MECHANICAL

Mounting—The 2C39A may be operated in any position.

Contact to anode, grid, cathode, and heater terminals should be made by means of spring collets or spring fingers acting on the cylindrical surface of the terminals. The tube should enter the socket and be seated against the "anode flange" which is so labelled on the outline drawing. The tube should not be seated or stopped by any other surfaces.

To hold the tube in the socket against vibra-

tion, the retaining clamps should act against the anode flange surface. No clamping action should be made on any of the terminal surfaces.

Cooling—The anode, heater-seal, grid-seal and cathode-seal of the 2C39A normally require forced-air cooling. A suitable arrangement for an anode cooling-cowling is shown on the next page. An air-flow through this cowling of 12.5 cubic feet per minute is required for operation up to the maximum rated dissipation. The heater-seal, cathode-seal and grid-seal must be cooled so that the temperature of the metal does not exceed 175° C under any operating conditions.

