2C39A

Power Triode

FORCED-AIR COOLED

Particularly suitable for cathode-drive circuits

GENERAL DATA

Electrical: ←

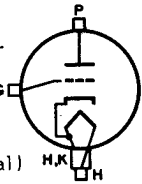
Heater, for Unipotential Cathode:		
Voltage (AC or DC)[a]	6.3	volts
Current	1.0	amp
Heating time	1	minute
Amplification Factor	100	
Transconductance, for plate current of 70 ma. and plate voltage of 600 volts.	24000	μmhos
Direct Interelectrode Capacitances (Approx.):		
Grid to plate	2.0	μμf
Grid to cathode	6.6	μμf
Plate to cathode	0.035 max.	μμf

Mechanical:

Terminal Connections (See *Dimensional Outline*):

BOTTOM VIEW

G - GRID TERMINAL (Adjacent to Cathode & Heater Terminal)
H - HEATER TERMINALS (Cylinder within Cathode Terminal & Cathode Terminal)



K - CATHODE TERMINAL (Outside Cylinder on End Opposite Radiator)
P - PLATE TERMINAL (Between Plate Flange & Glass Section)

Operating Position	Any
Maximum Overall Length	2-3/4"
Diameter	1-1/4" ± 1/64"
Weight (Approx.)	2 oz
Radiator	Integral part of tube
Mounting	Special

Thermal:

Air Flow:

Through Radiator—Adequate air flow should be delivered by a blower during the application of any voltages. Cooling must be sufficient to limit the radiator temperature to the specified maximum value.

To Plate, Grid, Cathode, and Heater Seals—A sufficient quantity of air should be delivered to these seals to prevent their temperature from exceeding the specified maximum value.

Incoming-Air Temperature	45 max.	°C

←Indicates a change.

Radiator Temperature (Measured on core adjacent to plate seal)	175	max.	°C
Seal Temperature (Plate, grid, cathode, and heater)	175	max.	°C

PLATE-MODULATED RF POWER AMPLIFIER — Class C Telephony

Carrier conditions per tube for use with a maximum modulation factor of 1

Maximum CCS[b] Ratings, *Absolute-Maximum Values:*

DC PLATE VOLTAGE	600[c]	max.	volts
GRID VOLTAGE:			
DC	-150	max.	volts
→ Peak negative RF	400	max.	volts
Peak positive RF	30	max.	volts
DC GRID CURRENT	50	max.	ma
DC CATHODE CURRENT	100	max.	ma
GRID INPUT	2	max.	watts
PLATE DISSIPATION	70	max.	watts

RF POWER AMPLIFIER & OSCILLATOR — Class C Telegraphy

Maximum CCS[b] Ratings, *Absolute-Maximum Values:*

DC PLATE VOLTAGE	1000	max.	volts
GRID VOLTAGE:			
DC	-150	max.	volts
→ Peak negative RF	400	max.	volts
Peak positive RF	30	max.	volts
DC GRID CURRENT	50	max.	ma
DC CATHODE CURRENT	125	max.	ma
GRID INPUT	2	max.	watts
PLATE DISSIPATION	100	max.	watts

[a] Because the cathode is subjected to considerable back bombardment as the frequency is increased with resultant increase in temperature, the heater voltage should be reduced depending on operating conditions and frequency to prevent overheating the cathode and resultant short life. For most applications where liberal cooling of the seals is provided, reduction of heater voltage to the values shown in the following table is suggested.

Frequency Mc	*Heater Voltage Volts*
→ up to 300	6.3
→ 300 to 1000	6.0
1000 to 1500	5.5
1500 to 2000	5.0
2000 and above	4.5

Permitted tolerance on the heater-voltage values in the above table is ± 10%. However, for long tube life, it is recommended that the tolerance be held to ± 5%.

When long life in continuous service is desired, the 2C39A should always be put in operation with full rated heater voltage (6.3 volts) which should then be reduced to the lowest value that will give the desired output.

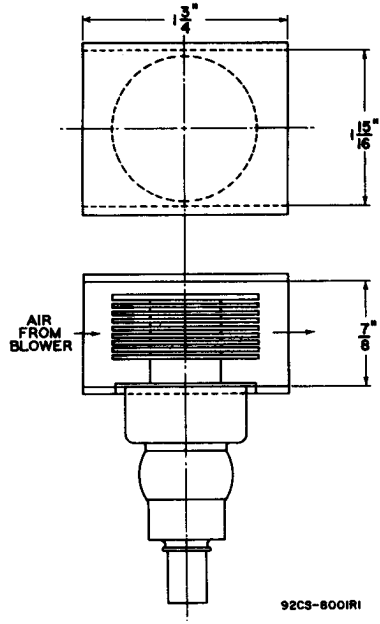
[b] Continuous Commercial Service.

[c] For less than 100% modulation, it is permissible to use a higher dc plate voltage provided the sum of the peak positive modulating voltage and the dc plate voltage does not exceed 1200 volts.

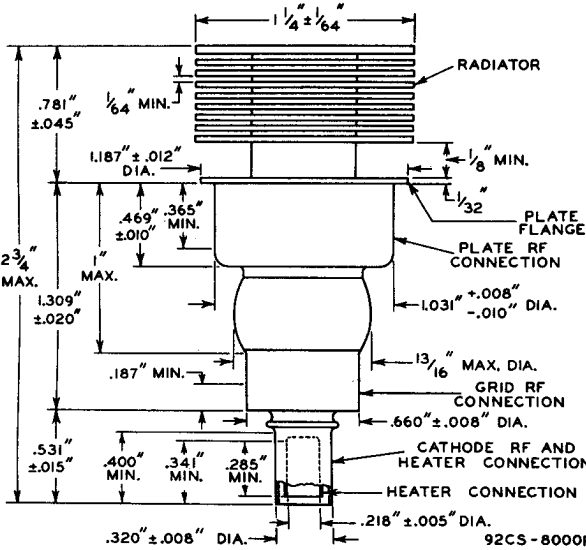
[d] Key-down conditions per tube without amplitude modulation. Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

→ Indicates a change.

RECOMMENDED COWLING FOR DIRECTING AIR FLOW THROUGH RADIATOR OF TYPE 2C39A



2C39A


1 1/4" ± 1/64"
RADIATOR
.781" ±.045"
1/64" MIN.
1.187" ± .012" DIA.
1/8" MIN.
1/32"
PLATE FLANGE
.469" ±.010"
.365" MIN.
PLATE RF CONNECTION
2 3/4" MAX.
1" MAX.
1.309" ±.020"
1.031" +.008" -.010" DIA.
.187" MIN.
13/16" MAX. DIA.
GRID RF CONNECTION
.660" ±.008" DIA.
.531" ±.015"
.400" MIN.
.341" MIN.
.285" MIN.
CATHODE RF AND HEATER CONNECTION
HEATER CONNECTION
.218" ±.005" DIA.
.320" ±.008" DIA.
92CS-8000RI