

## Beam Power Tube

- CERMOLOX<sup>®</sup>
- Compact, Ruggedized
- Hard Tube Modulator
- 7000 Volts Peak
- 8.0 Amperes Peak
- Nanosecond Switching Time

## General Data

## Electrical:

Heater for Unipotential Cathode:

Voltage <sup>a</sup> (AC or DC) .....	}	6.0	typ.	V
		6.4	max.	V
Current @ 6.0 volts .....		7.6		A
Minimum heating time .....		120		s
Mu-Factor <sup>b</sup> .....		6.6		
(Grid No.1 to grid No.2)				

Direct Interelectrode Capacitances:<sup>c</sup>

Grid No.1 to plate .....	0.12	max.	pF
Grid No.1 to cathode .....	30		pF
Plate to cathode .....	0.011	max.	pF
Grid No.1 to grid No.2 .....	38		pF
Grid No.2 to plate .....	5.3		pF

## Mechanical:

Operating Position .....			Any
Maximum Overall Length .....	(69.1 mm)	2.72	in
Greatest Diameter .....	(45.3 mm)	1.77	in
Temperature (All seals & plate core) .....	250	max.	°C
Weight (Approx.) .....	(0.17 kg)	6	oz
Terminal Connections .....	See Outline Drawing		

Pulse Modulator Service<sup>d</sup>

Maximum CCS Ratings, Absolute-Maximum Values:

Instantaneous Peak Plate Voltage <sup>e</sup> .....	7000	max.	V
(Pulse duration 0.1 s)			
DC Plate Voltage .....	5000	max.	V
DC Grid-No.2 Voltage .....	1200	max.	V
DC Grid-No.1 Voltage .....	-250	max.	V
Peak Positive Grid-No.1 Voltage .....	150	max.	V
Peak Plate Current <sup>f</sup> .....	8	max.	A
DC Plate Current .....	.500	max.	A

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Grid-No.2 Input (Average) .....	20	max.	W
Grid-No.1 Input (Average) .....	8	max.	W
Plate Dissipation (Average) <sup>g</sup> .....	600	max.	W

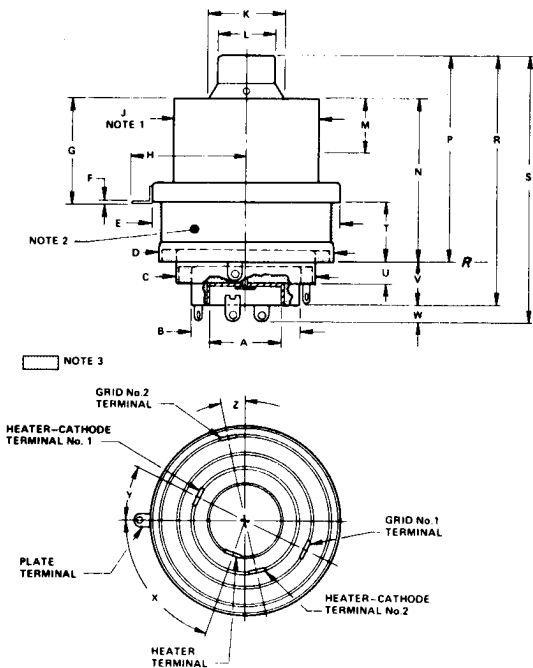
## Typical Operation:

With rectangular wave shape pulses, duty factor of 0.05 and pulse duration of 2 microseconds.

DC Plate Voltage .....	3000	V
Instantaneous Peak Plate Voltage .....	7000	V
DC Grid-No.2 Voltage .....	800	V
DC Grid-No.1 Voltage .....	-120	V
Peak Positive Grid-No.1 Voltage .....	25	V
Peak Plate Current .....	8	A
DC Plate Current .....	0.4	A
DC Grid-No.2 Current .....	0.012	A
DC Grid-No.1 Current .....	0.050	A
Load Resistance .....	225	$\Omega$
Plate Dissipation (Average) .....	480	W
Useful DC Power Output at Peak of Pulse ..	14,400	W

- a See V.A.3 of 1CE-300. Heater voltage should be adjusted to the typical value initially, and then reduced to a lower value that will provide satisfactory performance. The life of the cathode can be conserved by adjusting to the lowest heater value that will give the desired performance.
- b For plate voltage = 500 V, grid-No.2 voltage = 350 V, and plate current = 0.24 A.
- c Measured with special shield adaptor.
- d See Section VC of 1CE-300.
- e An insulating fluid or pressurization may be required to prevent external tube arcing. The insulating fluid must be determined to be compatible with the tube for the particular application.
- f The value of peak plate current shown applies to duty factors up to 0.05; for higher duty factors, the peak plate current must be reduced as shown in the Peak Plate Current Rating Chart.
- g Maximum plate dissipation is a function of the maximum plate input efficiency of the class of service, and the effectiveness of the cooling system. The value of maximum plate dissipation shown is a practical value which can be achieved. In all cases of operation, sufficient cooling must be provided to prevent the terminal and plate core temperatures from exceeding their maximum values. When longer life expectancy and more consistent performance are desirable, operation at reduced temperatures is recommended.

## Dimensional Outline



**Note 1:** Dimension "H" is maintained over the distance "M" with a finish of better than 32 microns.

**Note 2:** Ceramic.

**Note 3:** Keep all stippled regions clear.

\*Dimensions are in inches unless otherwise stated. Metric equivalents in parentheses are given for information only and are based on 1 inch = 25.4 mm.

See next page for dimensions.

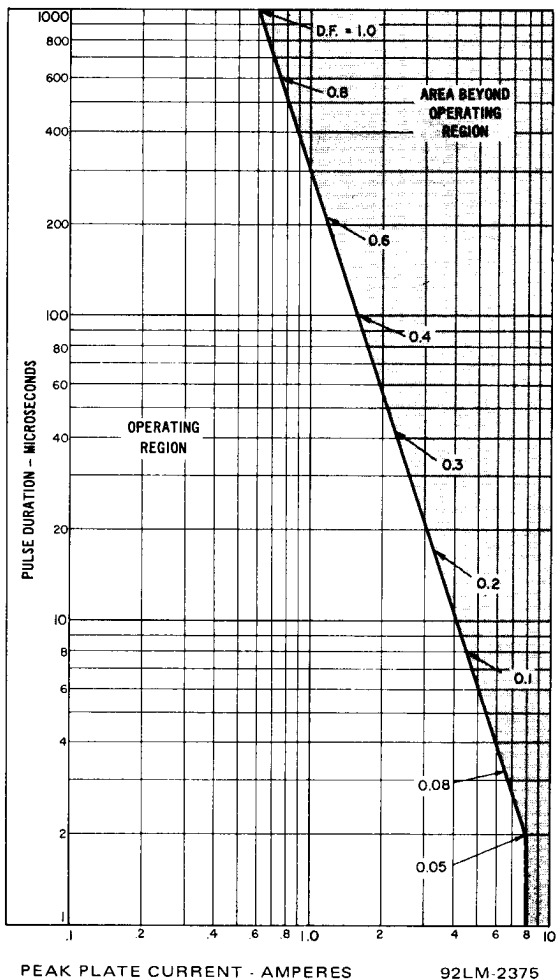
## Dimensional Outline (Continued)

## Tabulated Dimensions\*

## Dimension

A Dia.	0.660 ± .010	(16.76 ± .25)
B Dia.	1.000 ± .010	(25.40 ± .25)
C Dia.	1.300 ± .010	(33.02 ± .25)
D Dia.	1.600 ± .010	(40.64 ± .25)
E Dia.	1.755 ± .010	(44.58 ± .25)
F	0.020 Ref.	( 0.51 Ref.)
G	1.150 Max.	(29.21 Max.)
H Radius	1.130 Max.	(28.70 Max.)
J Dia.	1.300 ± .002	(33.020 ± .051)
K Dia.	0.855 Max.	(21.72 Max.)
L Dia.	0.573 Max.	(14.55 Max.)
M	0.700 Min.	(17.78 Min.)
N	1.595 ± .035	(40.5 ± .9)
P	2.000 ± .045	(50.8 ± 1.1)
R	2.400 Ref.	(60.96 Ref.)
S	2.72 Max.	(69.1 Max.)
T	0.575 ± .025	(14.61 ± .64)
U	0.200 ± .020	( 5.08 ± .51)
V	0.400 ± .020	(10.16 ± .51)
W	0.250 Ref.	( 6.35 Ref.)
X	60° Ref.	
Y	30° Ref.	
Z	15° Ref.	

## Peak Plate Current Rating



## Constant Current Characteristics

