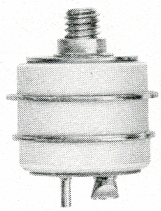
8893

PLANAR TRIODE

The 8893 is a compact, rugged ceramic/metal planar triode intended for CW use or as a plate- or grid-pulsed oscillator or amplifier. It features high power output, high plate efficiency and excellent frequency stability under severe environmental conditions. The construction of the 8893 readily lends itself to cavity circuit operation resulting in an extremely compact rf source.



GENERAL CHARACTERISTICS[1]

ELECTRICAL

Cathode: Oxide Coated, Unipotential		
Heater: Voltage	6.3 (±5%)	V
Current, at 6.3 volts	1.3	A
Cathode Heating Time	60	sec.
Transconductance (Average)	30	mmhos
Amplification Factor (Average)	60	
Direct Interelectrode Capacitance, without heater voltage		
Grid-Cathode	8.00	pF
Grid-Plate	2.35	pF
Plate-Cathode (maximum)	0.10	pF
Plate Dissipation (maximum)[2]	100	W
Grid Dissipation (maximum)	1.5	W

1. The data presents the design objectives for this product and the characteristics and specifications of this type are subject to change. The device is now under development and is made available for experimental purposes only. For the most recent information concerning the status of this development, please contact your nearest Varian Electron Tube and Device Field Office or the Product Manager, Eimac Division of Varian, Salt Lake City, Utah.

2. With forced air cooling or appropriate conduction and/or convection cooling.

MECHANICAL

Maximum Overall Dimensions:	
Length	1.074 in; 27.30 mm
Diameter	0.758 in; 19.30 mm
Net Weight	0.35 oz; 10.0 gm
Operating Position	Any
Maximum Operating Temperature:	
Ceramic/Metal Seals	250°C
Cooling	Forced Air

(Effective 6-1-70) Printed in U.S.A.

RF OSCILLATOR
Class C, Pulsed

ABSOLUTE MAXIMUM RATINGS

DC PLATE VOLTAGE	2.0	kVdc
PEAK PLATE VOLTAGE	3.5	kv
DC PLATE CURRENT	150	mAdc
DC GRID CURRENT	45	mAdc
PEAK PLATE CURRENT	5.0	a
PEAK GRID CURRENT	1.5	a
DC GRID VOLTAGE	-100	Vdc
PULSE DURATION[1]	6.0	μs
DUTY FACTOR[1]	.004	
PEAK HEATER-CATHODE VOLTAGE[2]	±50	V
FREQUENCY	4.0	GHz

1. For applications requiring longer pulse duration and/or higher duty factor, please consult the Product Manager, EIMAC-Division of Varian, Salt Lake City, Utah.
2. The heater is electrically isolated from the cathode.

REPRESENTITIVE OPERATION (Grid-Pulsed Oscillator)

Frequency	2.5	GHz
Heater Voltage	6.3	V
Heater Current	1.3	A
Duty Factor	0.01	maximum
Pulse Width	30	microseconds maximum
Peak Plate Voltage	1.5	kv
Peak Plate Current	3a	maximum
Power Output (useful)	1	kw, minimum

APPLICATION

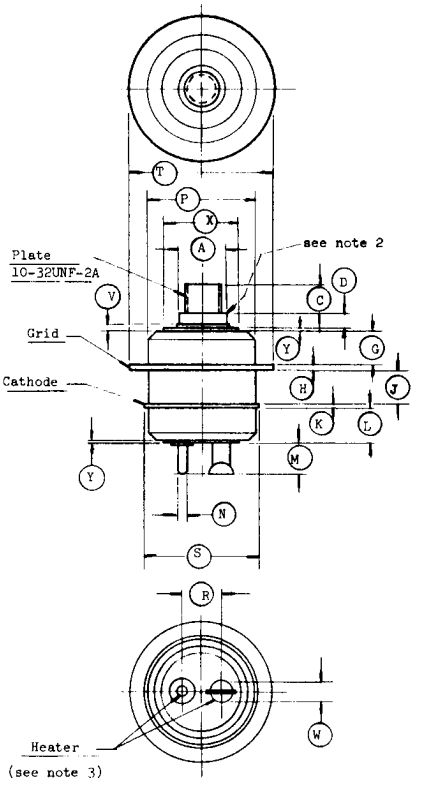
The cathode and grid flanges should not be altered in any way such as by machining or filing, since final seal could be damaged. Maximum torque applied to flanges during installation should not exceed 15 inch pounds.

For optimum rf performance, the anode line should make good rf contact on the anode area indicated in the outline drawing.

For further details on cooling or other aspects of tube operation, refer to the "Application Notes for Planar Triodes" bulletin which can be obtained on request.

DIMENSIONAL DATA

DIM.	INCHES			MILLIMETERS		
	MIN.	MAX.	REF.	MIN.	MAX.	REF.
A	0.247	0.253	- -	6.27	6.43	- -
C	0.120	0.160	- -	3.05	4.06	- -
D	0.070	0.090	- -	1.78	2.29	- -
G	0.182	0.192	- -	4.62	4.88	- -
H	0.025	0.031	- -	0.64	0.79	- -
J	0.170	0.180	- -	4.32	4.57	- -
K	0.025	0.031	- -	0.64	0.79	- -
L	0.170	0.180	- -	4.32	4.57	- -
M	0.170	0.190	- -	4.32	4.83	- -
N	0.047	0.053	- -	1.19	1.35	- -
P	0.635	0.665	- -	16.13	16.89	- -
R	0.186	0.214	- -	4.72	5.44	- -
S	0.696	0.708	- -	17.73	17.98	- -
T	0.748	0.758	- -	19.00	19.25	- -
V	- -	0.040	- -	- -	1.02	- -
W	- -	- -	0.100	- -	- -	2.54
X	0.545	0.570	- -	13.84	14.48	- -
Y	- -	0.020	- -	- -	0.51	- -



Notes: 1. Ref Dims. are for info. only and are not reqd for insp. purposes.
2. For optimum rf performance the Anode line should make rf contact at this point on the Anode Cup.
3. Heater is electrically isolated from cathode.