8912

PLANAR TRIODE

The 8912 (formerly X2154) is a compact, rugged ceramic/metal planar triode intended for CW plate- or grid-pulsed oscillator, amplifier, or frequency multiplier use. It features high power output, high plate dissipation and excellent frequency stability under severe environmental conditions. The construction of the 8912 readily lends itself to cavity circuit operation resulting in an extremely compact rf source. The 8912 is capable of providing in excess of 1 kw peak power at 6 GHz.

Actual Size

GENERAL CHARACTERISTICS[1]

ELECTRICAL

Cathode: Oxide Coated, Unipotential		
Heater: Voltage	6.3 ± 5%	V
Current, at 6.3 volts	0.65	A
Cathode Heating Time	60	sec.
Transconductance (Average)	30	mmhos
Amplification Factor (Average)	85	
Direct Interelectrode Capacitance, without heater voltage		
Grid-Cathode	5.00	pF
Grid-Plate	1.50	pF
Plate-Cathode (maximum)	0.06	pF
Plate Dissipation (maximum)[2]	50	W
Grid Dissipation (maximum)	1.5	W

1. The data presents the nominal 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	1.013 in; 25.73 mm
Diameter	0.608 in; 15.44 mm
Net Weight	0.25 oz; 7.0 gm
Operating Position	Any
Maximum Operating Temperature:	
Ceramic/Metal Seals	250°C
Cooling	Conduction and Forced Air

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RF OSCILLATOR
Class C, Pulsed

ABSOLUTE MAXIMUM RATINGS:

DC PLATE VOLTAGE	2.0 kVdc
PEAK PLATE VOLTAGE	2.5 kv
DC PLATE CURRENT	100 mAdc
DC GRID CURRENT	30 mAdc
PEAK PLATE CURRENT	3.0 a at .0025 DUTY 1.5 a at .01 DUTY
PEAK GRID CURRENT	1.2 a at .0025 DUTY 0.7 a at .01 DUTY
DC GRID VOLTAGE	-100 Vdc
PULSE DURATION[1]	3.0 μs
DUTY FACTOR[1]	.01
PEAK HEATER-CATHODE VOLTAGE[2]	±50 v
FREQUENCY	6.0 GHz

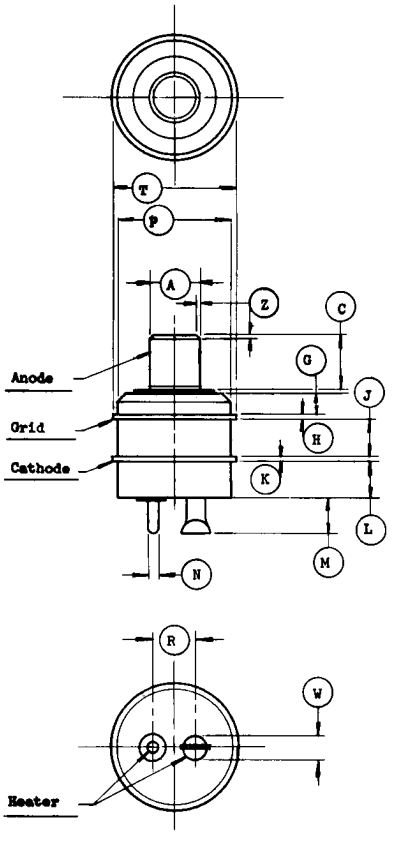
1. For applications requiring longer pulse duration and/or higher duty factor, please consult the Product Manager, EIMAC-Division of Varian, Salt Lake City, Utah.

2. The heater is electrically isolated from the cathode.

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.

Soldered connections may be made to the anode stud, grid or cathode flanges, and heater contacts where adequate heat sinking and good soldering practices are followed to minimize the heat applied to the tube and the thermal gradient across the metal to ceramic brazed areas. For operating information refer to EIMAC bulletin #15, "Operating Instructions for Planar Triodes".



DIMENSIONAL DATA						
DIM.	INCHES			MILLIMETERS		
	MIN.	MAX.	REF.	MIN.	MAX.	REF.
A	0.245	0.260	--	6.22	6.60	--
C	0.240	0.255	--	6.10	6.48	--
G	0.120	0.155	--	3.05	3.93	--
H	0.025	0.031	--	0.64	0.79	--
J	0.167	0.177	--	4.24	4.50	--
K	0.025	0.031	--	0.64	0.79	--
L	0.170	0.185	--	4.32	4.70	--
M	0.170	0.190	--	4.32	4.83	--
N	0.047	0.053	--	1.19	1.35	--
P	0.535	0.565	--	13.59	14.35	--
R	0.185	0.215	--	4.70	5.46	--
T	0.598	0.608	--	15.19	15.44	--
W	--	--	0.100	--	--	2.54

Note;
1. Ref. Dims. are for info. only and are not req'd. for inspection purposes.