

## 7815 UHF Planar Triode



The Penta Laboratories 7815 is a ruggedized, high mu planar triode of ceramic and metal construction, designed for use as a grid pulsed, plate pulsed or CW oscillators, frequency multipliers, or amplifiers in radio transmitting service from low frequency to 3 GHz.

A special feature of this tube as compared to other tubes fitting the same socket is an extended grid-anode insulator in the tube envelope. The extended grid-anode insulator is an important feature in airborne equipment at high altitudes. Other features of this tube include low interelectrode capacitance, high transconductance, and great mechanical strength. The tube also employs a dispenser type cathode which consists of an indirectly heated disc with an oxide coating impregnated in a nickel matrix. This construction, in combination with proper plate series impedance, reduces to a minimum failures of the cathode due to voltage surges.

### Electrical Characteristics

Heater Voltage	6.0	Volts
Heater Current	1.0	Amperes
Cathode Heating Time, minimum	60	seconds
Amplification Factor	100	
Transconductance (Ib = 70mA, Eb = 600V)	25,000	$\mu$ mhos
Interelectrode Capacitance		
Grid to Plate	1.98	pf
Grid to Cathode	6.30	pf
Plate to Cathode, max	0.035	pf

### Mechanical Characteristics

Mounting Position	Any
Cooling	Conduction and Convection
Maximum Envelope Temperature	250 °C
Net Weight	51 Grams

Revised 04/26/01



## P E N T A   L A B O R A T O R I E S

9740 COZYCROFT AVENUE \* CHATSWORTH \* CALIFORNIA 91311  
(800) 421-4219 \* (818) 882-3872 \* FAX: (818) 882-3968

ELECTRON TUBES FOR INDUSTRY



## 7815 UHF Planar Triode

### Maximum Ratings

Plate Voltage		
Grid Pulsed, DC	2500	Volts
Plate Pulsed, Peak	3500	Volts
DC Grid Voltage	-150	Volts
Instantaneous Peak Grid to Cathode Voltage		
Grid Negative to Cathode	-750	Volts
Grid Positive to Cathode	250	Volts
Average Plate Current	10	mA
Average Grid Current	5	mA
Peak Plate Current	3	Amperes
Average Plate Dissipation	10	Watts
Average Grid Dissipation	2	Watts
Pulse Duration	6	$\mu$ s
Duty Factor	0.0033	
Frequency	3 GHz	

### Typical Operating Conditions Plate Pulsed RF Oscillator

Frequency	2.5	GHz
Filament Voltage	5.8	Volts
Pulse Duration	5	$\mu$ s
Duty Factor	0.003	
Peak Plate Pulse Supply	3500	Volts
Peak Plate Current from Pulse Supply	3	Amperes
Average Plate Current	9	mA
Average Grid Current	3	mA
Useful Peak Power Output, approx.	2	kW

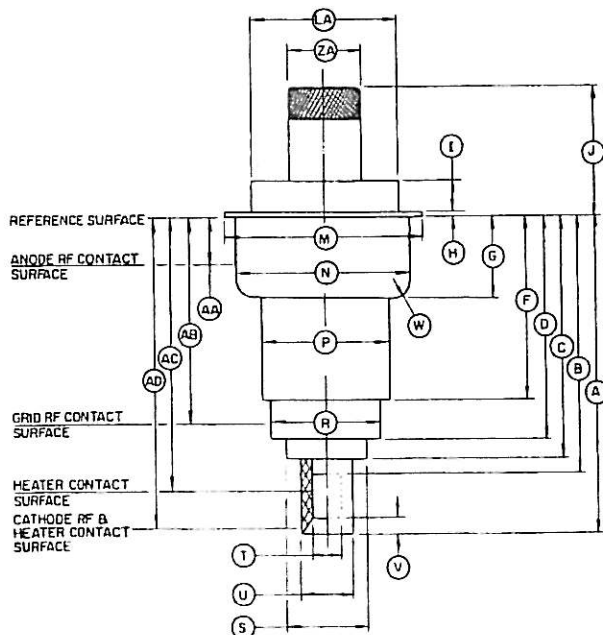


# 7815 UHF Planar Triode

## DIMENSIONS FOR OUTLINE OF 7815

The millimeter dimensions are derived from the original inch dimensions.

Ref	Inch			Millimeter			Notes
	Min	Nom	Max	Min	Nom	Max	
A	1.815		1.875	46.10		47.62	
AA	0.035	0.198	0.361	0.89	5.03	9.17	1,5
AB	1.185	1.225	1.265	30.10	31.12	32.13	2,5
AC	1.534	1.631	1.728	38.96	41.43	43.89	3,6
AD	1.475	1.645	1.815	37.46	41.78	46.10	4,5,6
B			1.534			38.96	
C			1.475			37.46	5
D	1.289		1.329	32.74		33.76	
F	0.970		1.010	24.64		25.65	
G	0.462		0.477	11.73		12.12	
H			0.040			1.02	
I			0.185	3.18		4.70	
J	0.766		0.826	19.46		20.98	
LA	0.840		0.860	21.34		21.84	
M	1.180		1.195	29.97		30.35	
N	1.025		1.035	26.04		26.29	5
P	0.752		0.792	19.10		20.12	
R	0.655		0.665	16.64		16.89	5
S			0.545			13.84	
T	0.213		0.223	5.41		5.66	6
U	0.315		0.325	8.00		8.26	5,6
V			0.086			2.18	
W			0.100			2.54	
ZA	0.427		0.447	16.51		21.59	



### Notes:

1. Anode rf contact surface and reference dimension for eccentricity measurements.
2. Grid rf contact surface and reference dimension for eccentricity measurements.
3. Heater contact surface and reference dimension for eccentricity measurements.
4. Heater and cathode rf contact surface and reference dimension for eccentricity measurements.
5. The total indicated runout of the anode and grid contact surface with respect to the cathode contact surface will not exceed 0.020 inch.
6. The total indicated runout of the cathode contact surface with respect to the heater contact surface will not exceed 0.012 inch.



# 7815 UHF Planar Triode

