



**ELECTRONIC
INNOVATIONS**
IN ACTION

MICROWAVE DEVICES

PRELIMINARY

—PRODUCT INFORMATION—

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Y-1636

Development Type *

Planar Triode

The Y-1636 is a metal-ceramic planar triode intended for use as a plate-pulsed and grid pulsed oscillator or amplifier. This tube features a large cathode area to size ratio for added capabilities and/or lower current density resulting in longer life.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Minimum	Bogey	Maximum	Units	Test Conditions				
					Ef V	Eb V	Ib Ma	RL Ohms	Rk Ohms
Heater Voltage, AC or DC •	6.0	6.3	6.6	Volts					
Heater Current	---	1.3	---	Amperes	6.3	---	---	---	---
Plate Current	---	75	---	Milliamperes	6.3	400	---	---	33
Amplification Factor	---	100	---		6.3	400	---	---	33
Transconductance	---	45000	---	Micromhos	6.3	400	---	---	33
Grid Voltage, Cutoff	---	-22	---	Volts	6.3	1500	1.0	100000	---
Direct Interelectrode Capacitances ♦									
Grid to Plate: (g to p)	---	3.25	---	pf					
Input: g to (h+k)	---	8.7	---	pf					
Output: p to (h+k)	---	0.04	---	pf					
Cathode Warm-up Time §	---	---	5	Seconds					

GRID-PULSED OSCILLATOR SERVICE

Frequency	2000	Megahertz
Duty Factor	0.01	
Pulse Duration	1.0	Microseconds
Pulse Repetition Rate	10000	Pulses Per Second
Plate Supply Voltage	1600	Volts
Plate Current: Average During Pulse	3	Amperes
Grid Current: Average During Pulse	1.2	Amperes
Power Output: Average During Pulse	1500	Watts

NOTES

- ★ Both electrical and mechanical characteristics of development types are subject to change; therefore, it is recommended that designers consult their General Electric field representative before designing equipment around developmental types.
- The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance. In some applications, longer tube life may be obtained at reduced heater voltage. For specific recommendations, contact your General Electric sales representative.
- ♦ Measured at 450 KHz using a grounded adapter that provides shielding between external terminals of tube.
- § Time required for plate current to reach 80 percent of its steady-state value.

GENERAL ELECTRIC

Supersedes PI Sheet dated 11-68

ABSOLUTE-MAXIMUM RATINGS**GRID-PULSED OSCILLATOR OR AMPLIFIER SERVICE**

Plate Supply Voltage.....	2000	Volts
Pulse Duration	1	Microsecond
Duty Factor.....	0.01	
Plate Current: Average During Pulse†.....	4	Amperes
Negative DC Grid Voltage	100	Volts
Grid Current: Average During Pulse.....	1.5	Amperes
Plate Dissipation.....	50	Watts
Peak Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	50	Volts
Heater Negative with Respect to Cathode	50	Volts
Envelope Temperature at Hottest Point▲	250	°C
Temperature Differential Between Two Adjacent Electrodes□.....	100	°C
Mechanical Vibration (20-2000 Hz Sinusoidal)	30	G Peak

Absolute-Maximum ratings are limiting values of operating and environmental conditions applicable to any electron device of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The device manufacturer chooses these values to provide acceptable serviceability of the device, making no allowance for equipment variations, environmental variations, and the effects of changes in operating conditions due to variations in the characteristics of the device under consideration and

of all other electron devices in the equipment.

The equipment manufacturer should design so that initially and throughout life no absolute-maximum value for the intended service is exceeded with any device under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of the device under consideration and of all other electron devices in the equipment.

NOTES

† The regulation and/or series plate supply impedance must be such as to limit the peak current, with the tube considered a short circuit, to a maximum of 10 times the maximum plate current rating.

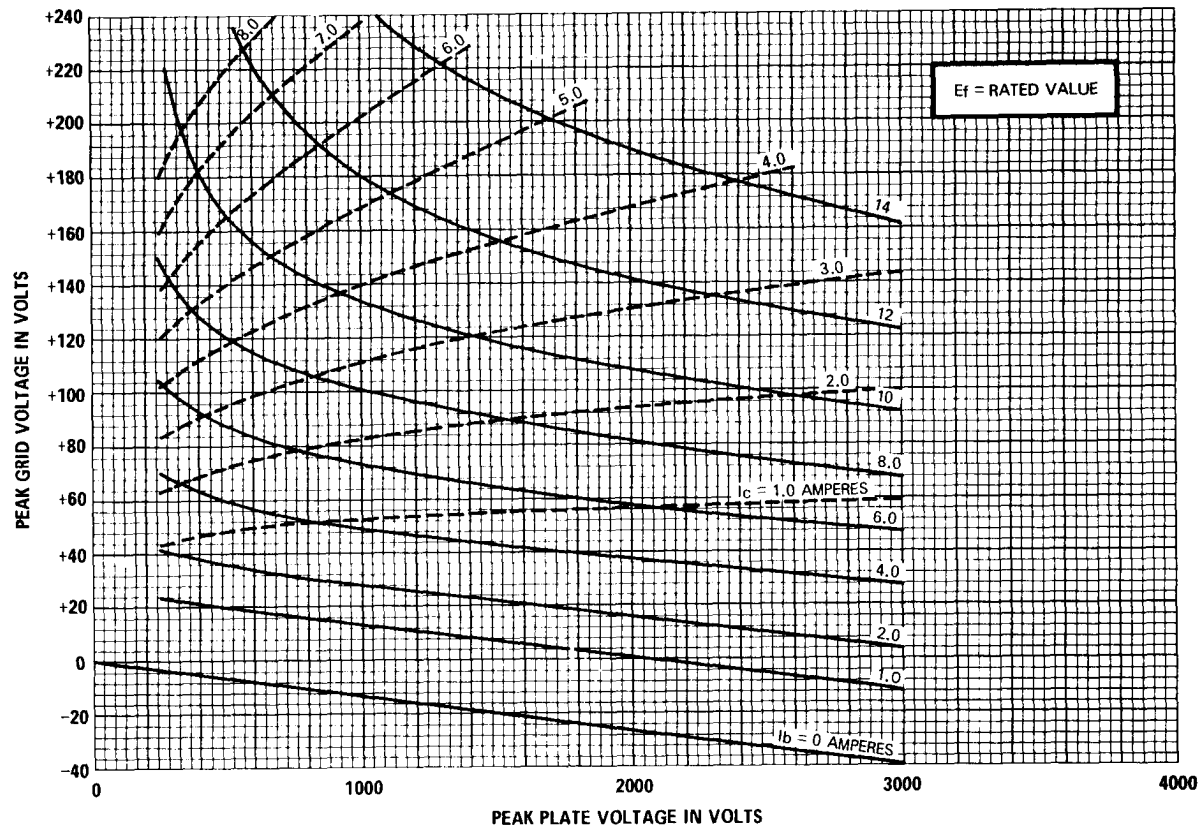
▲ For specific recommendations concerning higher temperature operation, contact your General Electric sales representative.

□ This assumes no thermal heat sinking to any insulator.

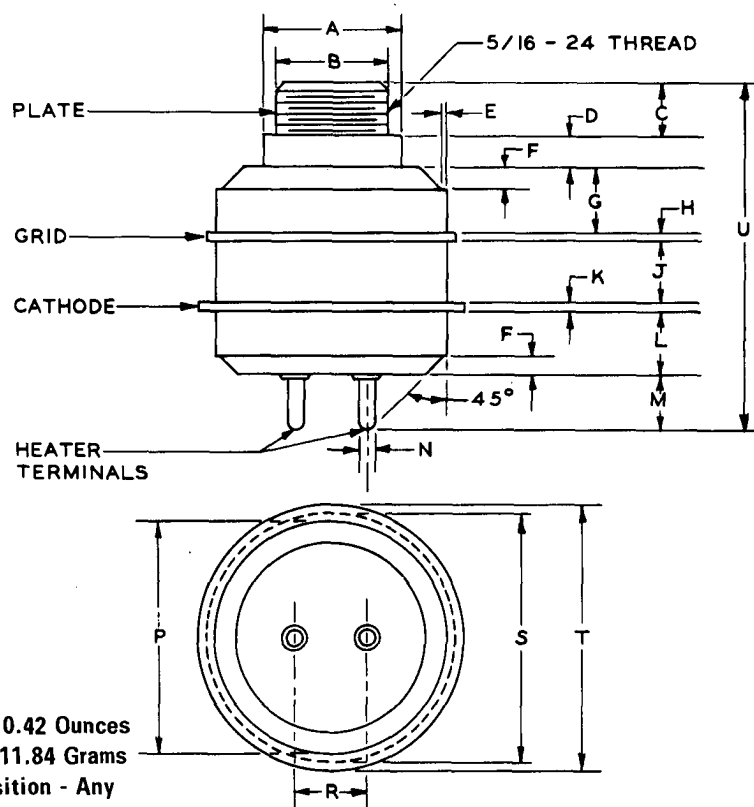
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AVERAGE CONSTANT-CURRENT CHARACTERISTICS



PHYSICAL DIMENSIONS



NOTES:

1. Net Weight - 0.42 Ounces
- 11.84 Grams
2. Mounting Position - Any

Ref.	INCHES			MILLIMETERS		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.387	0.390	0.393	9.830	9.906	9.982
B	---	---	0.311	---	---	7.899
C	0.140	0.150	0.160	3.556	3.810	4.064
D	0.098	0.103	0.108	2.489	2.616	2.743
E	---	0.005	---	---	0.127	---
F	0.040	0.050	0.060	1.016	1.270	1.524
G	0.182	0.187	0.192	4.623	4.750	4.877
H	0.025	0.028	0.031	0.635	0.711	0.787
J	0.169	0.174	0.179	4.293	4.420	4.547
K	0.025	0.028	0.031	0.635	0.711	0.787
L	0.170	0.175	0.180	4.318	4.445	4.572
M	0.170	0.175	0.180	4.318	4.445	4.572
N	0.047	0.050	0.053	1.194	1.270	1.346
P	0.635	0.650	0.665	16.13	16.51	16.89
R	0.186	0.200	0.214	4.724	5.080	5.436
S	0.698	0.703	0.708	17.73	17.86	17.98
T	0.748	0.753	0.758	19.00	19.13	19.25
U	0.979	1.020	1.061	24.87	25.91	26.95

TUBE PRODUCTS DEPARTMENT

GENERAL  ELECTRIC

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