



**ELECTRONIC
INNOVATIONS**
IN ACTION

MICROWAVE DEVICES

PRELIMINARY

—PRODUCT INFORMATION—

Page 1 12-70

Y-1251

Development Type *

Planar Triode

The Y-1251 is a high-mu triode of ceramic-and-metal planar construction intended for use as an oscillator or radio-frequency power amplifier up to 6000 megahertz.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	<u>Minimum</u>	<u>Bogey</u>	<u>Maximum</u>	<u>Units</u>	<u>Test Conditions</u>				
					<u>Ef</u> <u>V</u>	<u>Eb</u> <u>V</u>	<u>Ib</u> <u>Ma</u>	<u>Eg</u> <u>V</u>	<u>Rk</u> <u>Ohms</u>
Heater Voltage, AC or DC •	6.0	6.3	6.6	Volts					
Heater Current	---	240	---	Milliamperes	6.3	---	---	---	---
Plate Current	---	13.4	---	Milliamperes	6.3	150	---	---	82
Amplification Factor	---	65	---		6.3	150	---	---	82
Transconductance	---	13000	---	Micromhos	6.3	100	---	0	---
Grid Voltage, Cutoff	---	-4	---	Volts	6.3	150	0.1	---	---
Direct Interelectrode Capacitances ♦									
Grid to Plate: (g to p)	---	1.1	---	pf					
Input: g to (h+k)	---	1.7	---	pf					
Output: p to (h+k)	---	0.012	---	pf					
Cathode Heating Time	60	---	---	Seconds					

CW OSCILLATOR SERVICE

Frequency	5900	Megahertz
DC Plate Voltage	150	Volts
Grid Resistor	Adjusted	
Plate Current	15	Milliamperes
Grid Current	§	Milliamperes
Power Output	20	Milliwatts

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.
- ♦ Measured at 450 KHz using a grounded adapter that provides shielding between external terminals of tube.
- § To be determined.

GENERAL  ELECTRIC

Supersedes PI Sheet dated 10-68

ABSOLUTE-MAXIMUM RATINGS

Plate Voltage	200	Volts
Positive DC Grid Voltage	0	Volts
Negative DC Grid Voltage	50	Volts
Plate Dissipation	2.5	Watts
DC Grid Current	5.0	Milliamperes
DC Cathode Current	20	Milliamperes
Peak Cathode Current	80	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	50	Volts
Heater Negative with Respect to Cathode	50	Volts
Grid Circuit Resistance	10000	Ohms
Envelope Temperature at Hottest Point ▲	250	°C
Temperature Differential Between Two Adjacent Electrodes □	75	°C
Mechanical Vibration (20-2000 Hz Sinusoidal)	10	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.

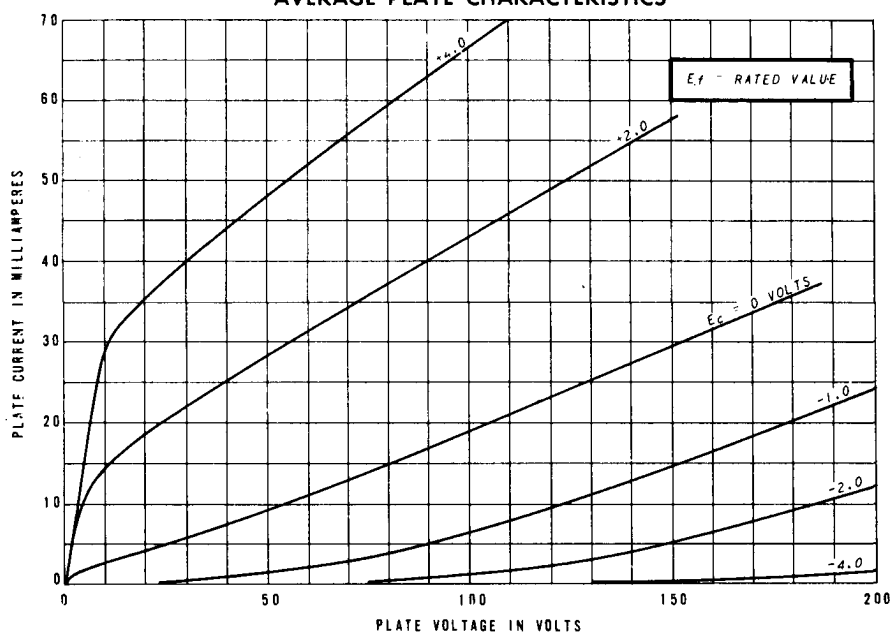
NOTES

- ▲ For specific recommendations concerning higher temperature operation, contact your General Electric sales representative.
- This assumes no thermal heat sinking to any insulator.

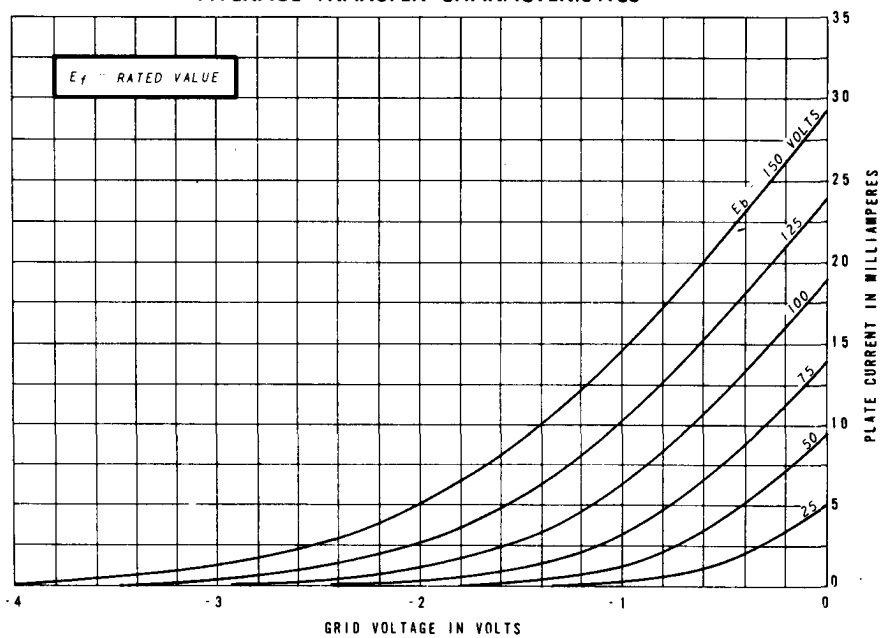
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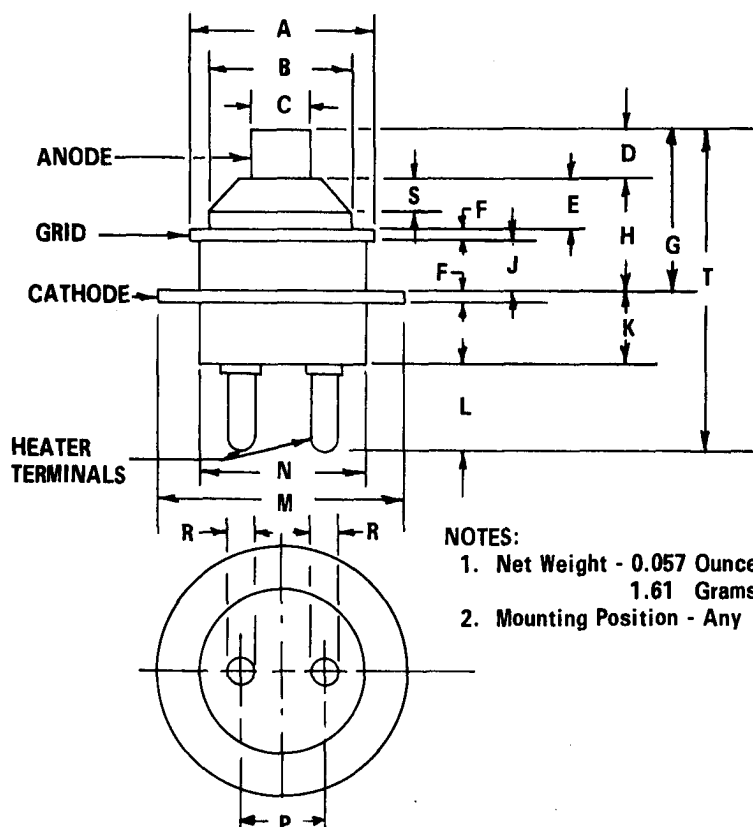
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



PHYSICAL DIMENSIONS



- NOTES:
1. Net Weight - 0.057 Ounces
1.61 Grams
 2. Mounting Position - Any

Ref.	INCHES			MILLIMETERS		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.357	0.360	0.363	9.068	9.144	9.220
B	---	---	0.285	---	---	7.239
C	0.108	0.110	0.112	2.743	2.794	2.845
D	0.095	0.100	0.105	2.413	2.540	2.667
E	0.095	0.100	0.105	2.413	2.540	2.667
F	0.025	0.028	0.031	0.635	0.711	0.787
G	0.315	0.325	0.335	8.001	8.225	8.509
H	0.216	0.224	0.232	5.486	5.690	5.893
J	0.094	0.098	0.102	2.388	2.489	2.591
K	0.143	0.150	0.157	3.632	3.810	3.988
L	0.165	0.175	0.185	4.191	4.445	4.699
M	0.476	0.480	0.484	12.09	12.19	12.29
N	---	---	0.330	---	---	8.458
P	0.130	0.136	0.142	3.302	3.454	3.607
R	0.048	0.051	0.054	1.219	1.295	1.372
S	---	0.060	---	---	1.524	---
T	0.623	0.650	0.677	15.82	16.51	17.20

TUBE PRODUCTS DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky 42301