

GE16841

Planar Triode

16841 is a metal-ceramic planar triode intended for use as a CW oscillator or amplifier. This tube is rated for long life as a local oscillator up to about 6000 megahertz.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

	Minimum	Bogey	Maximum	Units	Test Conditions				
					E _f V	E _b V	I _b Ma	E _g V	R _k Ohms
Heater Voltage, AC or DC*	5.4	5.7	6.0	Volts					
Heater Current	250	270	290	Milliamperes	5.7	---	---	---	---
Plate Current	9	14	19	Milliamperes	5.7	150	---	---	82
Amplification Factor	55	78	100		5.7	150	---	---	82
Transconductance	12000	17000	---	Micromhos	5.7	100	---	0	---
Grid Voltage, Cutoff	---	---	-5.5	Volts	5.7	150	0.1	---	---
Direct Interelectrode Capacitances *									
Grid to Plate: (g to p)	0.85	1.05	1.25	pf					
Input: g to (h+k)	1.5	2.1	2.7	pf					
Output: p to (h+k)	---	0.018	0.028	pf					
Cathode Heating Time	60	---	---	Seconds					

CW OSCILLATOR SERVICE

Frequency	4300	Megahertz
DC Plate Voltage	100	Volts
Grid Resistor	Adjusted	
Plate Current	15	Milliamperes
Grid Current	3	Milliamperes
Power Output	25	Milliwatts

NOTES

- * 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.

GE16841-2 is the same as the GE16841 with the following exceptions:

I_f: 250-300
I_b: 5.5-17.0
M_u: 75 min
S_m: 10000min
I_k: 100 min



**ELECTRONIC
INNOVATIONS
IN ACTION**

MICROWAVE DEVICES

Planar Triode

GE14811

The GE14811 is a planar triode intended for use as a plate-pulsed, C-band oscillator at relatively low plate voltage levels. It is useful in medium power applications where very short pulses are required, such as radar altimeters and beacons.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

				Units	Test Conditions				
	Minimum	Bogey	Maximum		Ef V	Eb V	Ib Ma	Eg V	Rk Ohms
Heater Voltage, AC or DC*	6.0	6.3	6.6	Volts	6.3	---	---	---	---
Heater Current	330	360	390	Milliamperes	6.3	200	---	---	100
Plate Current	20	27	34	Milliamperes	6.3	200	---	---	100
Amplification Factor	45	60	75		6.3	200	---	---	100
Transconductance	23000	29000	35000	Micromhos	6.3	200	---	---	100
Grid Voltage, Cutoff	---	-6.5	-10	Volts	6.3	200	0.1	---	100
Direct Interelectrode Capacitances •									
Grid to Plate: (g to p)	1.45	1.65	1.85	pf					
Input: g to (h+k)	3.5	4.4	5.3	pf					
Output: p to (h+k)	---	0.036	0.055	pf					
Cathode Heating Time	60	---	---	Seconds					

PLATE-PULSED OSCILLATOR SERVICE

Frequency	4300	Megahertz
Duty Factor	0.001	
Pulse Duration	0.1	Microsecond
Pulse Repetition Rate	10000	Pulses Per Second
Peak Positive-Pulse Supply Voltage	800	Volts
Plate Current: Average During Pulse	1.0	Amperes
Grid Current: Average During Pulse	0.2	Amperes
Power Output: Average During Pulse	190	Watts

NOTES

- * 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.

ABSOLUTE-MAXIMUM RATINGS

PLATE-PULSED OSCILLATOR SERVICE

Peak Positive-Pulse Plate Supply Voltage		
1 Microsecond Pulse Duration	1200	Volts
4 Microsecond Pulse Duration	800	Volts
Duty Factor of Plate Pulse	0.001	
Plate Current: Average During Pulse \bar{I}_p	1.0	Amperes
Negative Grid Voltage: Average During Pulse	50	Volts
Grid Current: Average During Pulse	0.5	Amperes
Plate Dissipation	6.5	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 Δ	250	$^{\circ}\text{C}$
Temperature Differential Between Two Adjacent Electrodes Δ	75	$^{\circ}\text{C}$
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

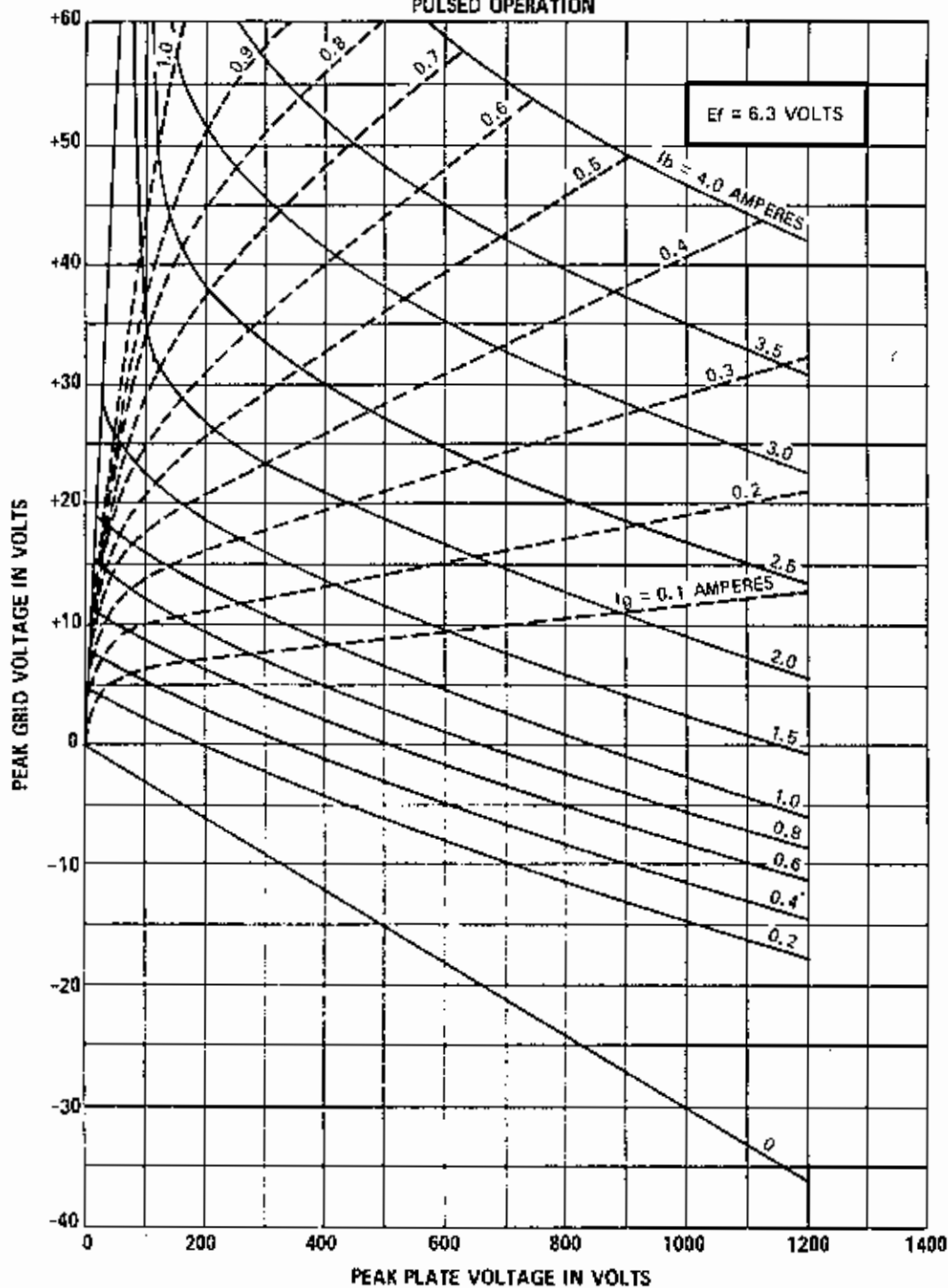
- b The regulation and/or series plate supply impedance must be such as to limit the peak current, with the tube considered a short circuit, to a maximum of 10 times the maximum plate current rating.
- Δ For specific recommendations concerning higher temperature operation, contact your General Electric sales representative.
- \diamond This assumes no thermal heat sinking to any insulator.

The devices and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of devices by General Electric Company conveys any license under patent claims covering combinations of these devices with other devices or elements in the

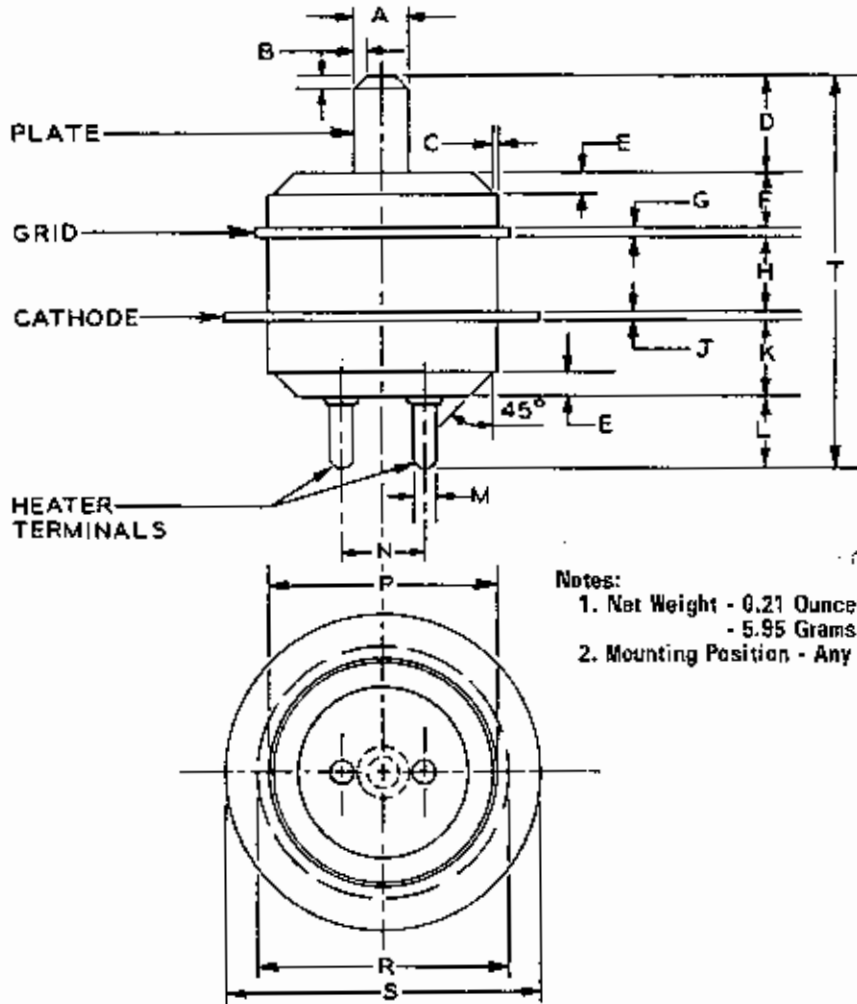
absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of these devices with other devices or elements by any purchaser or others.

AVERAGE CONSTANT-CURRENT CHARACTERISTICS

PULSED OPERATION



PHYSICAL DIMENSIONS



- Notes:
 1. Net Weight - 0.21 Ounces
 - 5.95 Grams
 2. Mounting Position - Any

Ref.	INCHES			MILLIMETERS		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.122	0.125	0.128	3.089	3.175	3.251
B	---	0.030	---	---	0.762	---
C	---	0.005	---	---	0.127	---
D	0.220	0.225	0.230	5.588	5.715	5.842
E	0.040	0.050	0.060	1.016	1.270	1.524
F	0.120	0.125	0.130	3.048	3.175	3.302
G	0.025	0.028	0.031	0.635	0.711	0.787
H	0.167	0.172	0.177	4.242	4.369	4.496
J	0.025	0.028	0.031	0.635	0.711	0.787
K	0.170	0.175	0.180	4.318	4.445	4.572
L	0.170	0.175	0.180	4.318	4.445	4.572
M	0.047	0.050	0.053	1.194	1.270	1.346
N	0.185	0.200	0.215	4.699	5.080	5.461
P	0.535	0.550	0.565	13.59	13.97	14.35
R	0.598	0.603	0.608	15.19	15.32	15.44
S	0.748	0.753	0.758	19.00	19.13	19.25
T	0.897	0.928	0.959	22.78	23.57	24.36

TUBE PRODUCTS DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky 42301