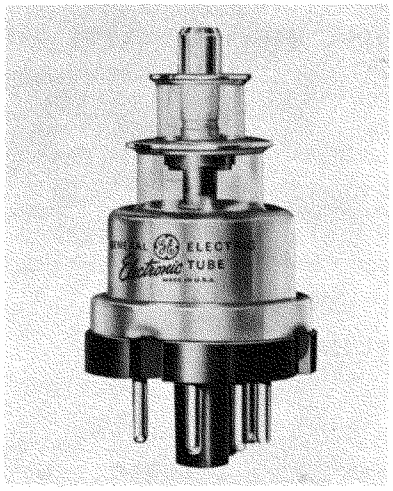
2C40-A
PLANAR TRIODE



DESCRIPTION AND RATING

The 2C40-A is a triode of lighthouse construction designed for use as a CW oscillator, radio-frequency amplifier, or plate-pulsed oscillator at frequencies as high as 3370 megacycles.

The radio-frequency cathode connection is made through a disk-type capacitor which is incorporated in the tube. This results in a low-impedance radio-frequency path from the cathode to the external circuit.

The envelope construction results in low losses, provides convenient electrode contact surfaces, and enables the tube to fit easily into coaxial circuits.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential		
Heater Characteristics and Ratings		
Heater Voltage, AC or DC*	6.3 ± 0.3	Volts
Heater Current†	0.75	Amperes
Direct Interelectrode Capacitances‡		
Grid to Plate: (g to p)	1.3	pf
Grid to Cathode: (g to k)	2.15	pf
Plate to Cathode	0.03	pf
Cathode RF Connection to Cathode	100	pf

MECHANICAL

Mounting Position—Any		
Net Weight, approximate	1.2	Ounces
Cooling—Convection and Conduction		

MAXIMUM RATINGS

ABSOLUTE-MAXIMUM VALUES

Radio-Frequency Power Amplifier or Oscillator—Class C		
Frequency	3370	Megacycles
DC Plate Voltage	500	Volts
DC Grid Voltage	−50	Volts
DC Plate Current	25	Milliamperes
DC Grid Current	8.0	Milliamperes
Plate Dissipation	6.5	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts
Cathode-Cathode RF Connection Voltage		
Cathode RF Connection Positive with Respect to Cathode	90	Volts
Cathode RF Connection Negative with Respect to Cathode	90	Volts
Envelope Temperature at Hottest Point	175	C

PLATE-PULSED OSCILLATOR

Cathode Heating Time, minimum	60	Seconds
Frequency	3370	Megacycles
Peak Positive-Pulse Plate Supply Voltage	1400	Volts
Duty Factor of Plate Pulse§	0.002	
Pulse Duration	1.5	Microseconds
Plate Current		
Average§	3.0	Milliamperes
Average During Plate Pulse	2.0	Amperes
Negative Grid Voltage		
Average During Plate Pulse	100	Volts
Grid Current		
Average§	1.5	Milliamperes
Average During Plate Pulse	1.0	Amperes
Plate Dissipation§	4.0	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts
Cathode-Cathode RF Connection Voltage		
Cathode RF Connection Positive with Respect to Cathode	90	Volts
Cathode RF Connection Negative with Respect to Cathode	90	Volts
Envelope Temperature at Hottest Point	175	C

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Heater Voltage	6.3	Volts	Amplification Factor	35	
Plate Voltage	250	Volts	Transconductance	5100	Micromhos
Cathode-Bias Resistor	200	Ohms	Plate Current	17	Milliamperes

RADIO-FREQUENCY OSCILLATOR

Frequency	3370	Megacycles	DC Grid Current, approximate	0.5	Milliamperes
DC Plate Voltage	250	Volts	DC Plate Current	20	Milliamperes
Grid Resistor	10000	Ohms	Power Output	75	Milliwatts
DC Grid Voltage	−5.0	Volts			

PLATE-PULSED OSCILLATOR

Frequency	3000	Megacycles
Duty Factor	0.001	
Pulse Duration	1.0	Microseconds
Peak Positive-Pulse Plate Supply Voltage	1400	Volts
Plate Current		
Average During Plate Pulse	1.0	Amperes
Useful Power Output		
Average	0.3	Watts
Average During Plate Pulse	300	Watts

* 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.

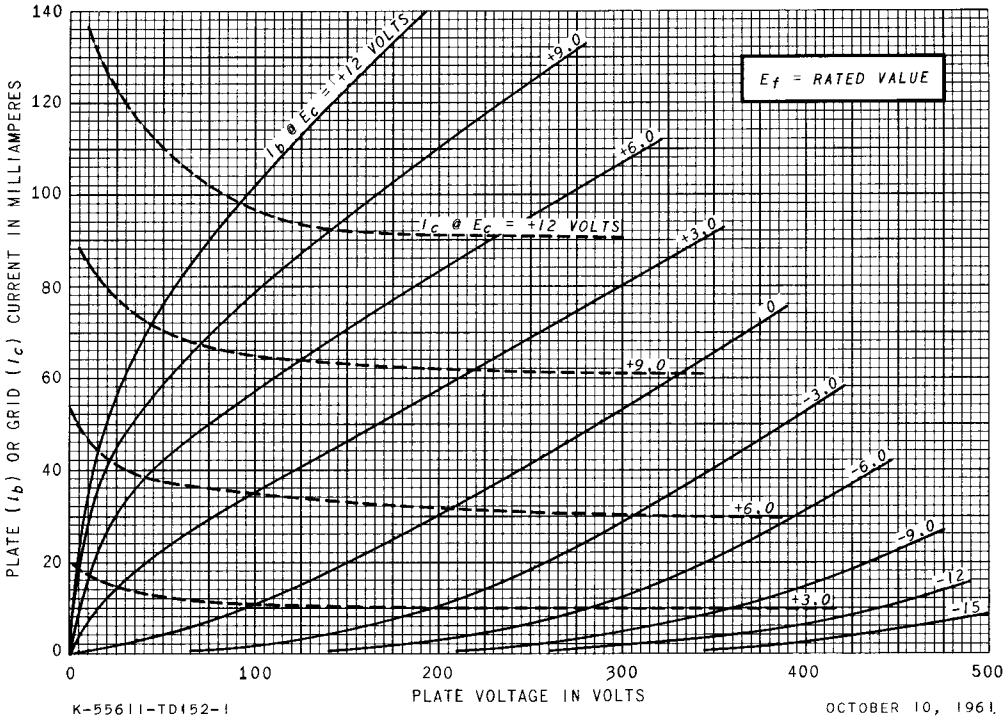
† Heater current of a bogey tube at Ef = 6.3 volts.
‡ Without external shield.
§ In any 500 microsecond interval.

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

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

AVERAGE PLATE CHARACTERISTICS



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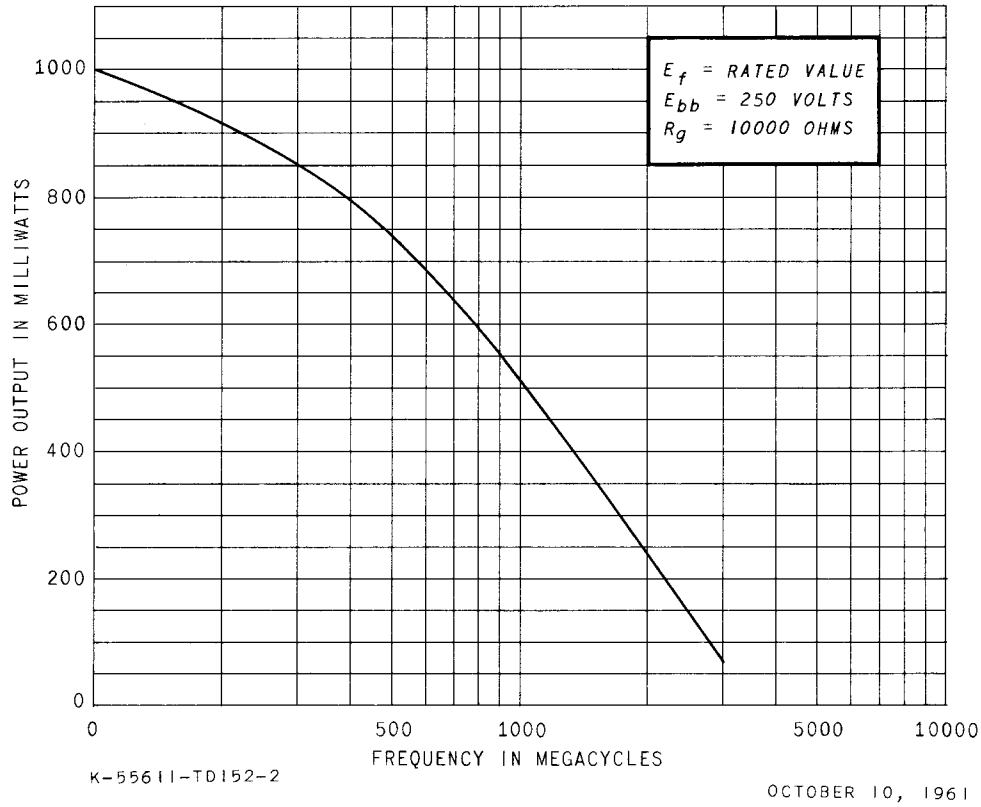
OCTOBER 10, 1961

POWER OUTPUT VS. FREQUENCY



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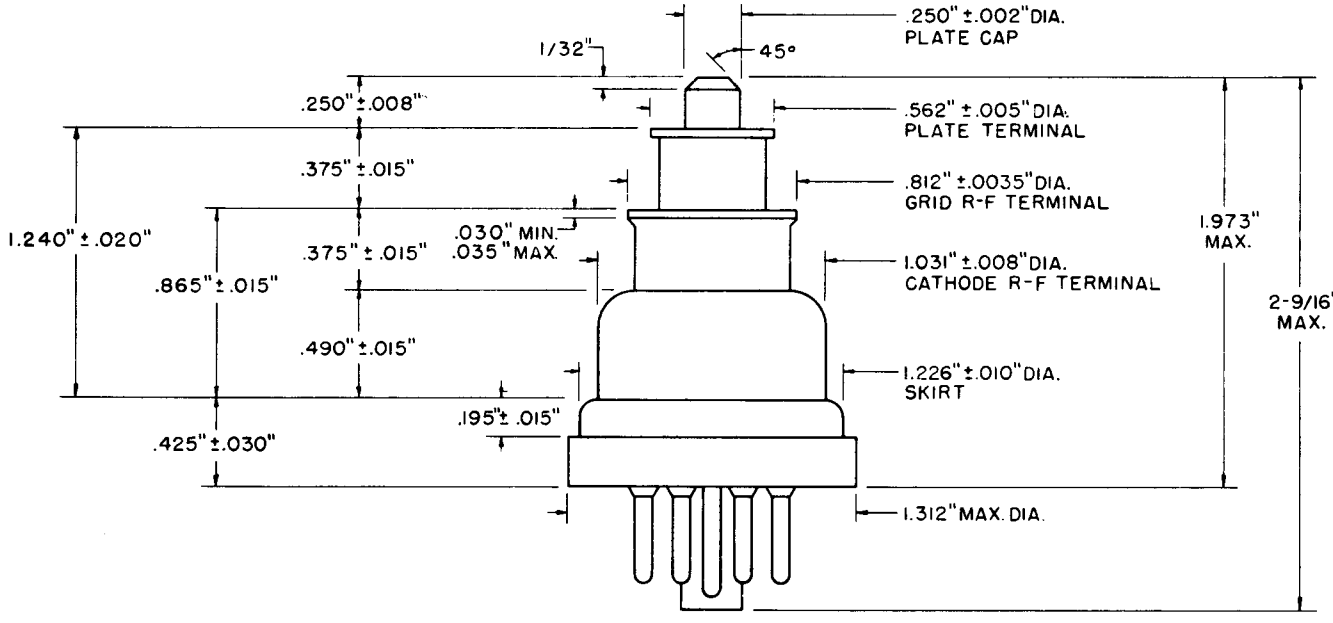
OCTOBER 10, 1961

NOTES:

1. Glass shall not protrude beyond edge of anode RF terminal or grid RF terminal.
2. Plate cap and grid RF terminal to be concentric with respect to the cathode RF terminal within 1/64 inch (run-out of 1/32 inch maximum).

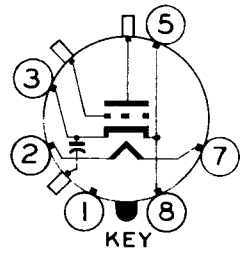
PHYSICAL DIMENSIONS



TERMINAL CONNECTIONS

Pin 1—Internal Connection—Do Not Use
Pin 2—Heater
Pin 3—Cathode
Pin 5—Cathode
Pin 7—Heater
Pin 8—Cathode
Top Cap—Plate
Disk Terminal—Grid
Shell—Cathode RF Terminal

BASING DIAGRAM



RECEIVING TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky