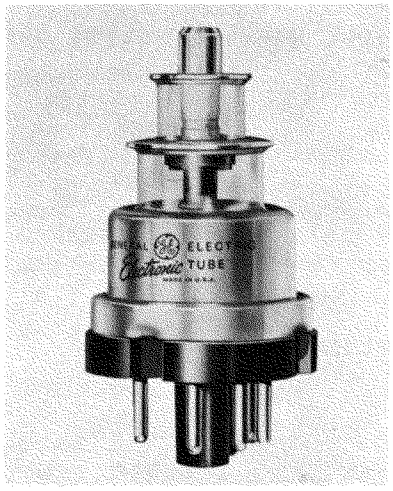
2C43
PLANAR TRIODE



DESCRIPTION AND RATING

The 2C43 is a triode of lighthouse construction designed for use as a Class C radio-frequency amplifier or 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 cathode to the external circuit.

The envelope construction results in low losses, provides convenient 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	0.9†	Amperes
Direct Interelectrode Capacitances‡		
Grid to Plate: (g to p)	1.8	pf
Grid to Cathode: (g to k)	3.0	pf
Plate to Cathode: (p to k), maximum	0.04	pf
Cathode RF Connection to Cathode	100	pf

MECHANICAL

Mounting Position—Any		
Net Weight, approximate	1	Ounce
Cooling—Convection and Conduction		

MAXIMUM RATINGS

ABSOLUTE-MAXIMUM VALUES

RADIO-FREQUENCY POWER AMPLIFIER AND OSCILLATOR—CLASS C

Frequency	1500	Megacycles
DC Plate Voltage	500	Volts
DC Plate Current	40	Milliamperes
DC Cathode Current	55	Milliamperes
Plate Dissipation	12	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	3500	Volts
Duty Factor of Plate Pulse	0.006	
Pulse Duration	10	Microseconds
Plate Current		
Average During Plate Pulse	2.75	Amperes
Cathode Current		
Average During Plate Pulse	4.0	Amperes
Plate Dissipation	12	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

Supersedes ET-T1463 dated 9-57

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Heater Voltage	6.3	Volts
Plate Voltage	250	Volts
Cathode-Bias Resistor	100	Ohms
Amplification Factor	50	
Transconductance	8100	Micromhos
Plate Current	21	Milliamperes

PUSH-PULL CW OSCILLATOR, VALUES FOR TWO TUBES

Frequency	350	350	Megacycles
Heater Voltage	5.8	5.8	Volts
DC Plate Voltage	360	470	Volts
Grid Resistor	1000	1000	Ohms
DC Plate Current	28	38	Milliamperes
Power Output, approximate	4.7	9.0	Watts

PUSH-PULL RADIO-FREQUENCY POWER AMPLIFIER—CLASS C—PLATE MODULATED, VALUES FOR TWO TUBES

Frequency	300	Megacycles
Heater Voltage	5.8	Volts
DC Plate Voltage	350	Volts
Grid Resistor	1200	Ohms
DC Grid Voltage	−50	Volts
DC Grid Current, approximate	40	Milliamperes
DC Plate Current	48	Milliamperes
Driving Power, approximate	3	Watts
Power Output	10	Watts

PUSH-PULL FREQUENCY TRIPLER, VALUES FOR TWO TUBES

Output Frequency	300	Megacycles
Heater Voltage	5.8	Volts
DC Plate Voltage	350	Volts
Grid Resistor	2700	Ohms
DC Grid Voltage	−80	Volts
DC Grid Current, approximate	30	Milliamperes
DC Plate Current	50	Milliamperes
Driving Power, approximate	3	Watts
Power Output	4.4	Watts

PLATE-PULSED OSCILLATOR

Frequency	3370	Megacycles
Duty Factor	0.001	
Pulse Duration	1.0	Microseconds
Pulse Repetition Rate	1000	Pulses per Second
Peak Positive-Pulse Plate Supply Voltage	3000	Volts
Grid-Bias Resistor	100	Ohms
Plate Current		
Average	2.5	Milliamperes
Average During Plate Pulse	2.5	Amperes
Power Output		
Average During Plate Pulse	1.75	Kilowatts

* The equipment designer should design the equipment so that the heater voltage is centered at a value suitable for the application. Heater voltage variations about the center value should be kept as small as practical and should not, in any case, exceed ±5%. The optimum center value of heater voltage depends on the cathode current and on the other parameters of circuit design and operation. For specific recommendations, contact your General Electric tube sales representative.

† Heater current of a bogey tube at Ef = 6.3 volts.

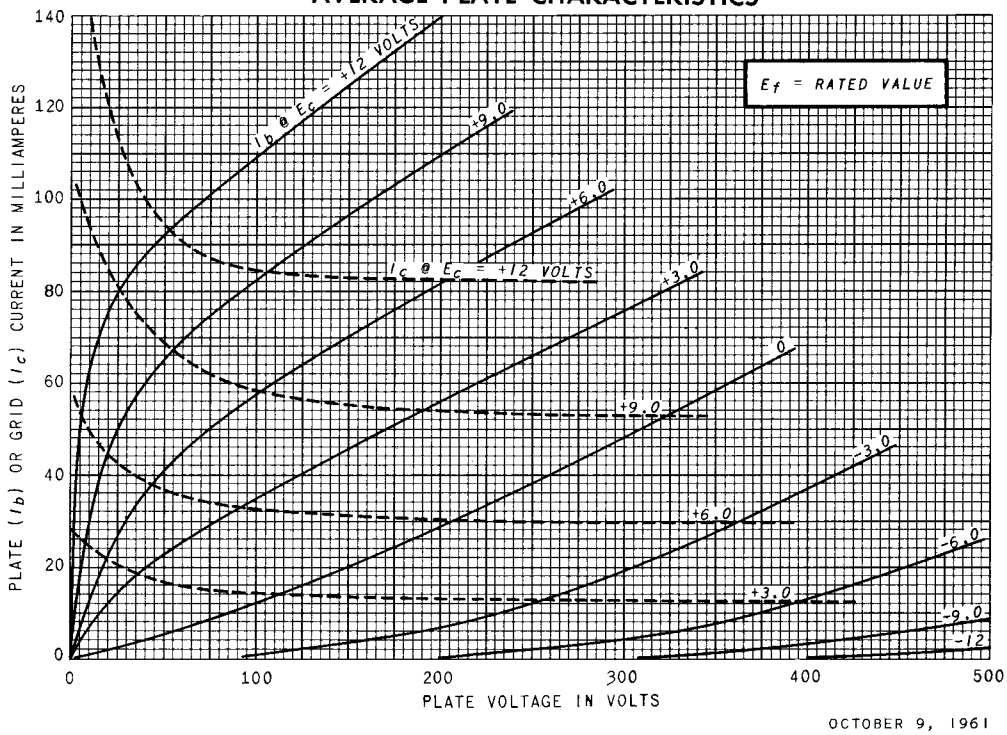
‡ Without external shield.

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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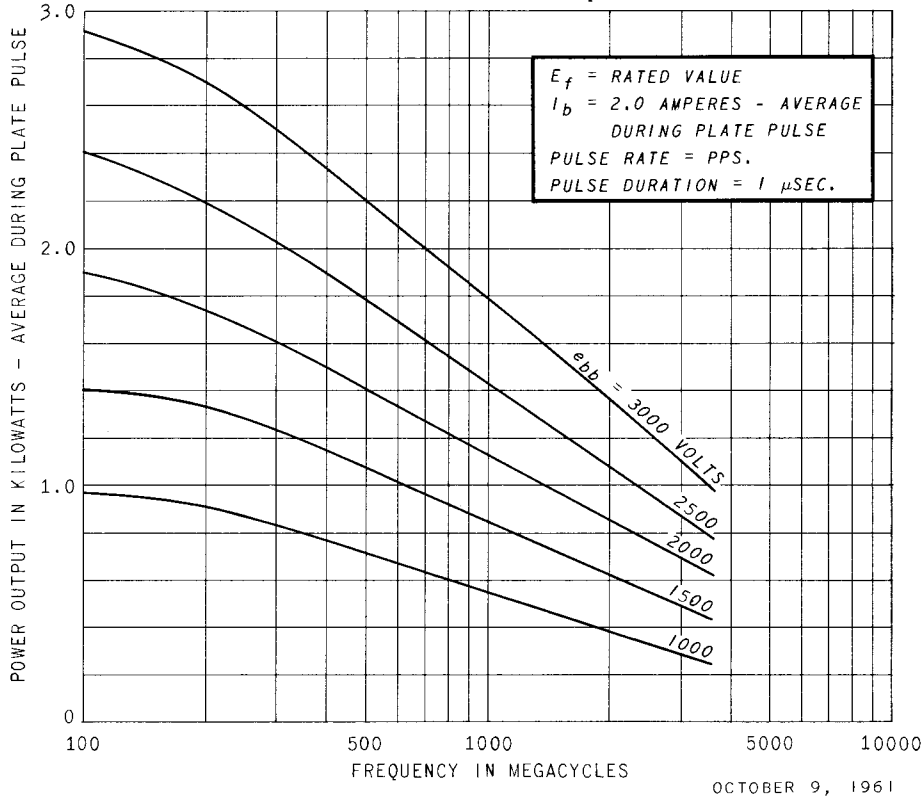
APPROXIMATE PLATE-PULSED OSCILLATOR PERFORMANCE

POWER OUTPUT VS. FREQUENCY



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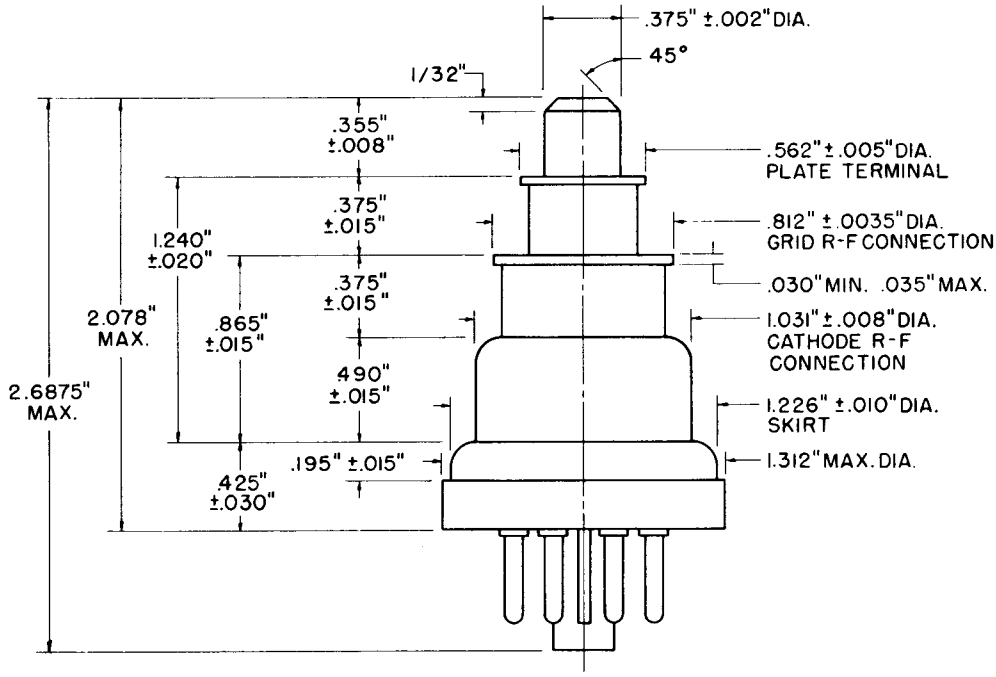
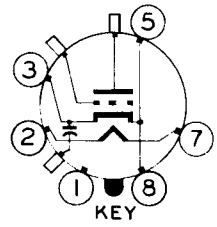
NOTE 1
Glass shall not protrude beyond edge of plate terminal or grid RF connection.

NOTE 2
Plate terminal and grid RF connection to be concentric with respect to the cathode RF connection within 1/64 inch (runout 1/32 inch, maximum).



BASING DIAGRAM



TERMINAL CONNECTIONS

Pin	Connection
1	Internal Connection
2	Heater
3	Cathode
5	Cathode
7	Heater
8	Cathode