HIGH VOLTAGE
PULSE MODULATOR TRIODE

DESCRIPTION

The CENTRAL tube type 6544 is a forced-air-cooled high vacuum tube, specifically designed for radar pulse modulation applications. The tube can capably provide 1 megawatt output pulses with 8 kilowatts peak driving power. The tube design features a beamed oxide coated cathode structure, a squirrel cage control grid, a shield grid internally connected to the cathode and a forced air cooled anode capable of dissipating 1 kilowatt continuously.

SPECIFICATIONS

MECHANICAL
Mounting Position (support tube by anode radiator only)..................................................... Any
Type of Cooling ....................................................... Forced-air (1)
Air flow on anode (at 75°C and 14.7 psi ambient atmospheric pressure)........................................ 150 cfm (2)
Static pressure, inches of water ........................................... 0.8
Air flow on grid radiator, minimum ........................................ 5 cfm
Maximum incoming air temperature ........................................ 75°C
Maximum Glass Temperature ........................................ 175°C (1)
Net Weight, approximate ........................................ 12 pounds

ELECTRICAL
Heater Voltage ....................................................... 6.0 ± 5% volts
Heater Current ....................................................... 60 amperes
Heater Starting Current, maximum ........................................ 300 amperes
Cathode Warm-Up Time (3) ........................................ 10 minutes
Amplification Factor ..................................................... 90
Interelectrode Capacitances:
   Grid-Anode, maximum ........................................... 4 uuf
   Grid-Cathode ....................................................... 250 uuf
   Anode-Cathode ....................................................... 40 uuf
MAXIMUM RATINGS

Maximum Ratings, Absolute Values
Pulse Width (4 & 5) ................ 6 microseconds
Duty Factor .......................... 0.03
Peak Anode Voltage ............... 25 kilovolts
DC Anode Voltage .................. 20 kilovolts
DC Grid Voltage ..................... -600 volts
Peak Positive Grid Voltage ........ 1500 volts
Peak Cathode Current .............. 70 amperes
DC Anode Current .................. 250 milliamperes
Grid Dissipation ................... 75 watts
Anode Dissipation (150 cfm @ 0.8") water) .......... 1000 watts

Typical Operation: Pulse Modulator or Amplifier
Class C (5) .......................... 18 kilovolts
DC Anode Voltage .................. -500 volts
DC Grid Voltage ..................... 1200 volts
Pulse Grid Current ................. 65 amperes
Pulse Anode Current .............. 5 amperes
Load Resistance .................... 225 ohms
Duty Factor ......................... 0.015
Pulse Power Input ................. 12 kilowatts
Pulse Power Output ................ 1000 kilowatts

(1) Sufficient air cooling must be provided to keep glass seal temperatures at less than 175°C under all conditions of operation.
(2) For air-flow requirements at other temperatures and pressures, consult the Central Engineering Department.
(3) For accelerated cathode warm-up, the heater may be energized at 7 volts for 5 minutes and then reduced to 6 volts for high-voltage operation. If a heater stand-by voltage of 5 volts is used, the minimum cathode warm-up time is 1 minute at 6 volts.
(4) Under certain conditions of operation, longer pulses may be possible.
(5) For information concerning specific tube problems or applications not covered, consult the Central Engineering Department.