HARD TUBE PULSE MODULATOR TYPE WL-7413

The WL-7413 is a large three-electrode, immersion cooled tube designed to deliver 9 megawatts peak pulse power as a hard-tube modulator. The anode is capable of dissipating 14 kilowatts, exclusive of filament heating power, when oil cooled or 50 kilowatts when water cooled. The cathode is a multiple-strand, thoriated-tungsten filament which may be operated either single phase or 3 phase.

ELECTRICAL:
Cathode: Multiple-Strand, Thoriated-Tungsten Filament
Filament:
Voltage:
Single Phase Connection 12 Volts
3 Phase Connection (to neutral) 12 Volts
Current:
Single Phase Connection 309 Amperes
3 Phase Connection (per phase) 103 Amperes
Minimum Filament Heating Time 15 Seconds
Amplification Factor 21
Direct Inter-electrode Capacitances (approx.)
Grid to Plate 42 μμf
Grid to Filament 95 μμf
Plate to Filament 6 μμf

MECHANICAL:
Mounting Position: Vertical, Anode Down
Net Weight (approx.) 25 Pounds
Shipping Weight (approx.) 90 Pounds
Cooling:
Type: Oil
Maximum Fluid Temperature 80 °C
Maximum Bulb & Seal Temperature 180 °C
Minimum Water Flow 30 G.P.M.

MAXIMUM RATINGS
Absolute Maximum Values
DC Plate Voltage 60 max. Kilovolts
DC Grid Voltage -3500 max. Volts
Peak Positive Grid Voltage 2500 max. Volts
Peak Pulse Plate Current 150 max. Amperes
Peak Pulse Grid Current 50 max. Amperes
Plate Dissipation:
Oil Cooled 14 max. Kilowatts
Water Cooled 50 max. Kilowatts
Grid Dissipation 1.0 max. Kilowatts
Pulse Length 1000 max. μseconds
Duty Factor 0.01 max.
Peak Pulse Cathode Current 200 max. Amperes

X-Ray Warning: The Maximum Ratings of the WL-7413 permit operation at voltages in excess of 16 KY. Therefore equipment design considerations should include the possible generation of soft x-rays.

FILAMENT EMISSION LIFE CHARACTERISTIC

FILAMENT CONNECTIONS
SINGLE PHASE AC SUPPLY
THREE PHASE AC SUPPLY

FILAMENT TERMINALS 2, 4, 6 & 7 PAINTED BLACK
GRID TERMINALS 1, 3 & 5 PAINTED RED

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK

High Vacuum Amplifier Section

from JEDEC release #2656, Dec. 7, 1959