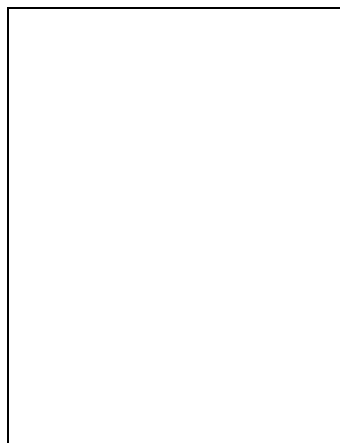


7649

Power Tube

Beam Power Tube

CERMOLOX®
 Ruggedized
 4.5 kW Peak Output at 1215 MHz
 Matrix-Type Cathode
 Forced-Air Cooled



BURLE 7649 is a very small, forced-air-cooled, UHF beam power tube designed for applications in which dependable performance under severe shock and vibration is essential. It is intended for use in grid-and-screen pulsed and plate-and screen pulsed RF oscillator and amplifier service in compact airborne, mobile, and stationary equipment.

The 7649 has a maximum plate dissipation of 115 watts. It can be operated with full ratings at frequencies through the Aeronautical Radio-Navigation Band of 960 to 1215 MHz and is useful to above 2000 MHz.

When used under CCS conditions as a plate-and-screen-pulsed RF amplifier in a cathode-drive circuit at 1215 MHz with 10-microsecond pulse duration and duty factor of 0.01, the 7649 is capable of delivering about 4500 watts useful power output at peak of pulse with a drive power of 450 watts at peak of pulse.

As a grid-and-screen-pulsed RF amplifier under CCS conditions in a cathode-drive circuit at 1215 MHz with 10-microsecond pulse duration and 0.01 duty factor, the 7649, operated with peak power input of 4500 watts, can provide useful power output of about 2300 watts at peak of pulse with 460 watts drive power at peak of pulse.

Cermolox construction is featured in the design of the 7649: precision-aligned grids, ceramic-metal structure, and unitized cylindrical-electrode-and-terminal design. Precision-alignment of the grids minimizes control-grid and screen-grid currents and permits high efficiency operation with relatively low anode voltage, giving large power output with small driving power. High-alumina ceramic provides strength, close tolerances, high-temperature operation, and an excellent RF "window" to reduce RF losses within the tube. Unitized electrode-and-terminal construction adds strength, accurate assembly, and high electrical and thermal conductivity

between electrode and terminal. The cylindrical terminals lend themselves to either coaxial or strip-line circuits.

Other structural features of the 7649 are sturdy heater, axial ceramic pin, and integral radiator. The axial ceramic pin rigidly holds grid No.1, grid No.2, and cathode fixed with respect to each other. The integral stacked-disc-type finned radiator offers compactness and convenient transverse forced-air cooling.

This data sheet gives application information unique to the BURLE 7649. Information contained in the following publications will help to assure longer tube life and safer operation:

- TP-105 Application Guide for BURLE Power Tubes.
- TP-118 Application Guide for Forced-Air Cooling of BURLE Power Tubes.
- TP-122 Screen-Grid Current, Loading and Bleeder Considerations.

For copies of these publications, contact your BURLE representative or write BURLE INDUSTRIES, INC., Tube Products Division, 1000 New Holland Avenue, Lancaster, PA 17601 -5688.

General Data

Electrical

Heater, for Matrix-Type, Oxide-Coated Unipotential Cathode:

Voltage (AC or DC).....	6.3 ±10%	V
Current.....	3.2	A
Minimum heating time.....	2	minutes

Mu-Factor, Grid No. 2 to Grid No. 1 for Anode Volts = 1000, Grid No. 2 Volts = 500, and Anode mA= 115..... 18

Direct Interelectrode Capacitances:¹

Grid No.1 to anode	0.16	max.	pF
Grid No.1 to cathode & heater.....	14		pF
Anode to cathode & heater.....	0.060	max.	pF
Grid No.1 to grid No.2.....	20		pF
Grid No.2 to anode.....	6.3		pF
Grid No.2 to cathode & heater.....	1.30	max.	pF



