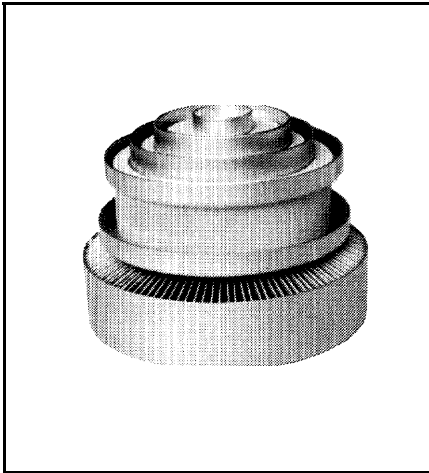


# 4665 Power Tube



## UHF Pulsed Power Amplifier Tube

- Cermolox®
- Forced-Air-Cooled
- Coaxial Terminals
- Full Input to 1215 MHz
- 65kW Peak Pulsed Power Output
- Controlled Interelectrode Capacity

The BURLE 4665 is designed for use as a reliable UHF pulsed power amplifier at frequencies up to 1215 MHz. It is well suited for use in compact equipment for airborne, mobile or stationary service. Its design applications include telemetry, which may employ pulsed-amplitude, pulse position, pulse duration, or pulse code modulation, and accelerators which may require unique waveforms. The 4665 and variants of this basic design can also be useful in pulse modulation, CW amplifiers, regulators, and other special services.

The 4665 features sturdy Cermolox construction and a unipotential cathode of the oxide-coated, matrix type to minimize tube inductance and feed-thru capacitances. Its coaxial, forced-air-cooled radiator with louvered fins, reduces noise to a minimum and insures against spurious outputs.

It features a controlled interelectrode capacity. Its basic design assures high voltage integrity and the thorough tube processing combined with conservative ratings obtains reliable, long life performance.

This data sheet gives application information unique to the BURLE 4665. General information, covering installation and operation of this tube type is given in the "Application Guide for BURLE PowerTubes" TP105. Close attention to the instructions contained therein will assure longer tube life, safer operation, less equipment downtime and fewer tube handling accidents.

### General Data

#### Electrical

Heater-Cathode

Type .....	Unipotential Oxide-Coated Matrix	
Voltage <sup>1</sup> .....	5.5 typ.	V
	5.8 max.	V
Current at 5.5 volts <sup>2</sup> .....	17.3	A
Minimum heating time .....	180	S

Mu Factor<sup>3</sup> (Grid no.2 to Grid no.1)

Direct Interelectrode Capacitances:

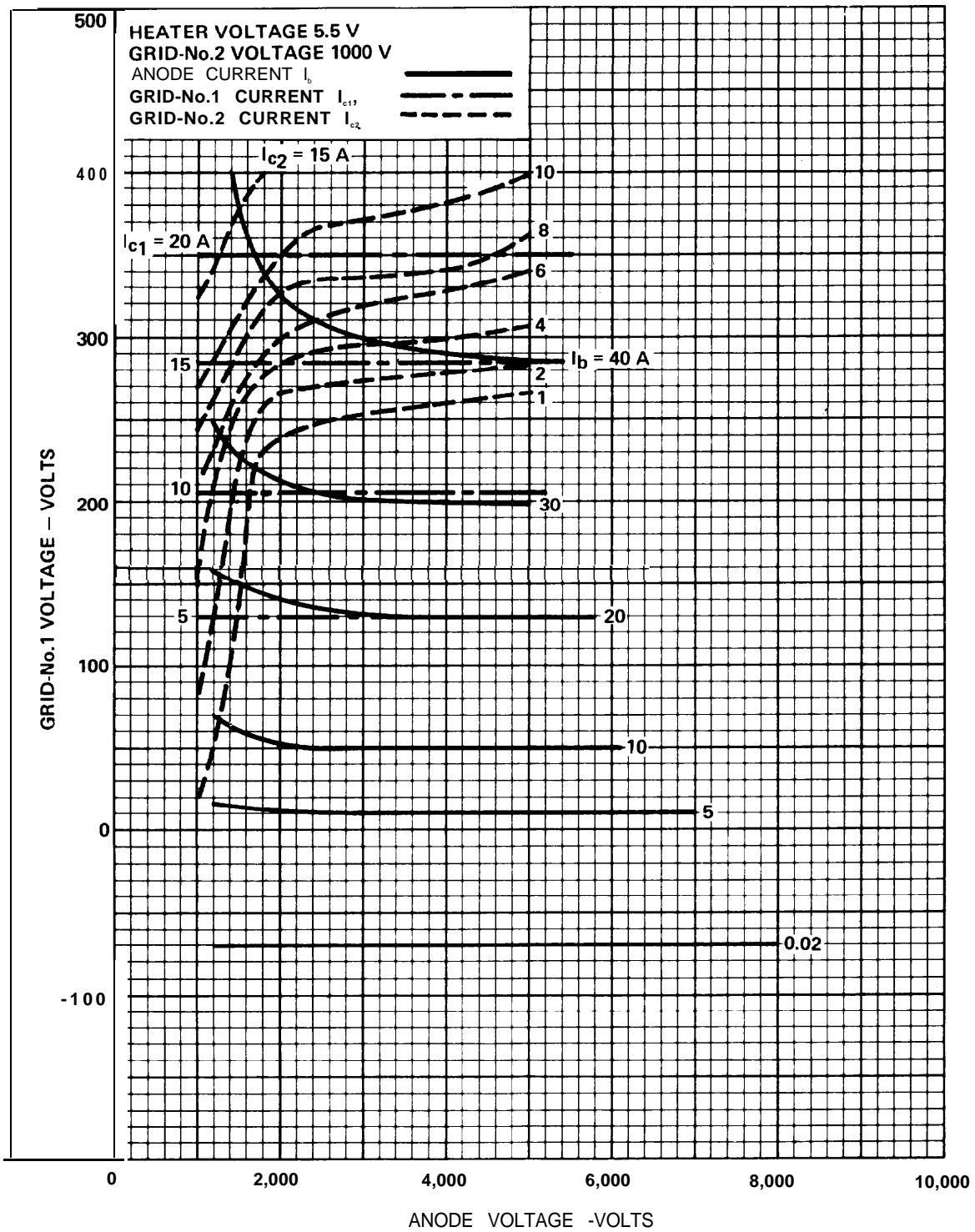
Grid no.1 to Anode <sup>4</sup> .....	0.17 max.	pF
Grid no.1 to Heater-Cathode .....	42	pF
Anode to Heater-Cathode <sup>4,5</sup> .....	0.017 max.	pF
Grid no.2 to Anode .....	16.8	pF
Grid no.1 to Grid no.2 .....	55	pF
Grid no.2 to Heater-Cathode <sup>6</sup> .....	1.4 max.	pF

#### Mechanical

Operating Attitude .....	Any
Maximum Height .....	84.8 mm (3.34 in)
Maximum Diameter .....	95.2 mm (3.75 in)
Socket .....	Jettron CD89-095F
Weight .....	2.0 lb

#### Thermal

Maximum Seal Temperature <sup>7</sup> (Anode, Grid no.2, Grid no.1 Heater, Heater-Cathode) .....	250 °C
Maximum Anode Core Temperature <sup>7</sup> .....	250 °C



92LM-3796

Figure 1 - Typical Constant Current Characteristics

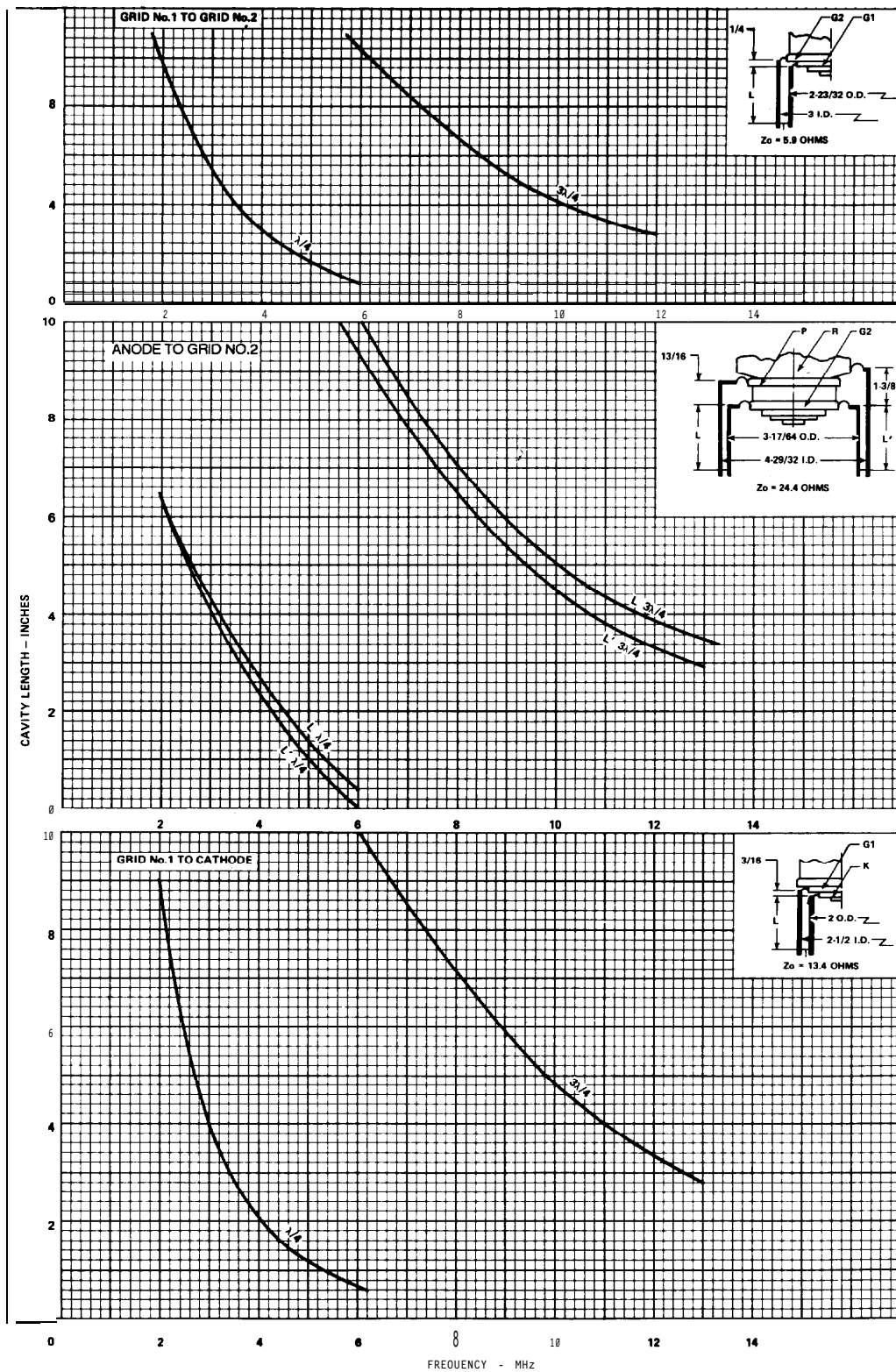
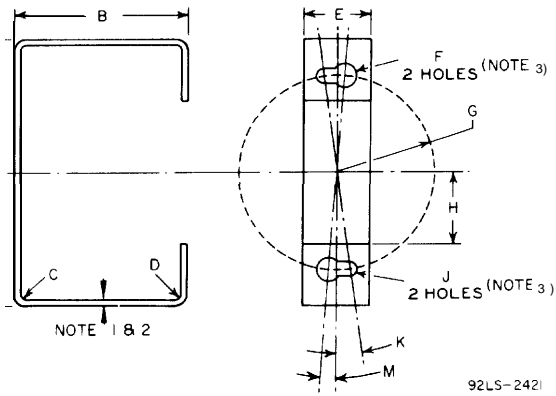


Figure 2 - Tuning Characteristics



**Note 1** - Material 1/16" thick cold rolled steel

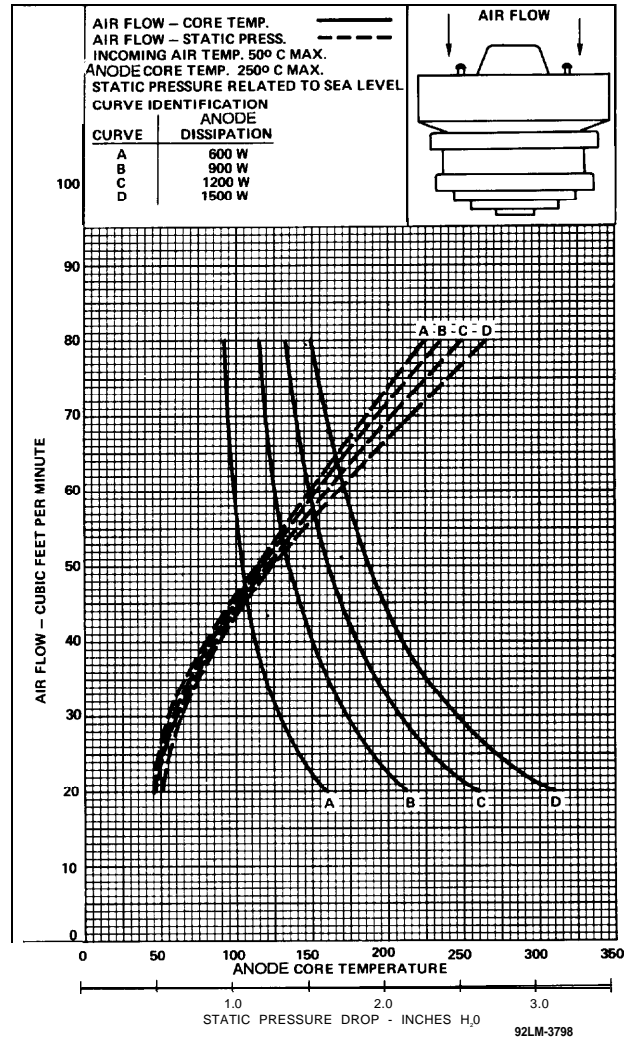
**Note 2** - Round all edges

**Note 3** - Slot between holes

**Tabulated Dimensions\***

Dimensions	Millimeters	Inches
A	71	2.8
B	46	1.8
C Rad.	1.5	0.06
D Rad.	1.5	0.06
E	18	0.7
F Dia.	6.350	0.250
G Rad.	25.781	1.015
H	19	0.75
J Dia.	3.556	0.140
K		8.30
M		4.50

**Figure 3 - Tube Extractor**



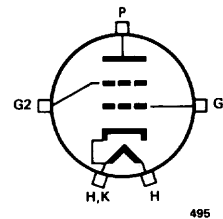
**Figure 4 - Typical Cooling Characteristics**

**Warning - Personal Safety Hazards**

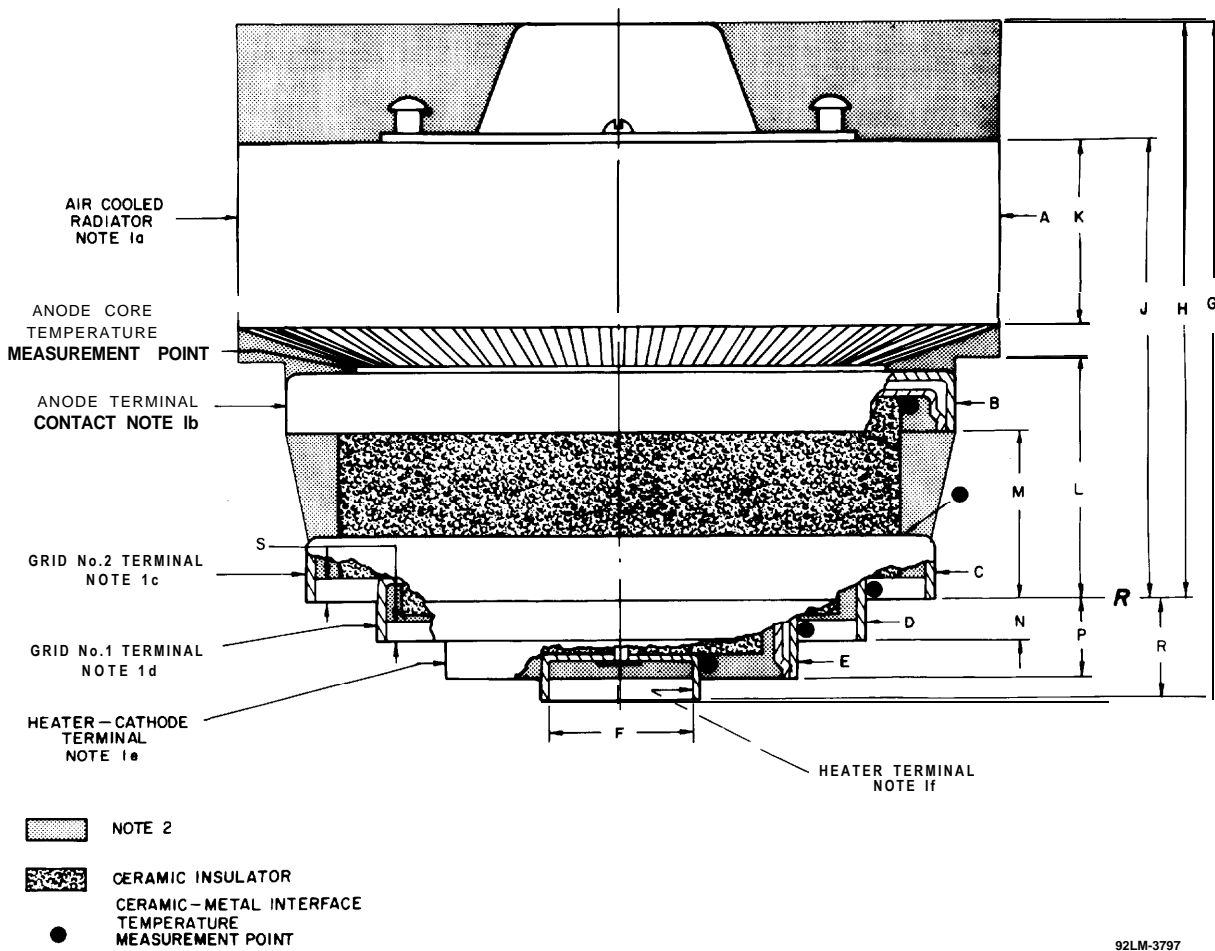
**Electrical Shock** - Operating voltages applied to this device present a safety hazard.

**X-Ray Warning** - This device in operation produces x-rays which can constitute a health hazard unless the device is adequately shielded for radiation.

**Radio Frequency Radiation** - This device in operation produces radio frequency radiation which may be harmful to personnel.



**Figure 5 - Terminal Diagram**



**Tabulated Dimensions\***

Dim.	Millimeters	Inches
A Dia.	94.52±8	3.72 ± .03
B Dia.	81.53 Min.	3.210 Min.
C Dia.	76.45 Min.	3.010 Min.
D Dia.	58.46 Min.	2.307 Min.
E Dia.	43.43 Min.	1.710 Min.
F Dia.	18.42 Max.	0.725 Max.
G	82.3 ± 2.5	3.24 ± .10
H	70.6 ± 1.8	2.78 ± .07
J	55.6 ± 1.0	2.19 ± .04
K	21.59 Min.	0.85 Min.
L	29.5 Ref.	1.16 Ref.
M	20.8 ± .8	0.82 ± .03
N	5.08 ± .51	0.20 ± .02
P	9.4 ± .8	0.37 ± .03
R	11.7 ± .8	0.46 ± .03
S	2.66 Min.	0.105 Min.

**Note 1** - The contact distance\* listed is the minimum, uniform, indicated length as measured from the edge of the terminal.

	Contact	Distance
1a. Radiator	0.850	(21.59)
1b. Anode Terminal	0.220	( 5.59)
1c. Grid no.2 Terminal	0.220	( 5.59)
1d. Grid no.1 Terminal	0.200	( 5.08)
1e. Heater-Cathode Terminal	0.115	( 2.92)
1f. Heater Terminal	0.135	( 3.43)

**Note 2** - Keep all stippled regions clear. In general do not allow contacts to protrude into these annular regions. If special connectors are required which may intrude on these regions, contact BURLE Power Tube Application Engineering, Lancaster, PA 17601.

\* Dimensions are in inches unless otherwise stated. Dimensions in parentheses are in millimeters and are derived from the basic inch dimension. (One inch = 25.4 mm).

**Figure 6 - Dimensional Outline**