

JEDEC TYPE DESIGNATION

REGISTRATION FORM

FOR PULSED MAGNETRONS

Manufacturer's Designation	BL-230
JEDEC Designation	7444
Manufacturer	Bomac Laboratories, Inc. Beverly, Massachusetts

GENERAL CHARACTERISTICS

The 7444/ BL-230 is a pulsed magnetron oscillator tube which operates at a tunable frequency of 5400-5900Mc. The peak power output is approximately 1 kilowatt and the tube is air cooled. The tube uses an integral magnet and is ruggedized for beacon applications.

GENERAL ELECTRICAL DATA

Pre-heat Heater Voltage	5.0 $\pm$ 0.5 V
Pre-heat Heater Current at 5.0 Volts	0.65 to 0.80 A
Minimum Pre-heat Time	30 sec
Duty Cycle Equilibrium (Du=0.002 to 0.00005)	$\Delta F=5.0$ Mc. max.

ABSOLUTE MAXIMUM RATINGS

Heater Voltage	5.5 V
Heater Current	0.80 A
Peak Anode Voltage	2.8 kv
Peak Anode Current	1.9 a
Peak Power Input	5.3 kw
Duty Cycle	0.002
Pulse Duration	1.0 μ s
Rate of Rise of Anode Voltage (between 20 and 85% points)	18.0 kv/ μ s
Maximum Altitude Without Pressurization	
Output Circuit	60,000 ft
Input Terminals	60,000 ft
Anode Temperature (See Outline)	125°C
VSWR	1.5:1

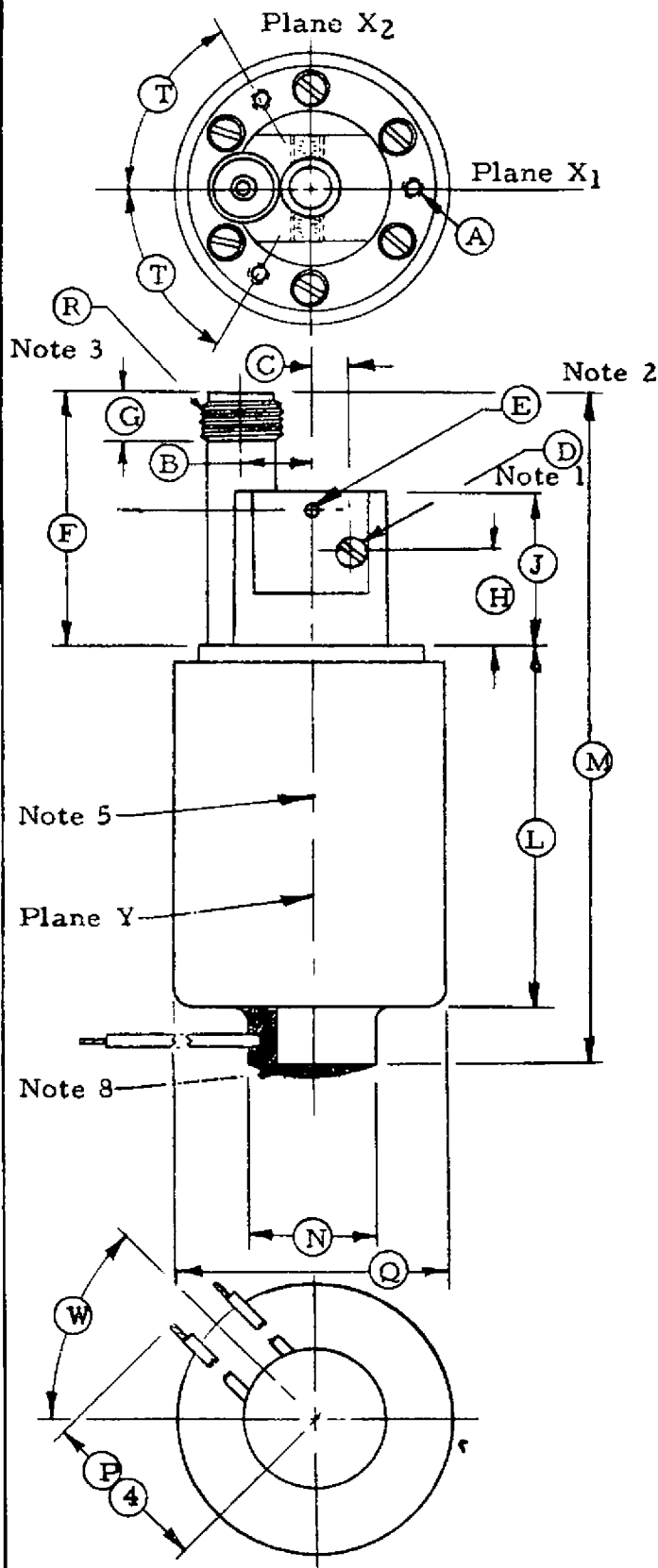
TYPICAL OPERATING RATINGS

Frequency	5400 to 5900 Mc
Peak Anode Voltage	2.6 kv
Pulling Figure (VSWR 1.5/1)	15 Mc max
Pushing Factor (ib=1.65 to 1.75a)	15 Mc/a max

Current Pulse Duration	1.0 μ s
Duty Factor	0.002
Peak Anode Current	1.7 a
Stability (% Missing Pulses)	0.25% max
Peak Power Output	1000 w min
Voltage Pulse Rate-of-Rise (between 20 and 85% points)	18 kv/ μ s max
RF Bandwidth at 1/4 po points (Load VSWR = 1.5 min, All phases)	2.5 Mc
Heater Voltage	5.0 V
Heater Current	0.65 to 0.80 A

GENERAL MECHANICAL CHARACTERISTICS

Mounting Position	Any
Mounting Support	Tuner flange or body
Weight	Approx. 10 oz
Coupling Between Tube and Load	Tube has coaxial output with a 7/16 - 28 NS thread for mating with a TNC plug.
Shock using High Impact Machine (along longitudinal axis) (along radial axis)	60° hammer angle 30° hammer angle
Constant Acceleration (along longitudinal axis) (along radial axis)	300G, $\Delta F = \pm 2.5$ Mc max. 150G, $\Delta F = \pm 2.5$ Mc max.
Vibration (55 - 2000 cps, 16G)	$\Delta F = \pm 2.5$ Mc max.
Ambient Temperature (operating)	-60 to + 105°C
Temperature Coefficient (TE = 40° to 60°C)	$\Delta F / \Delta T = 0.10$ Mc/°C max.
Thermal Equilibrium (t = 1 hour after 5 min. of continuous operation)	$\Delta F = \pm 2.5$ Mc max.
Cooling Data	Air Cooled



Note 1:- Tuning screw.

Note 2:- Tuner lock, allen head set screw (for locking tuning shaft if desired; only necessary under extreme conditions of shock and vibration). 1 Sc. both sides.

Note 3:- Mates with TNC Plug.

Note 4:- #20 strand copper wire, teflon coated.

Note 5:- Temperature of anode shall be measured at point X.

Note 6:- Planes of vibration and shock are identified as planes X₁, X₂, and Y.

Note 7:- Black lead identifies cathode.

Note 8:- Potting material.

Ref.	Dimensions in Inches
A**	#6-32NC 3 Holes
	.125 min. dp equally spaced on 1.062 BC
B**	0.400 ± .025
C**	0.236 ± .010
D**	3/64 x 1/16 slot
E**	#4-40 Hex Set Screw
F**	1.245 ± .015
G**	0.250 Min.
H**	0.535 ± .015
J**	0.863 ± .015
L	1.700 ± .030
M	2.515 Max.
N**	0.850 Dia.
P	4.000 Min.
Q	1.405 ± .005
R**	7/16-28NS
T**	60° ± 2°
W	45° ± 5°

SPECIFICATION SHEET

Outline 7444/BL-230

BOMAC LABORATORIES INC.
SALEM ROAD
BEVERLY, MASSACHUSETTS

4-6-60

jb