

JETEC TYPE DESIGNATION REGISTRATION FORM

SHUTTER AND TR TUBES

Manufacturer's Designation: BL-310
JETEC Designation: 6593
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

December 12, 1956

GENERAL CHARACTERISTICS

The 6593 is a combined broad-band TR tube and shutter for use in X-Band. The shutter mechanism, when closed, insures protection for the receiver crystal from nearby transmitters when the radar set is not in use. When the shutters are open, the TR tube functions normally and provides decoupling of the receiver from a common transmitting and receiving antenna during a period of transmission. It is an integral cavity type. Its operational band is from 8490 to 9578 megacycles per second.

ELECTRICAL DATA - TYPICAL VALUES

TR Tube (with shutters open)

Operational Band

VSWR 1.9 maximum 8490 to 9578 Mc/s.

VSWR 1.6 maximum 8565 to 9487 Mc/s.

Ignitor Ignition Time (max.) 5 sec.

Ignitor Voltage Drop at $I_i = 100$ uAdc. 200 to 375 Vdc.

Spike Leakage Energy (max.) 0.30 ergs.

$F = 9000$ Mc; $p_o = 40$ kw;

$tp_1 = 1.0$ us; $tp_2 = 0.5$ us;

$pr = 1000$ pps; $I_i = 100$ uAdc.

Flat Leakage Power (max.) 30 mw.

(See Spike Leakage Energy for test conditions)

Insertion Loss (max.) at $F = 9000$ Mc and $I_i = 0$ 0.7 db.

Ignitor Interaction (max.) at $I_i = 100$ uAdc. 0.3 db.

Position of Short 0.025 to 0.039 inches

(Measured from face of input flange of the tube. Short is further from the magnetron.)

Recovery Time at 200 kw peak, 3 db down 8 us. (max.)

Shutter Tube

Attenuation (shutters closed) 8490 to 9578 Mc/s.	40 db (min.)
Shutter Circuit Voltage	28 Vdc
Shutter Circuit Pull-In Current	110 mAdc (min.)
Shutter Circuit Holding Current	60 mAdc (min.)

MECHANICAL DATA - GENERAL

Mounting Position	Any
Weight, approximately	1/4 lb.

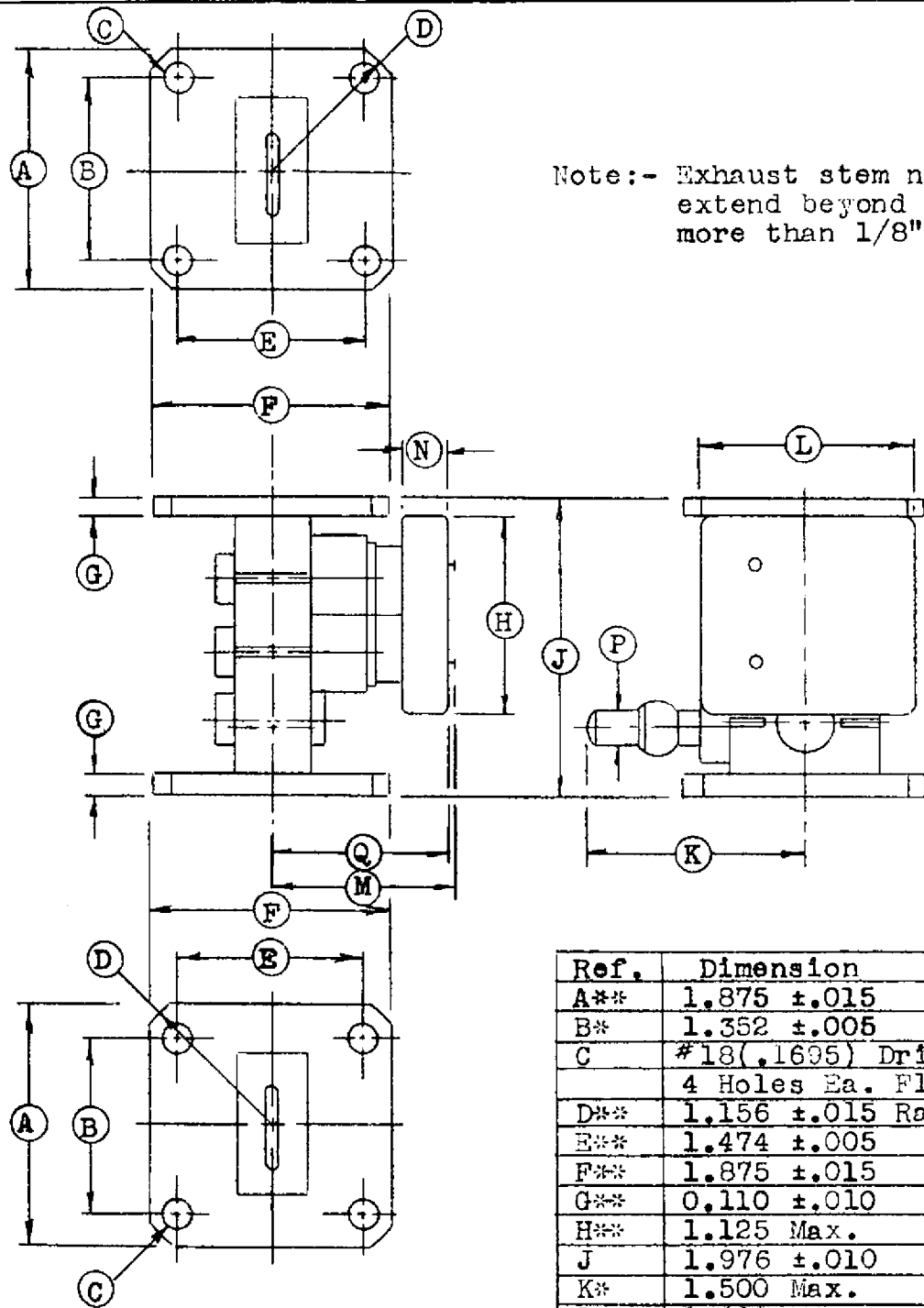
ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (TR Tube) Note 1	1000 kw.
Transmitter Average Power	1000 W
Ignitor Current	200 uAdc.
Shutter Holding Current	160 mAdc.

OUTLINE DRAWING

As per attached drawing dated 12/14/ 56

Note 1: The shutters are not intended for applications involving switching of peak power greater than one kilowatt. Therefore the rating applies only when the shutters are either open or closed.



Note:- Exhaust stem not to extend beyond flange more than 1/8".

Ref.	Dimension
A**	1.875 ±.015
B*	1.352 ±.005
C	#18(.1695) Drill 4 Holes Ea. Flg.
D**	1.156 ±.015 Rad.
E**	1.474 ±.005
F**	1.875 ±.015
G**	0.110 ±.010
H**	1.125 Max.
J	1.976 ±.010
K*	1.500 Max.
L**	1.000 Max.
M*	1.500 Max.
N**	0.281 Max.
P**	0.250 Dia. Nom.
Q*	1.375 Max.

SPECIFICATION SHEET

Outline

6593/BL-310

BOMAC LABORATORIES INC.
SALEM ROAD
BEVERLY, MASSACHUSETTS

12-14-56 clr