

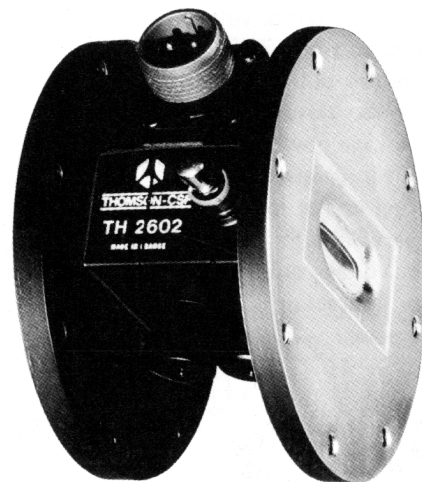
TH 2602 TR TUBE

The TH 2602 is a band-pass, fixed-tuned TR, operating in C-band from 5395 to 5905 MHz with a maximum power level of 300 kW peak.

An important feature of the TH 2602 is its electro-magnet-controlled shutter system.

When the radar equipment is not transmitting, the electromagnet coil is not supplied and the receiver is protected against spurious emission. During transmission, the shutter is in open position and the TH 2602 operates as an ordinary TR tube.

When the equipment is transmitting, the gas contained in the tube is ionized and acts as a short-circuit for the receiver. The energy is reflected towards the antenna. This ionization is induced by the ignitor. When receiving, the tube joins the antenna to the receiver.



GENERAL CHARACTERISTICS (1)

Electrical

Frequency	5395	5905	MHz
Transmitted power	max.	300	kW
Shutter voltage		6	Vdc
Shutter current	460	to 600	mA

Mechanical

Operating position	any
Mounting position	ignitor low power level side
Dimensions	see drawing
Approximate weight	800 g

(1) Characteristics given for information only. See specification sheet for performance characteristics.



ABSOLUTE RATINGS

(non simultaneous)

	min.	max.	
Ignitor current	100	200	μA
Open circuit ignitor voltage	-700	-	V
Applied power, peak	4. 0	300	kW
Transmitter pulse duration	-	1. 0	μs
Transmitter duty cycle	-	. 001	
Flat leakage power	-	70	mW
Spike leakage energy	-	0. 3	erg
Insertion loss at low level	-	0. 8	dB
Recovery time for Po = 300 kW	-	10	μs
Ignitor voltage drop (for 100 μA ignitor current)	200	400	V
Ignitor interaction	-	0. 3	dB
Firing power	-	300	mW

OPERATING INSTRUCTIONS

The shutter of the TH 2602 provides a convenient method of opening or shorting waveguide lines at low power levels (incident peak power less than 1 kW). It is not intended for applications involving the switching of high power and should remain either open or closed whenever high power is incident on the tube.

The recommended ignitor operation circuit is for a tube with an average ignitor voltage drop. The following formula should be used to determine the value of the required series resistance :

$$R_i = \frac{E_{bb} - E_{id}}{150}$$

Where Ri = total series resistance (megohms)

Ebb = open circuit supply voltage (volts)

Eid = average ignitor voltage drop = 300 volts

At least 0. 5 megohm of the total should be located as close as possible to the ignitor top cap to prevent oscillation.

Use 1 μF, 2500 V capacitor across shutter to reduce surge voltage on opening switch.

The firing power is the maximum power level incident upon the tube before a microwave gas discharge is initiated within the tube such that the power transmitted through the tube is sharply attenuated.

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