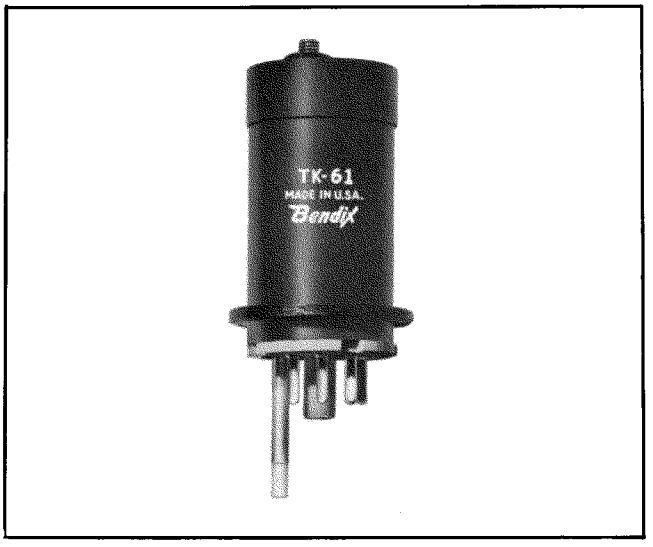
Bendix Type TK-61

REFLEX KLYSTRON

(MECHANICALLY TUNED)



PHYSICAL CHARACTERISTICS

- *Base:* Small octal 8-pin, B8-21, Low Loss Phenolic Wafer, Modified for coaxial output lead as shown on outline drawing.
- *Coupling to Wave Guide:* Coaxial output fits standard transducer per 227-JAN.
- *Cooling:* Convection.
- *Mounting Position:* Any.
- *Cavity:* Integral with tube.
- *Bulb:* Metal.

MAXIMUM RATINGS

(ABSOLUTE VALUES)

Resonator Voltage	350 volts D.C.
Reflector Voltage	—350 volts D.C.
Filament Voltage	6.3 ±8% volts
Gun Cathode Current	32 ma. D.C.
Heater-Cathode Voltage	±100 volts D.C.

DESCRIPTION

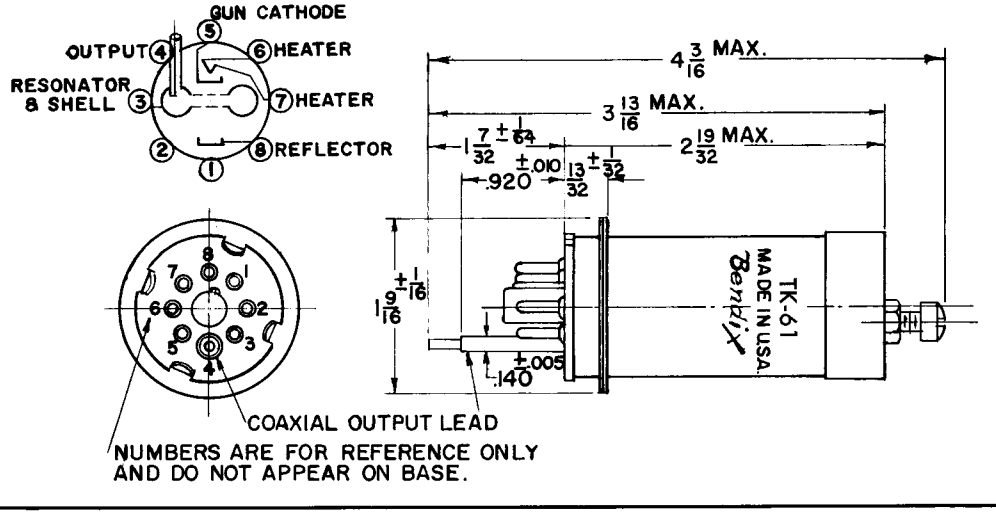
The Bendix® Type TK-61 Tube is a ruggedized, low voltage, reflex oscillator designed for use as a CW power source at a frequency of 10,525 ±25 Mc./sec. A trimming screw for limited frequency adjustment is located at the top of the envelope. This screw is set and locked at the factory, but may be adjusted by the user for small frequency changes, should this be desired. The tube is ideally suited for application in speed control Doppler radar systems. The tube has relatively excellent frequency stability with respect to ambient temperature changes. In addition, the power output shows only minor variation when cavity tuning is changed throughout its assigned band.

The ruggedization feature of the tube permits it to be operated under severe vibration environments without sacrifice of frequency stability. Under vibration conditions of 10g acceleration at 50 cycles, the maximum frequency variation is ±1.3 Mc./sec.

The tube has coaxial output and is coupled to the waveguide circuit through a transducer identical to that used for type 2K45, 2K25, and 6116 klystrons. Details of this transducer are covered in Military Drawing Number 227-JAN.

TYPICAL OPERATING CONDITIONS

Frequency	10,525 Mc./sec. ±25 Mc./sec.
Resonator Voltage	300 volts D.C.
Reflector Voltage @ 10,525 Mc./sec.	—70 to —145 volts D.C.
Filament Voltage	6.3 ±8% volts
Gun Cathode Current	32 mA D.C. (max.)



THE Bendix CORPORATION

Red Bank DIVISION, EATONTOWN, NEW JERSEY

Publication No. R811-23

Printed in U.S.A.

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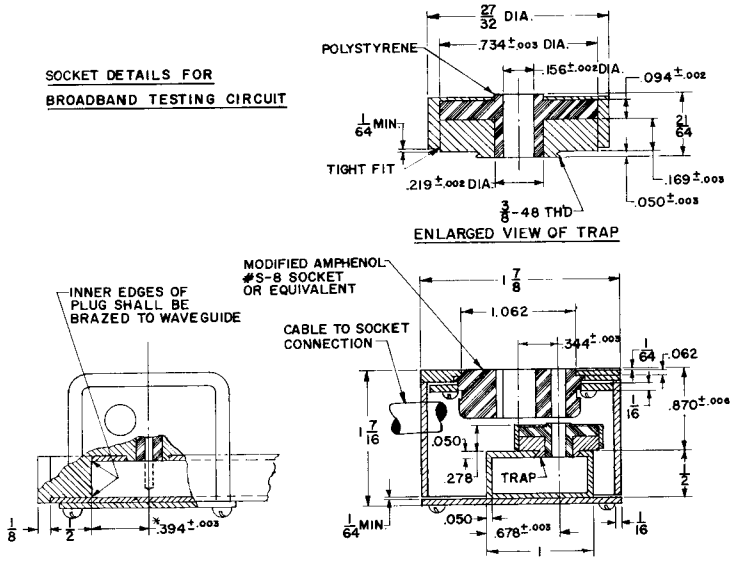
ELECTRICAL CHARACTERISTICS & TEST CONDITIONS

Test Conditions and Specification Limits

TEST	CONDITIONS	SYMBOL	LIMITS MIN.	LIMITS MAX.	UNITS
PRODUCTION TESTS:					
Total Reflector Current:	Er = −150 Vdc t = 120 sec. (min)	Ir:	—	5.0	μAdc
Reflector Leakage:	Er = −150 Vdc	Ir:	—	3.0	μAdc
Reflector Gas Current:	Er = −150 Vdc	Ir:	—	2.0	μAdc
Cathode Current:	Er = −150 Vdc	Ik:	—	32	mAdc
Reflector Voltage:	Er Max. Po @ 10,525 ±0.3% Mc./sec.	Er:	−70	−130	Vdc
Mechanical Tuning Range:	Er Max. Po	Max. F:	10,550	—	Mc
		Min. F:	—	10,500	Mc
Bump:	Ef = 5.8; Er Max. Po @ 10,525 ±0.3% Mc./sec.	△Po/Po:	—	0.15	
Emission:	Ef = 5.8; Er = −150 Vdc	△Ik/Ik:	—	0.15	
Vibration:	Er Max. Po at 10,525 Mc./sec. Total Displacement = 0.080" F = 50 cps, Position Y1 and X1	F:	—	±1300	Kc
Power Output:	Ef = 5.8; F 10,525 ±25 Mc./sec.	Po:	20	—	mW
DESIGN TESTS:					
Electrode Insulation:	300 Vdc Tube Cold	Rk-rs:	2.0	—	Meg.
		RF-rs:	2.0	—	Meg.
Heater Current:		If:	465	570	mA
Insulation:	Eh-K = ±45 Vdc	IhK:	—	100	μAdc
Electrical Tuning Range:	Er (Mode)/50% Max. Po: F 10,525 ±25 Mc./sec.	F:	35	—	Mc.



SOCKET DETAIL