



K391A

OSCILLATOR KLYSTRON

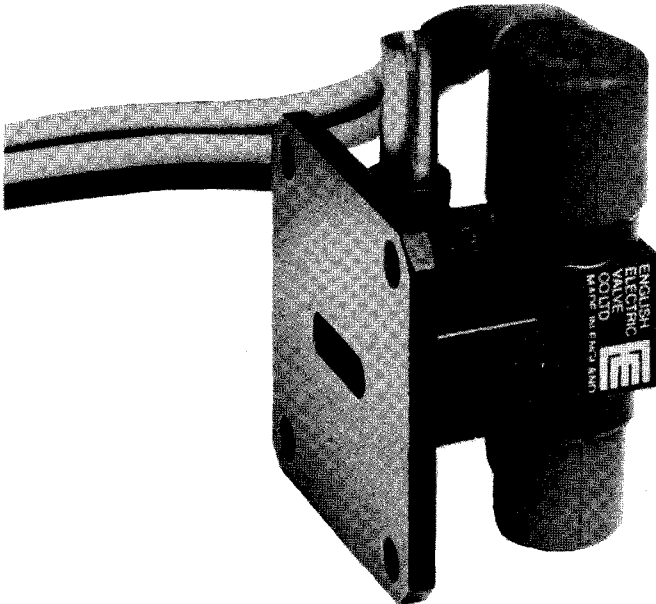
Service Type CV6142

The data should be read in conjunction with the Oscillator Klystron Preamble.

ABRIDGED DATA

Rugged reflex klystron for airborne radar and similar applications.

Frequency range	8800 to 8885	MHz
Typical output power	60	mW
Electronic tuning range	40	MHz
Output	to no. 16 waveguide (0.900 x 0.400 inch internal)	
Coupler	UG-39/U (154 I.E.C.-UBR100)	
Mechanical tuning (see note 1)	single screw	



June 1973

GENERAL

Electrical

Cathode	indirectly heated, oxide coated	
Heater voltage	6.3	V
Heater current	0.6	A

Mechanical

Overall dimensions (excluding leads)	2.400 x 1.637 x 1.400 inches max 60.96 x 41.60 x 35.56mm max
Net weight	5 ounces (140g) approx
Mounting position	any
Connections	flexible leads

Cooling (See note 2) natural

MAXIMUM AND MINIMUM RATINGS (Absolute values) (See note 3)

No individual rating to be exceeded.

	Min	Max	
Heater voltage	5.7	6.9	V
Resonator voltage	—	400	V
Resonator current	—	50	mA
Reflector voltage (see note 4)	-20	-500	V
Body temperature (see note 5)	—	150	°C
Altitude (operating)	—	80 000	ft
	—	24.4	km
Storage temperature	-55	+45	°C

RANGE OF CHARACTERISTICS AND TYPICAL OPERATION

Operating Conditions

Heater voltage	6.3	V
Resonator voltage	350	V
Load v.s.w.r.	1.1:1	max

Range of Characteristics

	Min	Typical	Max	
Heater current	0.52	0.58	0.61	A
Resonator current	20	30	38	mA
Reflector voltage	-140	—	-200	V
Output power	40	60	—	mW
Mechanical tuning range . . .	8800	—	8885	MHz
Tuning rate	—	250	—	MHz/turn
Electronic tuning range to -3db points	30	40	—	MHz
Reflector modulation sensitivity	0.5	1.0	1.5	MHz/V
Temperature coefficient of frequency	-50	-100	-200	kHz/°C
Peak frequency modulation with 10g vibration (25 to 1000Hz)	—	60	100	kHz
Barometric effect (see note 6) .	—	1.5	—	MHz
Warm-up drift (see note 7):				
frequency	—	—	10	MHz
output power	—	—	1.0	db

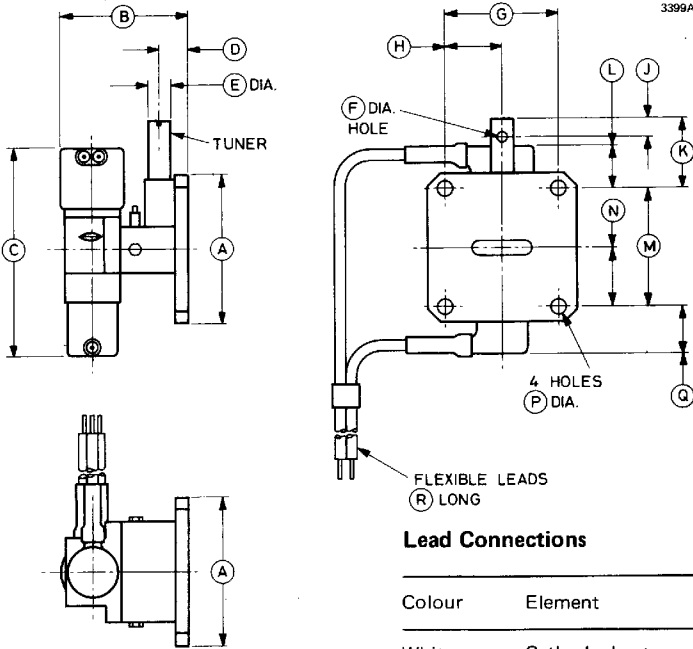


NOTES

1. Clockwise rotation of the tuner reduces the frequency.
2. The resonator is normally operated at earth potential and in good thermal contact with the waveguide system.
3. All voltages except the heater voltage are with respect to cathode.
4. The reflector circuit impedance must not exceed 0.5MΩ. The reflector must never become positive with respect to cathode.
5. For best life, the operating temperature of the klystron body should be kept as low as possible.
6. The frequency change when the ambient pressure is increased from 76 to 760mm Hg.
7. Measured between 1 minute and 2 minutes after switching on all supplies.

OUTLINE (All dimensions without limits are nominal)

3399A



Lead Connections

Colour	Element
White	Cathode, heater
Yellow	Heater
Grey	Reflector

Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	1.625 ± 0.015	41.28 ± 0.38	J	0.200 ± 0.005	5.08 ± 0.13
B	1.400 max	35.56 max	K	0.760 max	19.30 max
C	2.400 max	60.96 max	L	0.658 max	16.71 max
D	0.312 ± 0.010	7.92 ± 0.25	M	1.280 ± 0.004	32.512 ± 0.102
E	0.250	6.35	N	0.640 ± 0.004	16.256 ± 0.102
F	0.110	2.79	P	0.170	4.32
G	1.220 ± 0.004	30.988 ± 0.102	Q	0.458 max	11.63 max
H	0.610 ± 0.004	15.494 ± 0.102	R	12.000 min	304.8 min

Millimetre dimensions have been derived from inches.