K3007

OSCILLATOR KLYSTRON

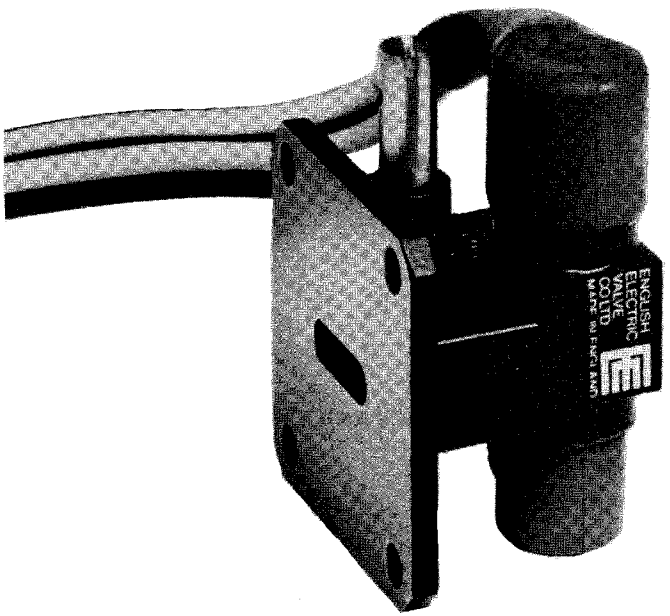
Service Type CV9423

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

ABRIDGED DATA

Rugged reflex klystron for airborne radar.

Frequency range	9295 to 9395	MHz
Typical output power	40	mW
Electronic tuning range	35	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	



GENERAL

Electrical

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

Mechanical

Overall dimensions (excluding leads)	2.382 x 1.637 x 1.400 inches max 60.50 x 41.58 x 35.56mm max	
Net weight	5.5 ounces (160g) 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	—	375	V
Resonator current	—	45	mA
Reflector voltage (see note 4)	−20	−500	V
Body temperature (see note 5)	—	150	°C
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

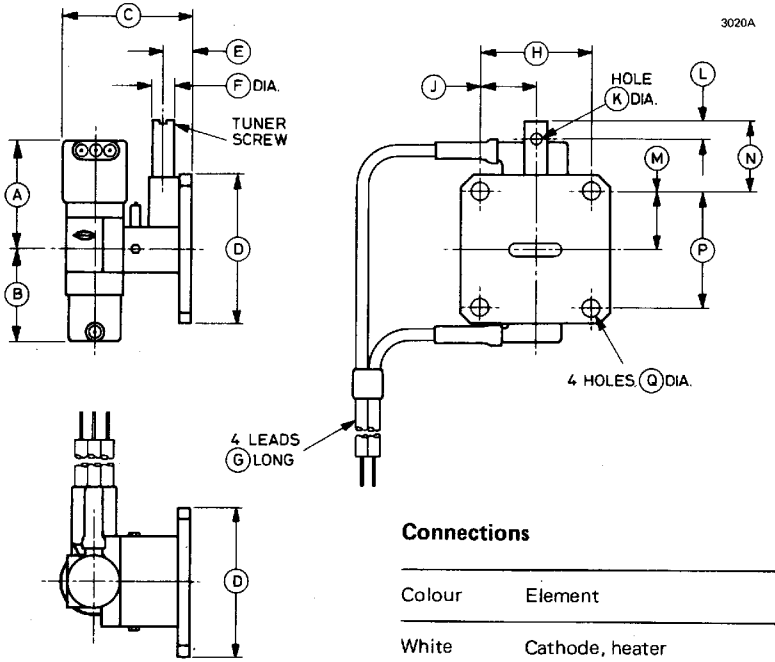
Range of Characteristics

	Min	Typical	Max	
Heater current	0.52	0.58	0.61	A
Resonator current	25	33	40	mA
Reflector voltage	−170	—	−220	V
Output power	25	40	50	mW
Mechanical tuning range	9295	—	9395	MHz
Tuning rate	150	200	250	MHz/turn
Electronic tuning range to −3db points	25	35	—	MHz
Reflector modulation sensitivity	0.5	0.7	2.0	MHz/V
Temperature coefficient of frequency	−50	−130	−200	kHz/°C
Peak frequency modulation with 10g vibration (30 to 1000Hz)	—	50	100	kHz
Warm-up drift (see note 6):				
frequency	—	—	−6.0	MHz
output power	—	—	1.0	db
Pulling effect (see note 7):				
frequency	—	4.0	—	MHz
output power	10	—	—	mW
Barometric effect (see note 8)	—	−1.0	—	MHz

NOTES

1. Clockwise rotation of the tuner reduces the frequency. The tuner torque is 35oz in (0.25Nm) max.
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. Measured between 40 seconds and 3 minutes 40 seconds after switching on all supplies.
7. With a mismatch of v.s.w.r. 1.5:1, varied through all phases.
8. The frequency change when the ambient pressure is increased from 76 to 760mm Hg.

OUTLINE (All dimensions without limits are nominal)



Connections

Colour	Element
White	Cathode, heater
Yellow	Heater
Grey	Reflector
Tan	Resonator

Ref	Inches	Millimetres
A	1.300 max	33.02 max
B	1.000 max	25.40 max
C	1.400 max	35.56 max
D	1.625 ± 0.015	41.28 ± 0.38
E	0.312 ± 0.010	7.92 ± 0.25
F	0.250	6.35
G	12.000 min	304.8 min
H	1.220 ± 0.004	30.988 ± 0.102
J	0.610 ± 0.004	15.494 ± 0.102
K	0.110	2.79
L	0.200	5.08
M	0.640 ± 0.004	16.256 ± 0.102
N	0.760 max	19.30 max
P	1.280 ± 0.004	32.512 ± 0.102
Q	0.170	4.32

Millimetre dimensions have been derived from inches.