K337

OSCILLATOR KLYSTRON

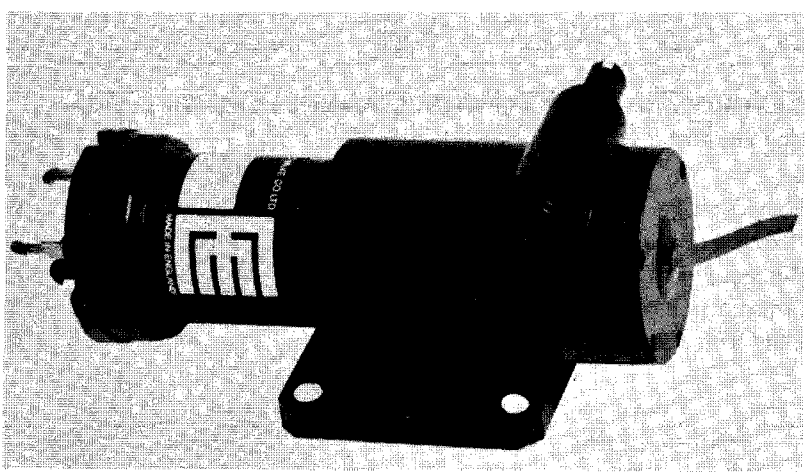
Service Types CV4515, CV5130

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

ABRIDGED DATA

Rugged reflex klystron for local oscillator service.

Frequency range	9000 to 10 000	MHz
Typical output power	45	mW
Electronic tuning range	24	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 lead)	4.375 x 1.889 x 1.662 inches max 111.1 x 47.98 x 42.21mm max	
Net weight	12 ounces (340g) approx	
Mounting position	any	
Base	solder tags	
Reflector connection	flexible lead	

Cooling (See note 2) . . . . . natural

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

No individual rating to be exceeded.

	Min	Max	
Heater voltage	5.8	6.8	V
Resonator voltage	–	400	V
Resonator current	–	50	mA
Reflector voltage (see note 4)	–20	–500	V
Body temperature (see note 5)	–	140	°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	35	40	mA
Reflector voltage	−250	—	−400	V
Output power	30	45	—	mW
Mechanical tuning range	9000	—	10 000	MHz
Mechanical tuning rate:				
mean (see note 6)	6.5	7.0	8.0	MHz/turn
incremental (see note 7)	5.0	—	9.5	MHz/turn
Resetting error (see note 8)	—	1.0	3.0	MHz
Electronic tuning range to −3db points	20	24	—	MHz
Reflector modulation sensitivity:				
at mode optimum	0.5	0.75	1.0	MHz/V
ratio of mode optimum to ±10MHz values	0.33	—	—	
Reflector voltage tracking (see note 9)	—	2.0	3.0	V
Pulling characteristics (see note 10):				
frequency pulling	—	5.0	10	MHz
output power	15	—	—	mW
electronic tuning range	±10	—	—	MHz
Peak frequency modulation with 30g vibration up to 500Hz	—	1.0	2.0	MHz
Effects of constant 50g acceleration:				
frequency deviation	—	1.5	2.0	MHz
power change	—	—	1.0	db

NOTES

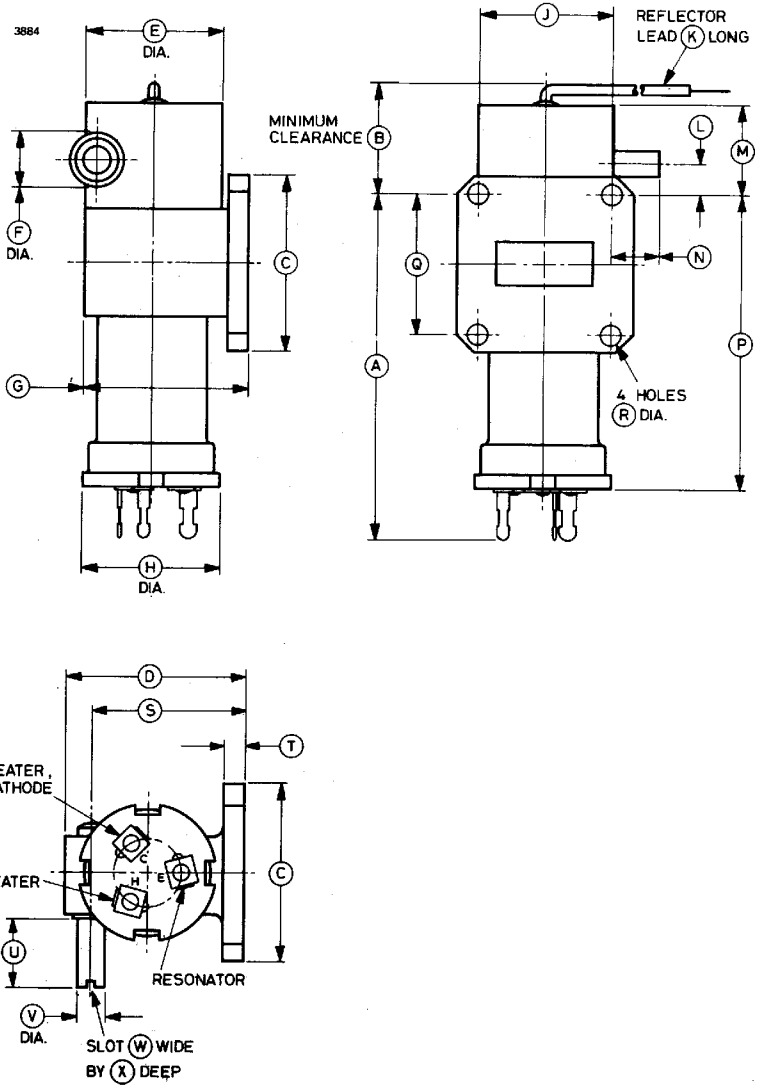
1. Clockwise tuner rotation increases the frequency. The tuner torque is 15oz in (0.1Nm) max. **Warning** No stops are fitted to the tuner and tuning beyond the specified frequency range may damage the klystron.
2. The resonator is normally operated at earth potential and in good thermal contact with 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. Average over the range 9000 to 10 000MHz.
7. The limits apply to the maximum and minimum slope of the frequency-tuner turns curve, plotted at 100MHz steps across the frequency range.
8. The frequency difference at the same tuner shaft setting, following an excursion of 100MHz.
9. The deviation from linearity of the graph of reflector voltage for mode optimum against tuner turns, plotted at 100MHz intervals across the frequency range.
10. With a mismatch of v.s.w.r. 1.5:1, varied through all phases.

Outline Dimensions

Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	3.350 max	85.09 max	P	2.682 ± 0.060	68.12 ± 1.52
B	1.025	26.04	Q	1.280 ± 0.004	32.51 ± 0.10
C	1.625 ± 0.005	41.28 ± 0.13	R	0.169 ± 0.003	4.293 ± 0.076
D	1.642 ± 0.020	41.71 ± 0.51	S	1.392 ± 0.015	35.36 ± 0.38
E	1.300 max	33.02 max	T	0.200 ± 0.020	5.08 ± 0.51
F	0.520 max	13.21 max	U	0.406 min	10.31 min
G	1.500 max	38.10 max	V	$0.250^{+0.000}_{-0.005}$	$6.35^{+0.00}_{-0.13}$
H	1.300 max	33.02 max			
J	1.220 ± 0.004	30.99 ± 0.10	W	$0.062^{+0.003}_{-0.000}$	$1.575^{+0.076}_{-0.000}$
K	2.500 min	63.50 min			
L	0.280 ± 0.015	7.11 ± 0.38	X	$0.062^{+0.010}_{-0.000}$	$1.57^{+0.25}_{-0.00}$
M	0.843 ± 0.030	21.41 ± 0.76			
N	0.442 ± 0.020	11.23 ± 0.51			

Millimetre dimensions have been derived from inches.

OUTLINE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