



## OSCILLATOR KLYSTRON

### Service Type CV6003

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

### ABRIDGED DATA

Rugged reflex klystron for local oscillator service.

Frequency range . . . . .	8500 to 9000	MHz
Typical output power . . . . .	45	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 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	0.62	A
Resonator current . . . . .	25	35	40	mA
Reflector voltage . . . . .	-140	—	-255	V
Output power . . . . .	30	45	—	mW
Mechanical tuning range . . . . .	8500	—	9000	MHz
Tuning rate (average) . . . . .	5.0	7.0	9.5 MHz/turn	
Electronic tuning range to -3db points . . . . .	30	35	—	MHz
Reflector modulation sensitivity: at mode optimum . . . . .	0.5	0.75	1.2	MHz/V
ratio of mode optimum to $\pm 15$ MHz values . . . . .	0.3	—	—	
Temperature coefficient of frequency . . . . .	—	—	-325	kHz/°C
Frequency drift (see note 6) . . . . .	—	—	6.0	MHz
Pulling characteristics (see note 7): frequency pulling . . . . .	—	3.0	5.0	MHz
output power . . . . .	20	30	—	mW
Peak frequency modulation with 13g vibration up to 500Hz . . . . .	—	150	250	kHz
Effects of constant 13g acceleration: frequency deviation . . . . .	—	1.5	2.0	MHz
power change . . . . .	—	—	10	%

## NOTES

1. Clockwise rotation of the tuner increases the frequency. The tuner torque is 20oz in (0.14Nm) 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  $0.5M\Omega$ . 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 4 and 15 minutes after switching on all supplies, at  $8750 \pm 20\text{MHz}$ .
7. With a mismatch of v.s.w.r. 1.5:1, varied through all phases.



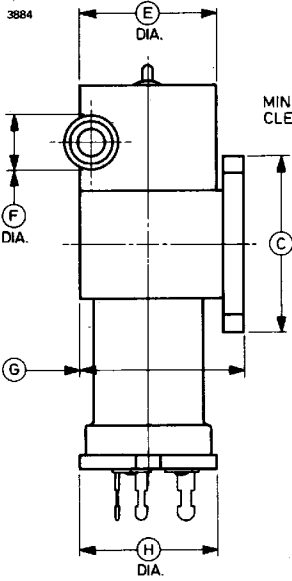
## Outline Dimensions

Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	3.350 max	85.09 max	P	$2.682 \pm 0.060$	$68.12 \pm 1.52$
B	1.025	26.04	Q	$1.280 \pm 0.004$	$32.51 \pm 0.10$
C	$1.625 \pm 0.005$	$41.28 \pm 0.13$	R	$0.169 \pm 0.003$	$4.293 \pm 0.076$
D	$1.642 \pm 0.020$	$41.71 \pm 0.51$	S	$1.392 \pm 0.015$	$35.36 \pm 0.38$
E	1.300 max	33.02 max	T	$0.200 \pm 0.020$	$5.08 \pm 0.51$
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	W	$0.062$ + 0.003 - 0.000	$1.575$ + 0.076 - 0.000
J	$1.220 \pm 0.004$	$30.99 \pm 0.10$	X	$0.062$ + 0.010 - 0.000	$1.57$ + 0.25 - 0.00
K	2.500 min	63.50 min			
L	$0.280 \pm 0.015$	$7.11 \pm 0.38$			
M	$0.843 \pm 0.030$	$21.41 \pm 0.76$			
N	$0.442 \pm 0.020$	$11.23 \pm 0.51$			

Millimetre dimensions have been derived from inches.

# OUTLINE

3884



MINIMUM CLEARANCE

