

K391

OSCILLATOR KLYSTRON

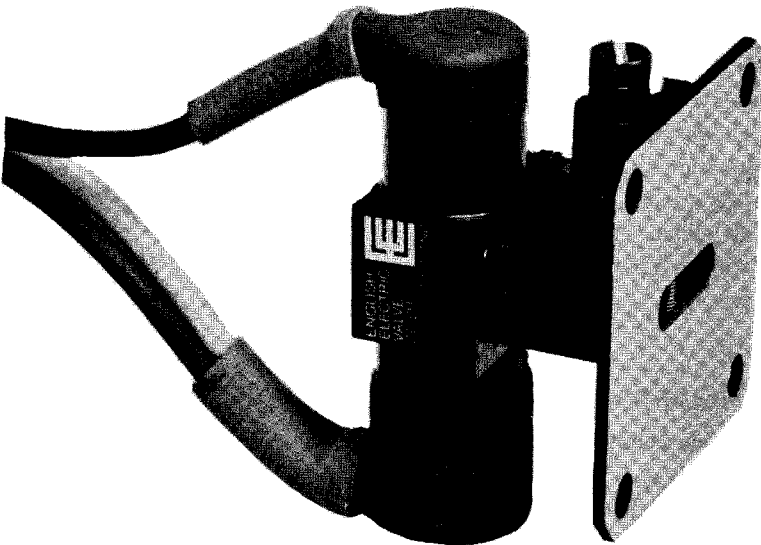
Service Type CV6194

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

ABRIDGED DATA

Rugged, low voltage reflex klystron for airborne service.

Frequency range	9160 to 9340	MHz
Typical output power	40	mW
Electronic tuning range	30	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	



July 1973

GENERAL

Electrical

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

Mechanical

Overall dimensions (excluding leads)	2.260 x 1.637 x 1.400 inches max 57.40 x 41.58 x 35.56mm max
Net weight	4.5 ounces (130g) 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	—	325	V
Resonator current	—	45	mA
Reflector voltage (see note 4)	-20	-500	V
Body temperature:			
operating (see note 5)	—	150	°C
storage	-55	+45	°C

RANGE OF CHARACTERISTICS AND TYPICAL OPERATION

Operating Conditions

Heater voltage	6.3	V
Resonator voltage	275	V
Load v.s.w.r.	1.1:1	max

Range of Characteristics

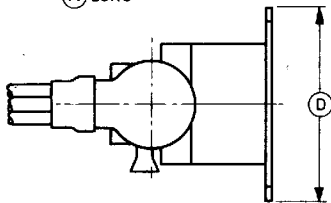
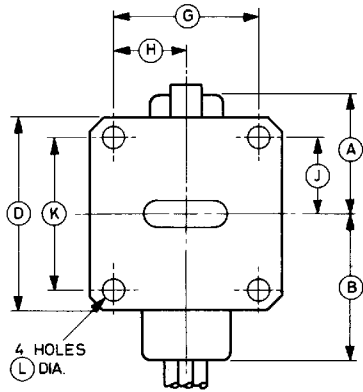
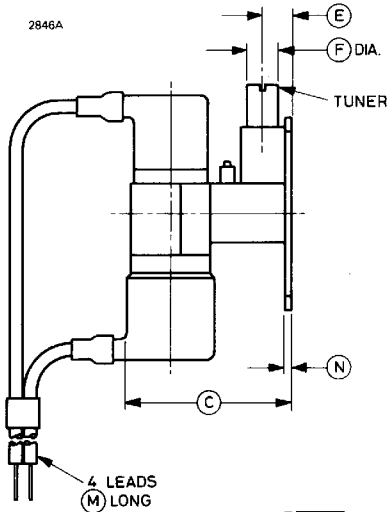
	Min	Typical	Max	
Heater current	0.52	0.58	0.61	A
Resonator current	20	33	40	mA
Reflector voltage	-75	-	-100	V
Output power	25	40	60	mW
Mechanical tuning range	9160	-	9340	MHz
Tuning rate	150	180	250	MHz/turn
Electronic tuning range to -3db points	25	30	-	MHz
Reflector modulation sensitivity	0.5	-	1.5	MHz/V
Pulling characteristics (see note 6):				
frequency pulling	-	4.0	6.0	MHz
output power	10	-	-	mW
Temperature coefficient of frequency	-50	-130	-200	kHz/°C
Peak frequency modulation with 10g vibration (30 to 1000Hz)	-	100	200	kHz
Warm-up drift (see note 7)	-	-	1.0	db



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. With a mismatch of v.s.w.r. 1.5:1, varied through all phases.
7. The change in output power, measured between 40 seconds and 3 minutes after switching on all supplies.

OUTLINE



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

Ref	Inches	Millimetres	Ref	Inches	Millimetres
A	1.000 max	25.40 max	H	0.610 ± 0.004	15.494 ± 0.102
B	1.260 max	32.00 max	J	0.640 ± 0.004	16.256 ± 0.102
C	1.400 max	35.56 max	K	1.280 ± 0.004	32.512 ± 0.102
D	1.625 ± 0.012	41.28 ± 0.30	L	0.170	4.32
E	0.322 ± 0.010	8.18 ± 0.25	M	8.000 min	203.2 min
F	0.250 ± 0.002	6.350 ± 0.051	N	0.062 ± 0.010	1.57 ± 0.25
G	1.220 ± 0.004	30.988 ± 0.102			

Millimetre dimensions have been derived from inches.