

Forced-air-cooled fixed-frequency X-band pulse magnetron operating approximately 8.77-8.83 GHz and producing roughly 90 kW peak output.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	2 V / 5 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Magnetron

No fixed ratings recorded.

Microwave/special-function section; schema has no directly applicable promoted electrode fields; published electrical data preserved in parameters.

Fixed frequency pulse magnetron Frequency range .« 8770108830 MHz Typical peak outputpower 90 kW Magnet e e e e s . . integral Output e e e e e . . no. 16 waveguide (0900 x 0.400 inch internal) Coupler UG-40B/U (5985-99-083-0051) Cooling C e e e s e forced-air

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 English Electric Valve

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 ENGLISH ELECTRIC VALVE

Section 1 · Magnetron

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater current at 6.3V	5 A	Heater current at 6.3V . e 05 A
Cathode heating time (mlnlmum) (see note2)	2 min	Cathode heating time (mlnlmum) (see note2) ... 2 min
Heater voltage	7	Heater voltage . . . P <N 4 7.0 \
Heater starting current (peak)	3 A	Heater starting current (peak) e 3.0 A
Anode voltage {peak}	6 kV	Anode voltage {peak} - 6.0 kV
Anodecurrent(peak)	5.5 A	Anodecurrent(peak) 35 5.5 A
Rate of rise of voltage pulse (at 4.5A peak	4.5	Rate of rise of voltage pulse (at 4.5A peak
anode current) (see note6)	75 kV	anode current) (see note6) — 75 kV/us
Heater voltage	5.4 V	Heater voltage 5.4 V
Anode current (peak)	45 A	Anode current (peak) 45 A
Pulse length	1	Pulse length . 1.0 uS
Pulse repetition rate	1000 s	Pulse repetition rate 1000 p.p.s.
Anode voltage (peak)	5.5 kV	Anode voltage (peak) 5.5 kV
Output power {peak}	9 kW	Output power {peak} 9.0 kW
Output power {mean}	9 W	Output power {mean} 9.0 W
Heater voltage (for test)	6.3	Heater voltage (for test) 4.5 6.3 \
Anode current {mean}	45 mA	Anode current {mean} 9.0 45 mA
Anode voltage {peak}	5.7 kV	Anode voltage {peak} 53 5.7 - - kV
R.F. bandwidth (see note@)	1.25 MHz	R.F. bandwidth (see note@) . . — 2.5 - 1.25 MHz
Output power (mean)	125 W	Output power (mean) 125 - W min
(anode current 7.5mA mean)	3 MHz	(anode current 7.5mA mean) 3.0 — MHz max

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
1. With no anode input power.	1	1. With no anode input power.
For average pulse input powers greater than 25 watts the heater voltage	25	For average pulse input powers greater than 25 watts the heater voltage
minimum capacitance of 4000pF shunted across the heater directly at the	4000	minimum capacitance of 4000pF shunted across the heater directly at the
input terminals; in some cases a capacitance as high as 2uF may be nec-	2 a	input terminals; in some cases a capacitance as high as 2uF may be nec-
between 0 and -55°C the cathode heating time is 3 minutes minimum	3 °C	between 0 and -55°C the cathode heating time is 3 minutes minimum.
voltage pulse above 80% amplitude. Any capacitance in the viewing	80	voltage pulse above 80% amplitude. Any capacitance in the viewing
With anode temperature 40°C + 10°C measured at the point indicated	10 °C	With anode temperature 40°C + 10°C measured at the point indicated
10	1 a	10. Measured with a v.s.w.r. greater than 1.5:1 in all phases of the mis-
Pulses are defined as missing when the r.f. energy level is less than 70%	70	Pulses are defined as missing when the r.f. energy level is less than 70%
of the normal energy level in the frequency range 8770 to 8830MHz	8830	of the normal energy level in the frequency range 8770 to 8830MHz.
pulses applied during any consecutive 5 minute interval of a 15 minute	15 a	pulses applied during any consecutive 5 minute interval of a 15 minute
12	12 a	12. When a signal of the same frequency as the magnetron operating fre-
system. The v.s.w.r. is tested to be greater than 8:1	1 v	system. The v.s.w.r. is tested to be greater than 8:1.
13	6.3	13. Measured with heater voltage of 6.3V and no anode input power, the
heater current limits are 0.43A minimum, 0.60A maximum	0.6	heater current limits are 0.43A minimum, 0.60A maximum.
14	14	14. Design test only. The maximum frequency change with anode tempera-

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
1. Anode temperature to be measured at this point	1	1. Anode temperature to be measured at this point.

TUBE TINKER

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