

Fixed-frequency pulse magnetron for radar and related high-power microwave oscillator applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	63 V / 430 mA	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 puise magnetron

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
Frequency range	9345109405 MHz	Frequency range e 9345109405 MHz
Heatercurrentat63v	5 A	Heatercurrentat63v 05b A
Heater starting current {peak}	3 A	Heater starting current {peak} - 3.0 A
Anode voltage (peak)	8 kV	Anode voltage (peak) 7.0 8.0 kV
Anode current (peak)	8.5 A	Anode current (peak) 55 8.5 A
Pulselength	2	Pulselength — 2.0 us
V.S.W.R. at the output coupler	1 V	V.S.W.R. at the output coupler . - 1.5:1
Heater voltage	6.3	Heater voltage 6.3 6.3 \
Anode current (peak)	7.5 A	Anode current (peak) 7.5 7.5 A
Pulse length	0.1	Pulse length 1.0 0.1 us
Pulse repetition rate	1000 s	Pulse repetition rate 500 1000 p.p.s.
Rate of rise of voltage puise	100 kV	Rate of rise of voltage puise 100 100 kV/us
Anode voltage (peak)	7.6 kV	Anode voltage (peak) 7.6 7.6 kV
Output power (peak)	22 kW	Output power (peak) 22 22 kW
Heater voltage {fortest}	6.3	Heater voltage {fortest} 6.3 6.3 Vv
Anode current {(mean)}	0.37 mA	Anode current {(mean)} 375 0.37% mA
Anode voltage (peak)	8 kV	Anode voltage (peak) 7.0 8.0 7.0 8.0 kV
Output power (mean}	0.75 W	Output power (mean} 9.0 — 0.75 — W
R.F. bandwidth at % power	50 MHz	R.F. bandwidth at % power . - 2.5 — 50 MHz
Cold impedance	0	Cold impedance seenote10

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Temperature coefficient of frequency	12	Temperature coefficient of frequency seenote12
Anode voltage {peak}	7 kV	Anode voltage {peak} 7.0 7.0 kV min
Output power {mean}	80 W	Output power {mean} 80 - W min
R.F. bandwidth at Ypower	35 MHz	R.F. bandwidth at Ypower 35b — MHz max
Frequency	9405 MHz	Frequency 9345 to 9405 - MHz
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
um capacitance of 4000pF shunted across the heater directly at the	4000	um capacitance of 4000pF shunted across the heater directly at the
input terminals; in some cases a capacitance as high as 2uF may be	2 a	input terminals; in some cases a capacitance as high as 2uF may be
ween 0 and -55°C the cathode heating time is 3 minutes minimum	3 °C	ween 0 and -55°C the cathode heating time is 3 minutes minimum.
Defined as steepest tangent to leading edge of voltage pulse-above 80%	80	Defined as steepest tangent to leading edge of voltage pulse-above 80%
amplitude. Any capacitance in viewing system must not exceed 6.0pF	6	amplitude. Any capacitance in viewing system must not exceed 6.0pF.
With the valve operating into a v.s.w.r. of 1.15:1. Pulses are defined as	1 a	With the valve operating into a v.s.w.r. of 1.15:1. Pulses are defined as
level in a 0.5% frequency range. Missing pulses are expressed as a per-	0.5 a	level in a 0.5% frequency range. Missing pulses are expressed as a per-
10	9405	10. For the range 8345 to 9405MHz the impedance of the valve measured
v.s.w.r. of at least 6:1 with a minimum 16.5 to 22.56mm from the	22.56 v	v.s.w.r. of at least 6:1 with a minimum 16.5 to 22.56mm from the
11	6.3	11. 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.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
12	12	12. Design test only. The frequency change with anode temperature change
6. The axis of the heater lead protector will be within 5° o	5 a	6. The axis of the heater lead protector will be within 5° of a normal to
10	10	10. The anode temperature is measured at this point.

TUBE TINKER

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