ELECTRONIC TUBE REFERENCE

CV2364

Specialized - Magnetron electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
MAGNETRON

Fixed-frequency pulsed magnetron covering 2750–2855 MHz in seven bands, delivering about 1.15 MW typical peak RF output. Designed for high-power microwave pulse service with roughly 36 kV peak anode operation.

General characteristics

BASE DESIGNATION	—	**BASE PINS**	—
NOMINAL HEATER	8.6 V / 9 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

SOURCE OPERATING CONDITIONS

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 (in seven bands)	**2855 MHz**	Frequency range (in seven bands) 2750 to 2855 MHz
Typical peak output power	**1.15 MW**	Typical peak output power 1.15 MW
Heater current	**9 A**	Heater current 9.0 A
Cathode heating time (mmlmum)	**3**	Cathode heating time (mmlmum) 3 minutes
Heater starting current (peak)	**50 A**	Heater starting current (peak) - 50 A
Anode voltage (peak)	**40 kV**	Anode voltage (peak) - 40 kV
Anode current {peak)	**80 A**	Anode current {peak) - 80 A
Pulse length	**1.25**	Pulse length — 1.25 us
Anode temperature	**0**	Anode temperature - a0 °c
Cathode terminal temperature	**150**	Cathode terminal temperature - 150 °C
V.S.W.R. at the output coupler	**1 V**	V.S.W.R. at the output coupler — 1.5:1
Heater voltage	**6**	Heater voltage . 6.0 \
Anode current (peak)	**70 A**	Anode current (peak) 70 A
Pulse length	**1**	Pulse length . 1.0 Hs
Pulse repetition rate	**1000 s**	Pulse repetition rate 1000 p.p.s.
Anode voltage (peak)	**36 KV**	Anode voltage (peak) 36 KV
Output power {mean)	**1 kW**	Output power {mean) 1 kW
Magnetic field (see note5)	**1800**	Magnetic field (see note5) . . . 1800 1800 gauss
Heater voltage (fortest)	**6**	Heater voltage (fortest) . . . . . 6.0 6.0 \
Anode current (peak)	**70 A**	Anode current (peak) . . . . . 70 70 A

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
V.S.W.R. at the output coupler	**1 V**	V.S.W.R. at the output coupler L. 1.1 1.5:1
Rate of rise of voltage pulse	**150 kV**	Rate of rise of voltage pulse . . . 180 150 kV/us
Ancde voltage {peak)	**38 kV**	Ancde voltage {peak) . . . . 34 38 - - kV
Efficiency	**40**	Efficiency . . . . . 40 - — — %
Frequency pulling	**7 MHz**	Frequency pulling . . . . . = - — 7.0 MHz
frequency	**8**	frequency senote8
Efficiency	**3 min**	Efficiency . .. . 3B % min
R.F. bandwidth at % power	**25 MHz**	R.F. bandwidth at % power . . . . . 25 MHz max
1. With no anode input power	**1**	1. With no anode input power.
capacitance of 4000pF shunted across the heater directly at the input	**4000**	capacitance of 4000pF shunted across the heater directly at the input
terminals; in some cases a capacitance as high as 2uF may be necessary	**2 a**	terminals; in some cases a capacitance as high as 2uF may be necessary
4. The rate of rise of voltage is the slope of the steepest tangent to the lead-	**4**	4. The rate of rise of voltage is the slope of the steepest tangent to the lead-
ing edge of the voltage pulse above 80% amplitude. Any capacitance used	**80**	ing edge of the voltage pulse above 80% amplitude. Any capacitance used
6. With the valve operating into a mismatch of v.s.w.r. 1.5:1, phased to give	**1 a**	6. With the valve operating into a mismatch of v.s.w.r. 1.5:1, phased to give
level is less than 70% of the normal energy level .in the rated frequency	**70**	level is less than 70% of the normal energy level .in the rated frequency
number of input pulses over an interval of 60 seconds	**60**	number of input pulses over an interval of 60 seconds.
7. Measured with heater voltage of 8.5V and no anode input power, the	**8.5**	7. Measured with heater voltage of 8.5V and no anode input power, the
heater current limits are 8.0A minimum, 10A maximum	**10**	heater current limits are 8.0A minimum, 10A maximum.
8. Design test only	**8**	8. Design test only. The maximum frequency change with anode tempera-