

Long-life fixed-frequency X-band pulse magnetron with integral magnet, producing approximately 4 kW peak output and designed as a stringent replacement type.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	3 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 magnetrons differing only in cold impedance and heater/cathode corrections. M5196A and M5196B are direct replacements for the MBO9A and MBJ9B respectively, being mechanically and electrically interchangeable but tested to more stringent electrical specifications. Under most conditions they have a longer operating life. Frequency range, L. . 945 to 89475 MHz Typical peak output power 4.0 kW Magnet L L. integrat Output no 16 waveguide {0.900 x 0.400 inch internal) Coupler e NATO S.N. 5985-00.083-0051 Cooling Load e natural

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/cathode connections	5196	heater/cathode connections. M5196A and M5196B are direct replacements
Frequency retige	89475 MHz	Frequency retige, L. . 945t 89475 MHz
Typical peak output power	4 kW	Typical peak output power 4.0 kW
Heater voltage	3	Heater voltage B3 \Y
Heater current 2163V	5 A	Heater current 2163V 05 A
input capacitance	90 pF	input capacitance 90 pF max
any	3	any Heaterwnltage {(fortest) &3 \Y
Anode currentimean}y	30 mA	Anode currentimean}y 30 mA
Cooling	70 v	Cooling..v.k,.....'.naturai ~ate of rise of voltage pulse (seenote3) 70 kW {us
"aodevoltage {peak)	38 kV	"aodevoltage {peak) 3.2 38 kV
Frequency (sge notle 5)	3475 MHz	Frequency (sge notle 5) . . 9415 3475 MHz
Ancde voltage {peak)	38 kW	Ancde voltage {peak) 32 38 kW Frequency pulling (v.s.w.r. not less
Anade current (peak)	18 S	Anade current (peak) S 25 35 A than15:1) = 18 MRz
Ancde temperatuie	120	Ancde temperatuie - 120 °c Temperature coefficient of frequency seenote1D
Heater vohwage (for operaticyy	8.3	Heater vohwage (for operaticyy 8.3 i netron is to be operated under conditions other than those specified herein,
Anode current {peak)	30 A	Anode current {peak) 30 A English Electric Valve Company Ltd. shou!d be consulted to verify that the

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pulse duration	0.1 s	Pulse duration s 0.1 us life of the tube will not be impaired.
Pulse repetition rate	5	Pulse repetition rate 2000 D5,
Rate of rise of voltage pulse	0 kV	Rate of rise of voltage pulse & 0 kV/us End of Life Criteria (under Test Conditions above)
Arc voltage {peak}	25 kV	Arc voltage {peak} 38 kV Output power (peak) . ~ 25 - kW
Output power [peak]	9475 MHz	Output power [peak] .. .o . Frequency P TM 3 9475 MHz
Output power {mean}	35 W	Output power {mean} T ₀ - W R.F. bandwidth at % power (see note) . . — 35 MHz
MB196B is identical in outline with MB196A but the heater and cathode	196	MB196B is identical in outline with MB196A but the heater and cathode
Detail of M5196B Heater and Cathode Terminals	4	Detail of M5196B Heater and Cathode Terminals Red 376/4/Red Heater
Biue	3	Biue 378A/3/Blazk Heater. Cathode

TUBE TINKER

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