ELECTRONIC TUBE REFERENCE

CV10758

Specialized - Magnetron electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
MAGNETRON

Fixed-frequency high-power pulsed magnetron designed for radar and related short-pulse microwave service in its specified operating band.

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 cormections. M5196A and M5196B are direct replacements for the MBO9A and MBJ9B respectively, being mechanically and electrically interchangeable but tested to more stringent alectrical specifications. Under most conditions they have a longer operating life. Frequency retige . . . . . ., L. . 945t 89475 MHz Typica! peak output power . . . . . 4.0 kW Magnet . . . . . L L. integrat Qutput . . . . . no 16waveguide {0.900 x 0.400 inch internal) Coupier e NATO S.N. 5985-00.083-0051 Cooling Lo e natural

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**
heater/cathode cormections	**5196**	heater/cathode cormections. M5196A and M5196B are direct replacements
Frequency retige	**89475 MHz**	Frequency retige . . . . . ., L. . 945t 89475 MHz
Typica! peak output power	**4 kW**	Typica! 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 . . . . . seenotelD
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 wili not be impaired.
Pulse repetition raiz	**5**	Pulse repetition raiz 2000 D5,
Rate of rise of voltagepulse	**0 kV**	Rate of rise of voltagepulse . . . . . &0 kV/us End of Life Criteria (under Test Conditions above)
Arode voltage {peak)	**25 kv**	Arode voltage {peak) . . . . 38 kv Qutputpower (peak) . ~ . . . . . 25 - kw
Output power [peak)	**9475 MHz**	Output power [peak) .. .o . Frequency . . . . P ™3 | 9475 MHz
Output power {mean)	**35 w**	Output power {mean) T ¢ - w R.F. bandwidth at % power (seenoted) . . -— 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

An independent reference for electronic tubes, vacuum tubes, and their source documents.

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