

MAGNETRON

Fixed frequency multi-cavity magnetron incorporating a permanent magnet system, for pulsed operation within the 'X' band.

JP9-15

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS – MICROWAVE DEVICES included in this volume of the handbook.

FREQUENCY (measured with the anode block at 60°C)
Within the band 9345 to 9405 Mc/s

CATHODE

Indirectly heated

V_h 6.3 V
 I_h 600 mA

Under some conditions of operation it is desirable to reduce the heater voltage immediately after applying the anode power to compensate for additional heating of the cathode when the magnetron is oscillating.

Heating time. At ambient temperatures above 0°C the cathode must be heated for at least 2 minutes before the application of h.t. Below this temperature the heating must be increased to 3 minutes.

LIMITING VALUES (absolute ratings)

Anode pulse current		
Maximum	7.0	A
Minimum	5.0	A
Maximum anode input pulse power	56	kW
Maximum duty cycle	0.001	
Maximum pulse duration	2.5	μs
Maximum mean anode input current	7.0	mA
Maximum mean anode input power	56	W
Maximum rate of rise of voltage pulse	100	kV/μs
Maximum temperature of anode block	120	°C

CHARACTERISTICS

Anode pulse voltage (at $I_a = 6.5A$)		
Maximum	8.0	kV
Minimum	6.5	kV
Frequency pulling (for v.s.w.r. = 1.5)	< 18	Mc/s
Minimum output pulse power ($I_{a(pulse)} = 6.5A$)	15	kW
Distance of v.s.w. minimum from mounting plate inwards	16.5 to 22	mm

TYPICAL OPERATION

Pulse duration	0.1	2.0	μs
Pulse repetition frequency	2000	500	p/s
R.F. power output during pulse	19.5	19.5	kW
Mean anode current	1.3	6.5	mA
R.F. mean power output	3.9	19.5	W
Frequency pulling (for v.s.w.r. = 1.5)	15	15	Mc/s
Heater voltage (immediately after h.t. has been applied)	6.3	4.5	V

WEIGHT

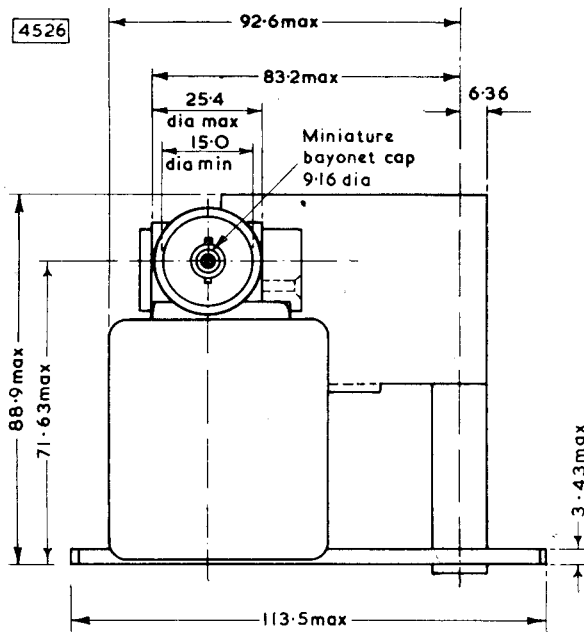
Valve only		3.7	lb
		1.7	kg
Shipping weight		6.4	lb
		2.9	kg
Dimensions of packing	197 × 204 × 248		mm



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All dimensions in mm

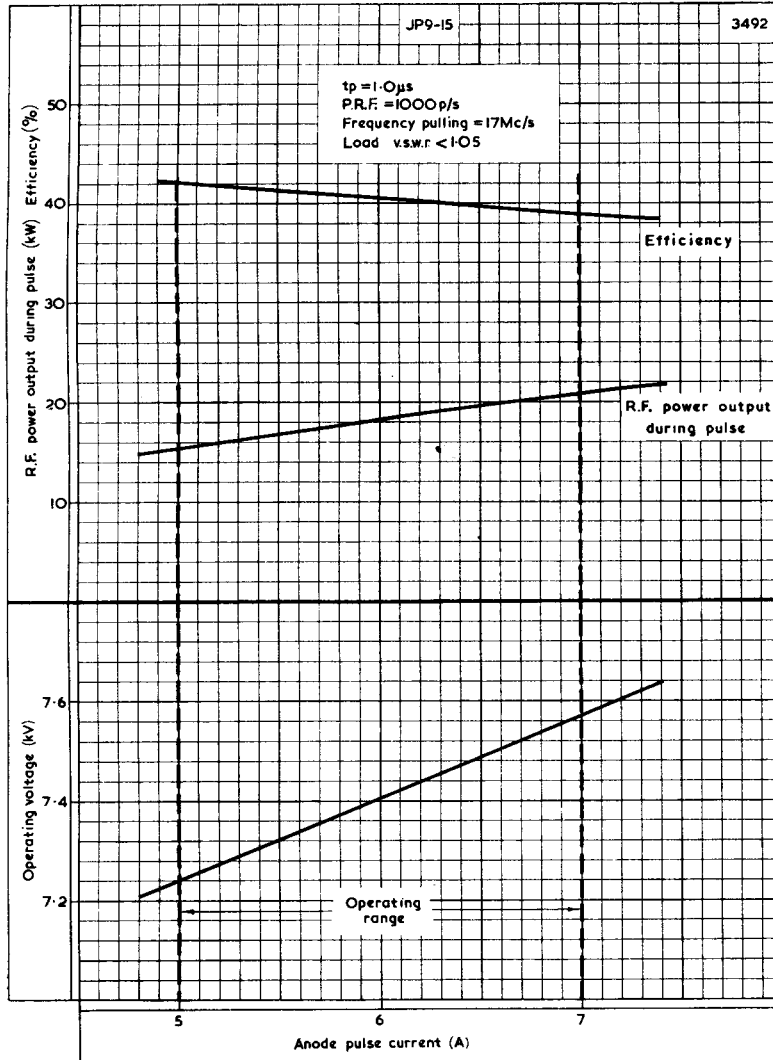
CONNECTIONS

The common heater cathode connection is the sleeve of the bayonet cap. The other heater terminal is the centre contact. The anode connection is terminated at the base plate.

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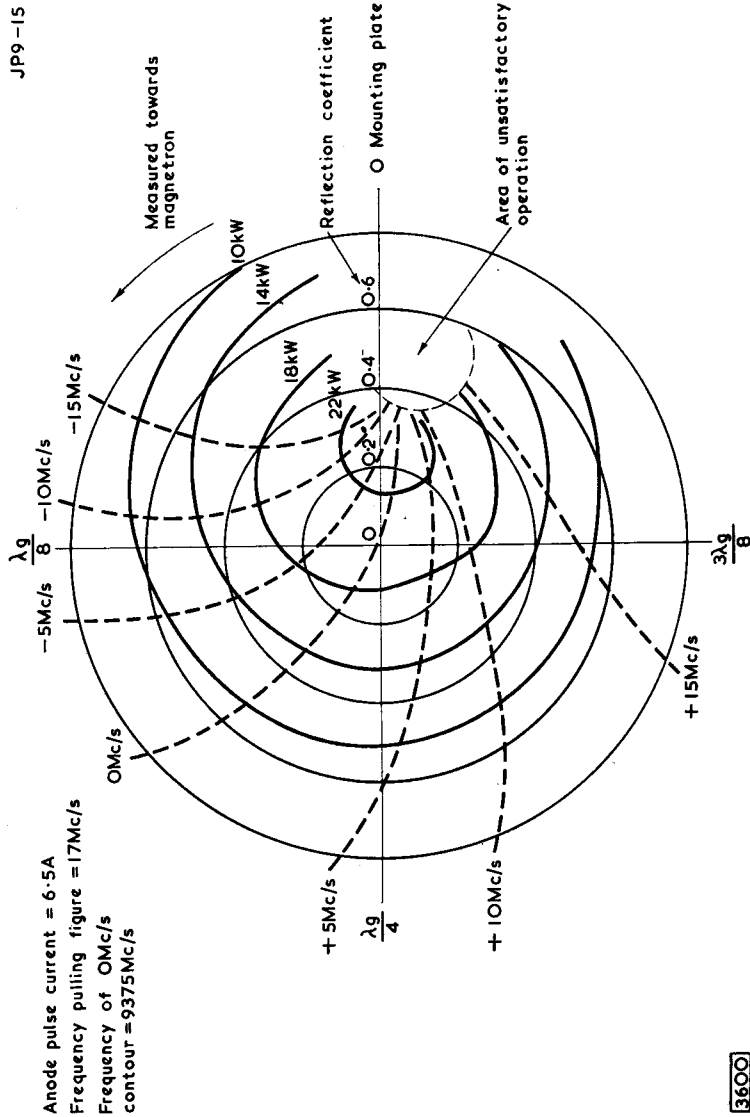


OPERATING VOLTAGE, R.F. POWER OUTPUT DURING PULSE AND EFFICIENCY PLOTTED AGAINST ANODE PULSE CURRENT

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RIEKE DIAGRAM

