

## MAGNETRON

Frequency: 'X' band, fixed  
 Power output: 3.0kW  
 Construction: Packaged, natural cooling

# JP9-2.5 JP9-2.5B

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS – MICROWAVE DEVICES: INTRODUCTION and RADAR AND COMMUNICATION MAGNETRONS which precede this section of the handbook.

### CHARACTERISTICS

		Min.	Max.	
Frequency				
Fixed within the band	JP9-2.5	9.345 to	9.475	Gc/s
	JP9-2.5B	9.190	9.320	Gc/s←
Pulse voltage ( $I_{\text{pulse}} = 3.0\text{A}$ )		3.2	3.6	kV
R.F. pulse power output ( $I_{\text{pulse}} = 3.0\text{A}$ )		2.5	—	kW
Frequency pulling factor (v.s.w.r. = 1.5)		—	18	Mc/s
Frequency pushing factor		—	2.5	Mc/s per A
Frequency temperature coefficient		—	0.25	Mc/s per °C
Distance of v.s.w. minimum from face of mounting plate into valve		3.0	9.0	mm
Input capacitance		—	9.0	pF

### CATHODE

Indirectly heated

$V_h$	6.3	V
$I_h$	500	mA

**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 time must be increased to at least 3 minutes.

### TYPICAL OPERATION

Duty cycle	0.0002	
Heater voltage (running)	6.3	V
Pulse duration	0.1	$\mu\text{s}$
Pulse repetition frequency	2000	p/s
Pulse current	3.0	A
Pulse voltage	3.4	kV
Pulse input power	10	kW
R.F. pulse output power	3.0	kW
Mean input current	600	$\mu\text{A}$
Mean input power	2.0	W
Mean r.f. output power	600	mW
Frequency pulling (v.s.w.r. = 1.5)	15	Mc/s
Rate of rise of pulse voltage	50	kV/ $\mu\text{s}$

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### ABSOLUTE RATINGS

	<i>Min.</i>	<i>Max.</i>	
Pulse current	2.25	3.5	A
Pulse voltage	3.0	3.7	kV
Pulse duration	0.02	1.0	$\mu$ s
Duty cycle	—	0.001	←
Mean input power	—	13	W←
Rate of rise of voltage pulse	—	60	kV/ $\mu$ s
Load mismatch (v.s.w.r.)	—	1.5	
Temperature of anode block	—	120	°C

### MOUNTING POSITION

Any

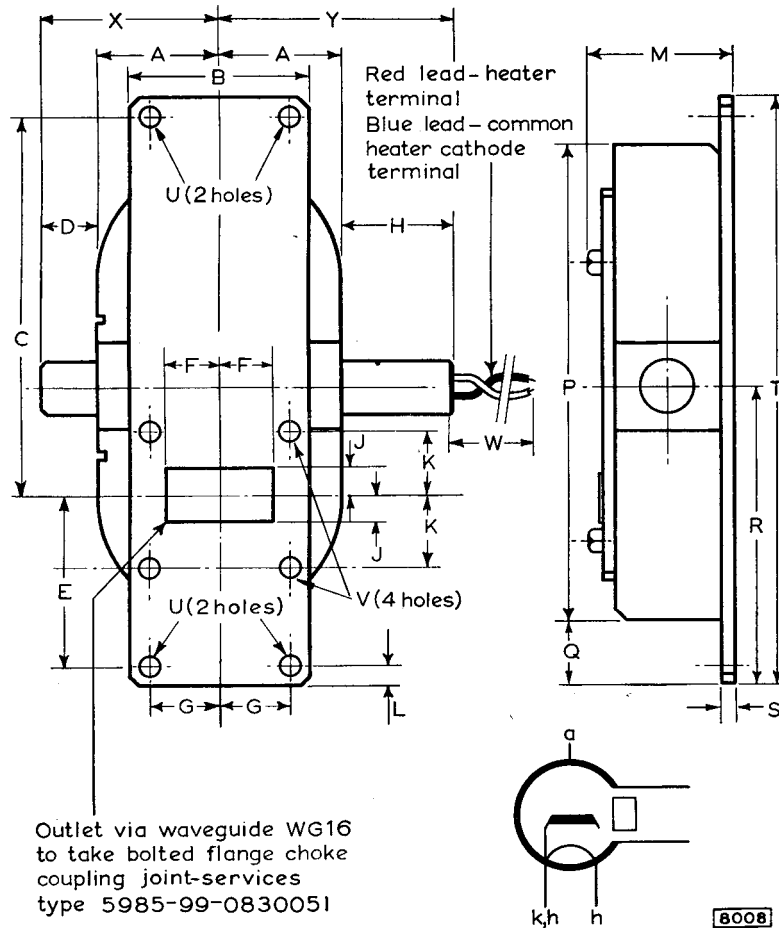
### PHYSICAL DATA

Weight of magnetron	{ 2 lb 1.02	4 oz kg
Weight of magnetron in carton	{ 4 1.82	lb kg
Dimensions of storage carton	{ 7.5 × 7.5 × 11 190 × 190 × 280	in mm

### DIMENSIONS

	<i>Inches</i>	<i>Millimetres</i>	
A	1.181	30	max.
B	1.625 ± 0.015	41.28 ± 0.38	
C	3.463 ± 0.001	87.960 ± 0.025	
D	0.591	15	max.
E	1.521 ± 0.001	38.633 ± 0.025	
F	0.450 ± 0.001	11.400 ± 0.025	
G	0.610 ± 0.001	15.500 ± 0.025	
H	0.984	25	max.
J	0.200 ± 0.001	5.100 ± 0.025	
K	0.640 ± 0.001	16.255 ± 0.025	
L	0.175 ± 0.003	4.44 ± 0.08	←
M	1.457	37	max.
P	4.528	115	max.
Q	0.482 ± 0.167	12.25 ± 4.25	
R	2.717 ± 0.156	69 ± 4	
S	0.157	4.0	min.
T	5.335 ± 0.007	135.50 ± 0.17	←
U	0.175 ± 0.003	4.445 ± 0.076	dia.
V	0.170 ± 0.001	4.318 ± 0.025	dia.
W	8.000 ± 0.500	203.20 ± 12.70	
X	1.772	45	max.
Y	2.165	55	max.

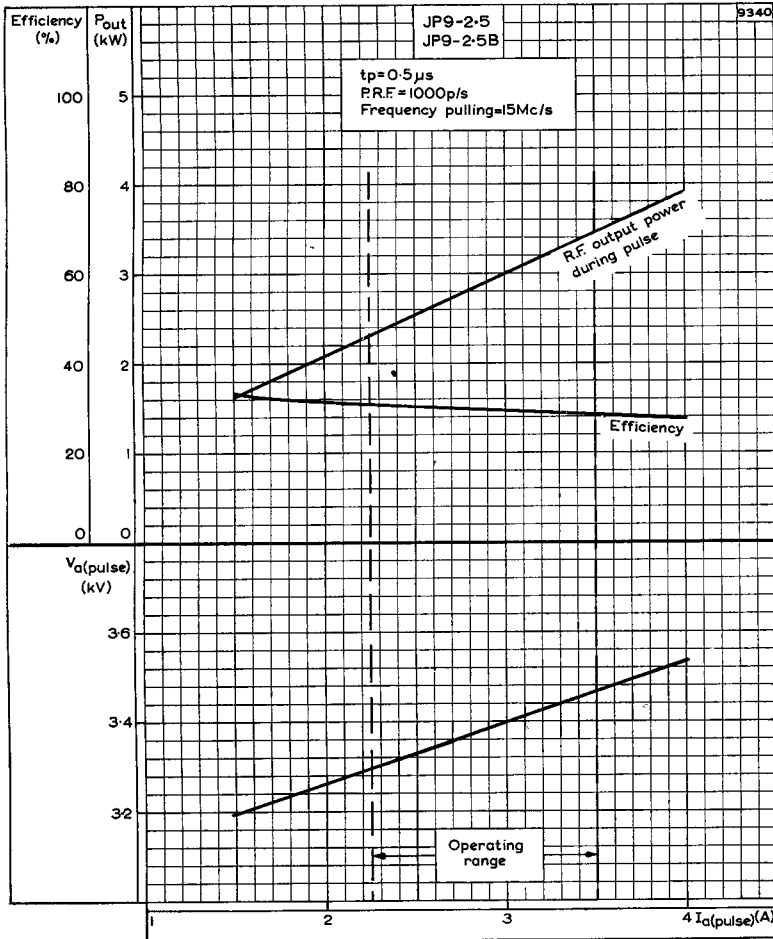
# JP9-2.5 JP9-2.5B



THE ANODE IS TERMINATED AT THE BASE PLATE

MAGNETRON

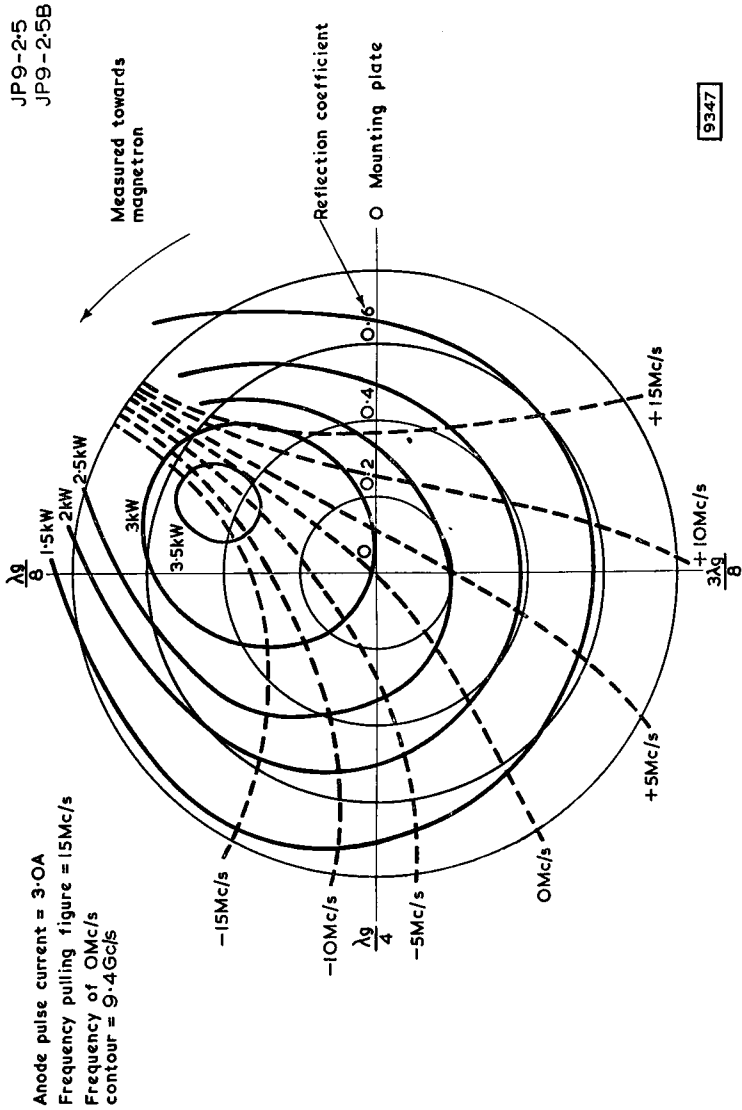
# JP9-2.5 JP9-2.5B



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

# JP9-2.5 JP9-2.5B

## MAGNETRON



RIEKE DIAGRAM

