

MAGNETRON

Frequency: 2450 ± 25 Mc/s, fixed
Power output: 200W, c.w.
Construction: Packaged, natural cooling
Application: Microwave heating

JP2-0·2

PRELIMINARY DATA

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—MICROWAVE DEVICES preceding this section of the handbook.

CHARACTERISTICS

Frequency fixed within the band	2425 to 2475	Mc/s
Operating voltage range ($I = 200\text{mA}$)	1.5 to 1.7	kV
R.F. power output ($I = 200\text{mA}$)	> 175	W

CATHODE (indirectly heated)

* V_h	5.3	V
I_h at 5.3V	3.2 to 3.4	A
r_h (cold)	0.35	Ω
t_{h-k} (min.)	2	min

*The cathode has been designed to accept temporary fluctuations of heater voltage of $\pm 5\%$ to -10% .

The surge current when switching on must not exceed 6A.

The heater voltage must be reduced to 4.5V ($I_h = 2.8\text{A}$) immediately after the application of the h.t. if the anode current is $> 120\text{mA}$. At anode currents $< 120\text{mA}$ the heater voltage must not be reduced.

TYPICAL OPERATION

Frequency	2450	Mc/s
Heater voltage	4.5	V
Operating current	200	mA
*Operating voltage	1.6	kV
R.F. output power	200	W

*R.M.S. of alternating voltage or of unfiltered d.c. from single-phase full-wave rectifier.



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COOLING

Natural cooling is sufficient provided that the magnetron is effectively mounted on a heat conducting non-magnetic chassis. It is desirable to mount the chassis vertically.

MOUNTING POSITION

Any (but see COOLING)

LIMITING VALUES (absolute ratings)

V_h starting max.	5.6	V
I_h surge max.	6.0	A
*Operating current max.	220	mA
Mean input power max.	370	W
Mismatch of load to magnetron (v.s.w.r.) max.	2.0	
Temperature of anode block max.	125	°C

*R.M.S. of alternating voltage or of unfiltered d.c. from single-phase full-wave rectifier.

STORAGE AND HANDLING

During transport and storage a minimum distance of 6 inches should be maintained between magnetrons. In equipment a minimum radial distance of 2 inches must be maintained between the magnetron and magnetic materials. Non-magnetic tools should be used in handling the magnetron.

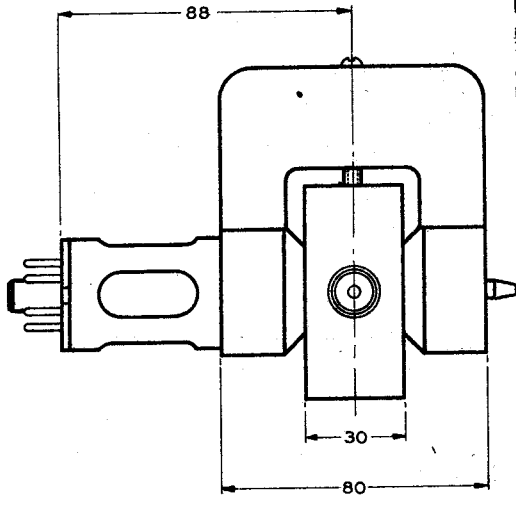
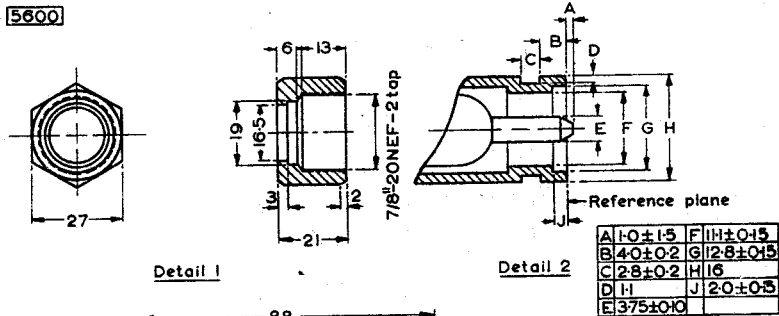
WEIGHT

Weight of magnetron	{	5.5	lb
		2.4	kg
Weight of magnetron in carton	{	7.5	lb
		3.5	kg

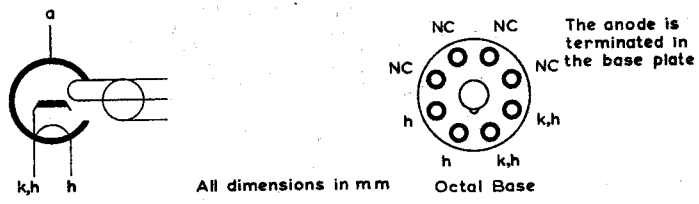
OPERATING NOTE

The valve is designed to feed into a 50Ω $\frac{1}{2}$ inch coaxial transmission line.

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Note:
The inner conductor (E above) will always lie within a circle of diameter 5.5mm



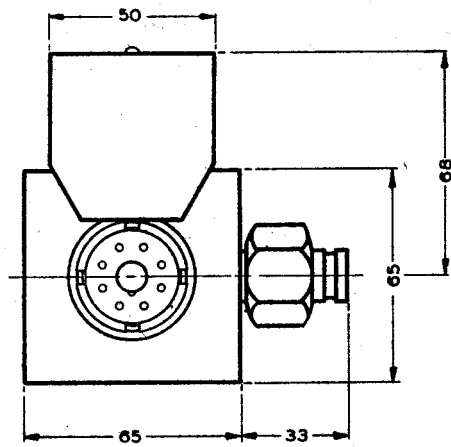
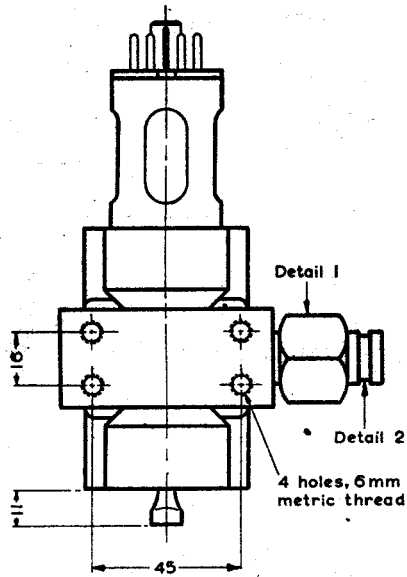
All dimensions in mm

Octal Base



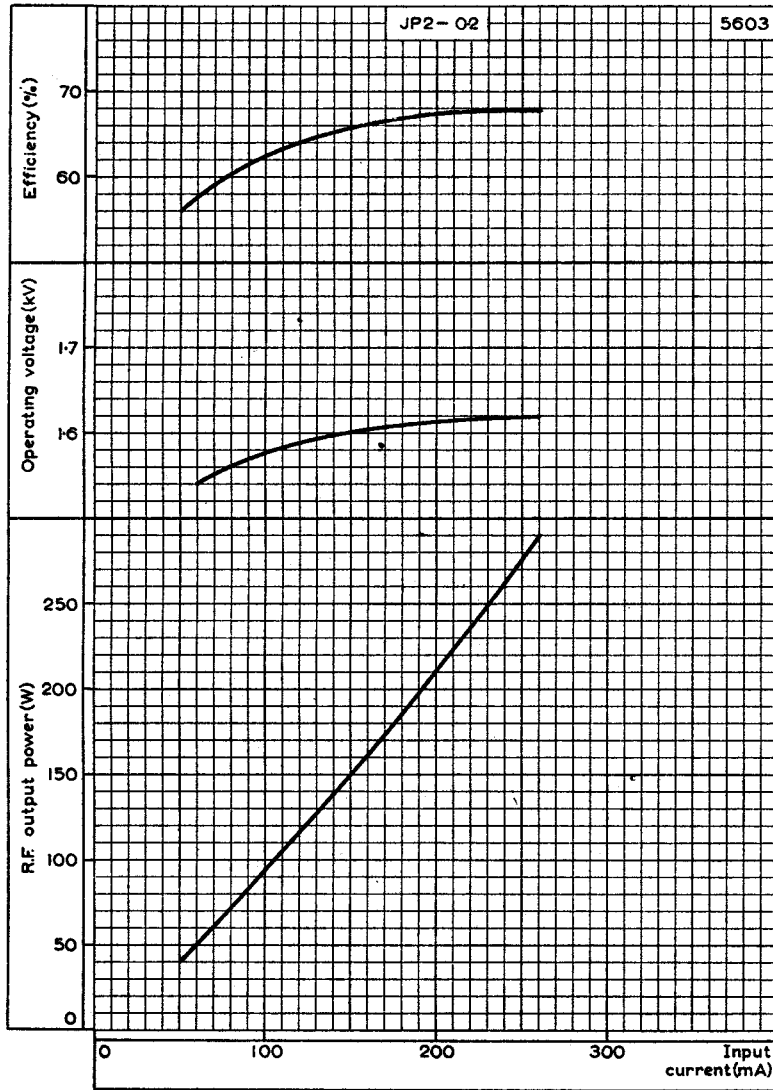
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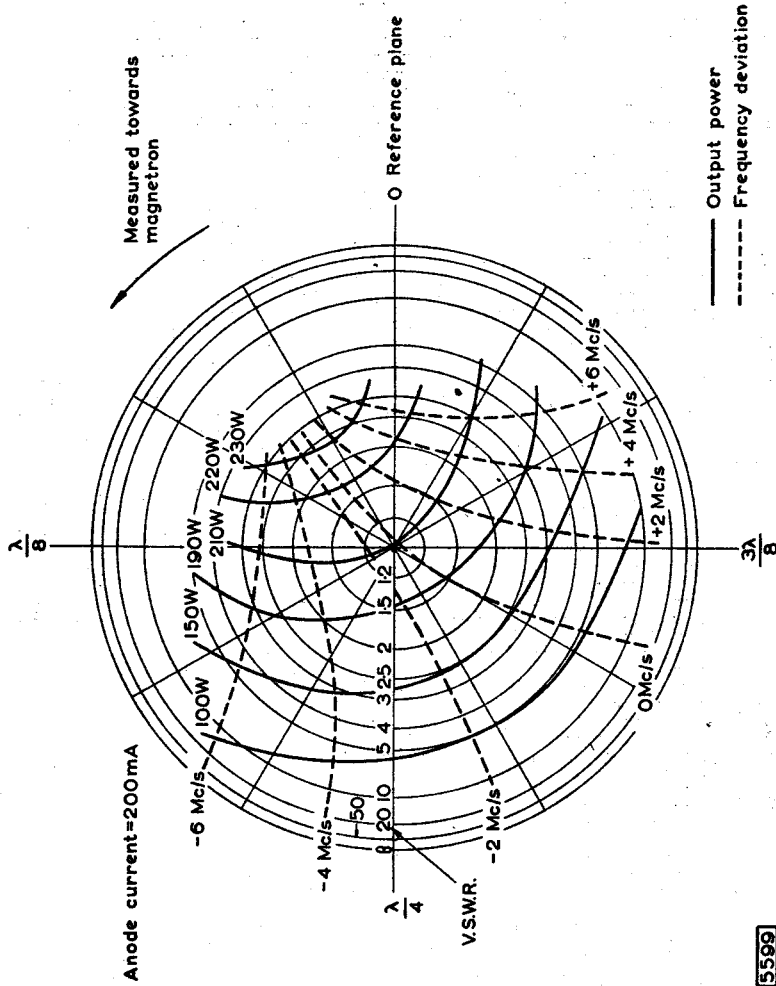
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All dimensions in mm



OPERATING VOLTAGE, R.F. POWER OUTPUT AND EFFICIENCY PLOTTED AGAINST INPUT CURRENT





RIEKE DIAGRAM