

# TUNABLE MAGNETRON

# JPT9-01

Tunable magnetron incorporating a permanent magnet system, for c.w. operation in the X-band and suitable for amplitude modulation.

## PRELIMINARY DATA

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

**FREQUENCY RANGE** 9150 to 9600 Mc/s  
Mechanical tuning is effected by a single control.

### CATHODE

Indirectly heated

$V_h$	6.3	V
$I_h$	1.1	A

The heater voltage must be reduced immediately upon application of the h.t. power, the operating voltage being as low as possible consistent with stable operation. This reduction will vary from valve to valve and for maximum life individual adjustment is recommended.

**Heating time.** The heater voltage shall be applied at least two minutes before the application of h.t. voltage.

### COOLING

Maximum temperature of anode block 140 °C  
In order to keep within this maximum temperature limit forced air cooling at a rate of at least 5 cu.ft/min. will be required.

### LIMITING VALUES (absolute ratings)

Maximum anode current (unmodulated c.w.)	60	mA
Minimum anode current	20	mA
Maximum peak anode current (modulated c.w.)	100	mA
Maximum mean anode input power	60	W

### CHARACTERISTICS

Anode voltage range ( $I_a = 50\text{mA}$ )	900 to 1100	V
Frequency pulling (for v.s.w.r. = 1.5)	< 20	Mc/s
Frequency pushing	< 1	Mc/s per mA
Minimum power output ( $f = 9150$ to $9600\text{Mc/s}$ )	5.0	W

### TYPICAL OPERATION

Frequency	9200	9400	9550	Mc/s
Anode current	50	50	50	mA
Anode voltage	920	930	930	V
Output power	10.5	10.6	9.7	W

### OPERATING NOTE

Under certain operating conditions a negative resistance characteristic may occur causing excessive current and to avoid this the total series resistance of the supply circuit should be at least  $6k\Omega$ .

### WEIGHT

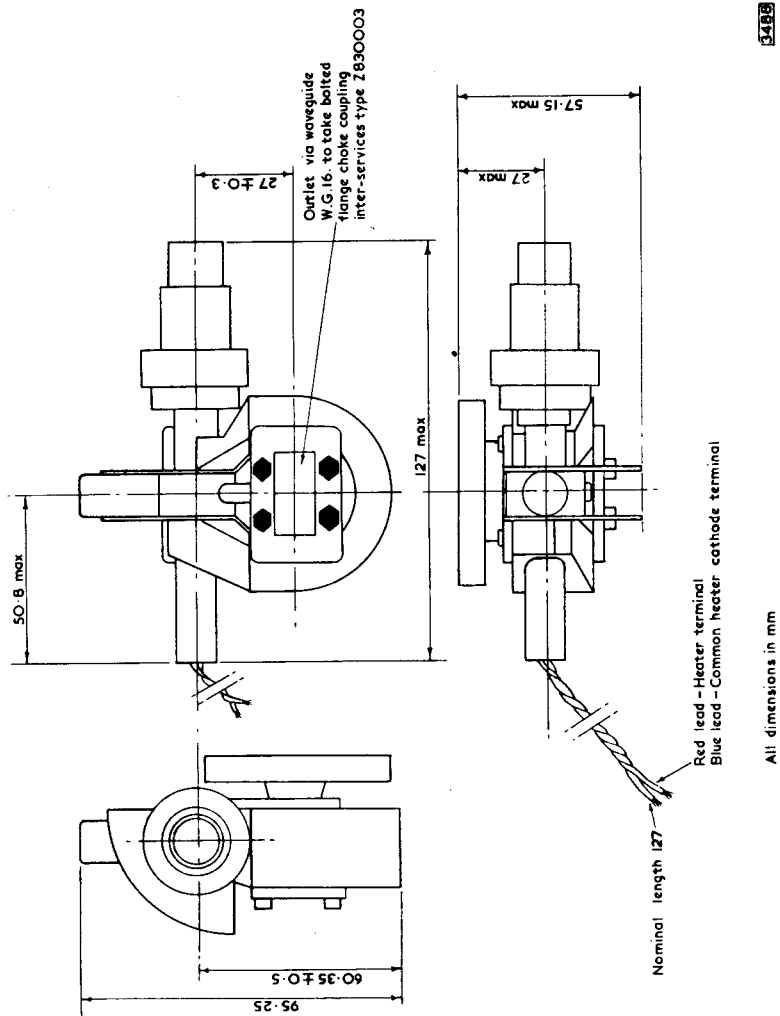
Valve only	}	1.5	lb
		710	g
Shipping weight		2.5	lb
		1.16	kg
Dimensions of packing		$127 \times 178 \times 190$	mm



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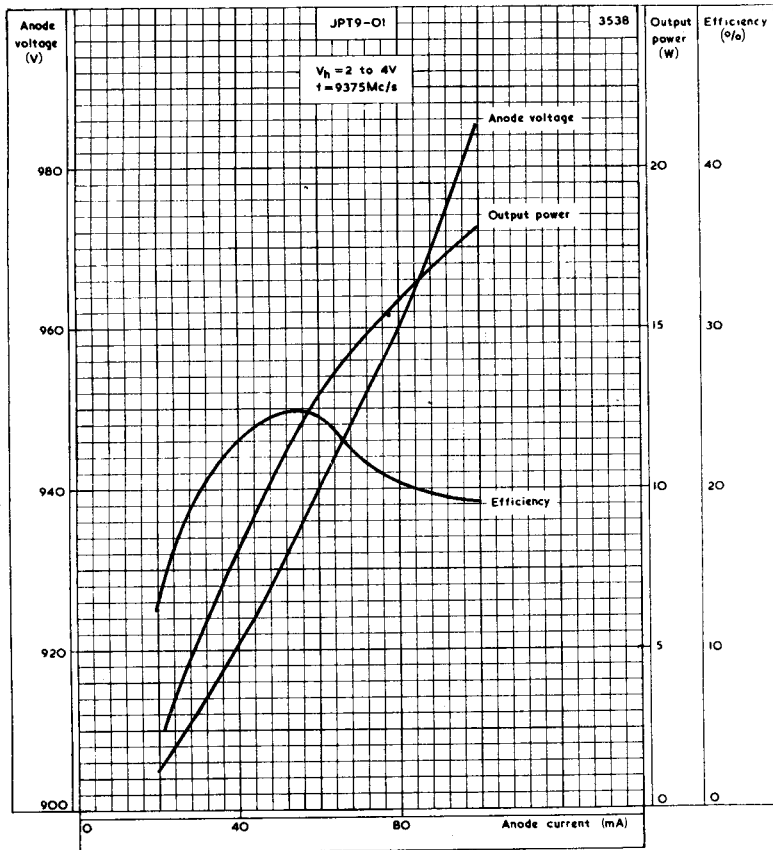
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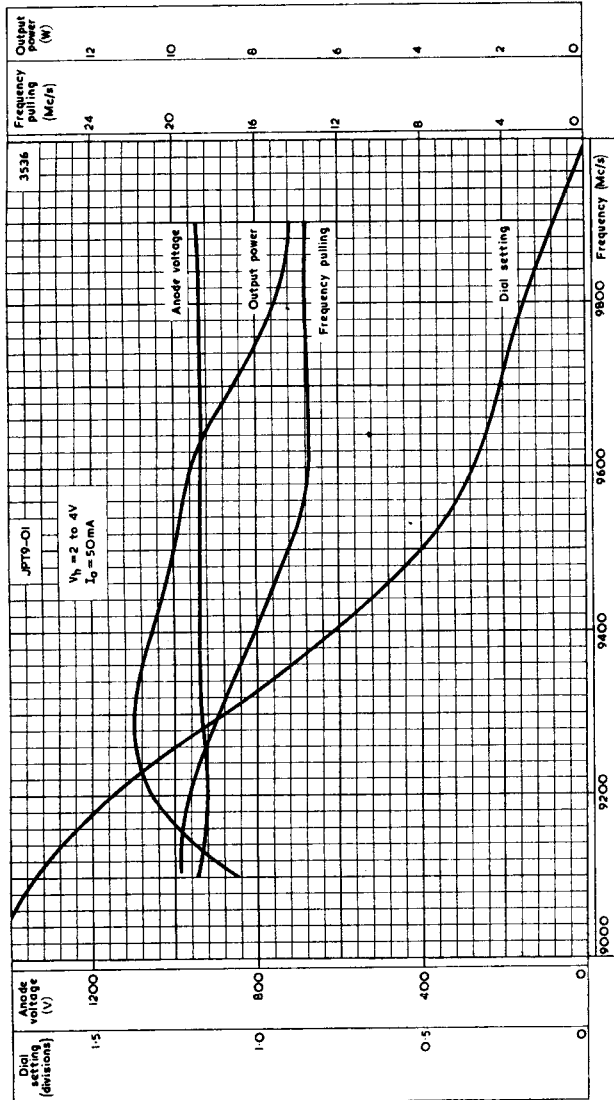
ANODE VOLTAGE, OUTPUT POWER AND EFFICIENCY PLOTTED AGAINST ANODE CURRENT



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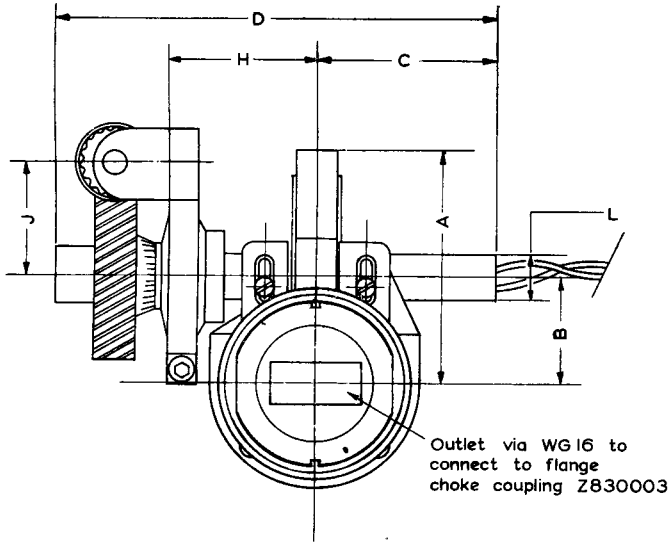


ANODE VOLTAGE, OUTPUT POWER, DIAL SETTING AND FREQUENCY PULLING PLOTTED AGAINST FREQUENCY

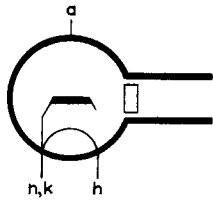
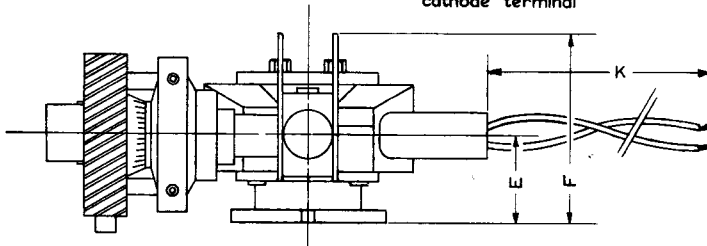


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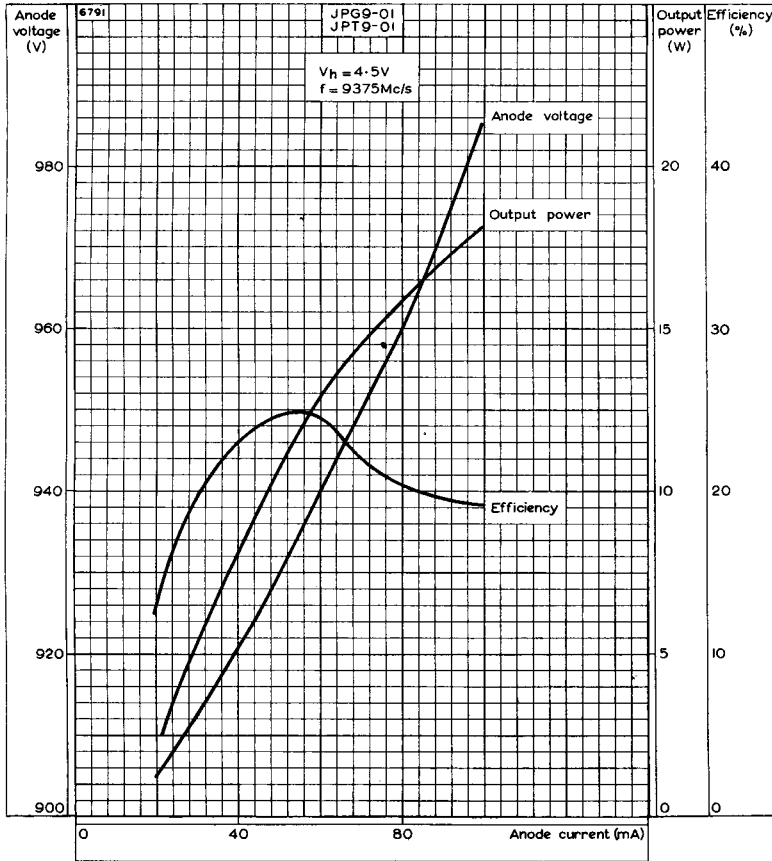


Red lead - heater terminal  
Blue lead - common heater  
cathode terminal



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ANODE CONNECTION TERMINATED AT THE BASE PLATE

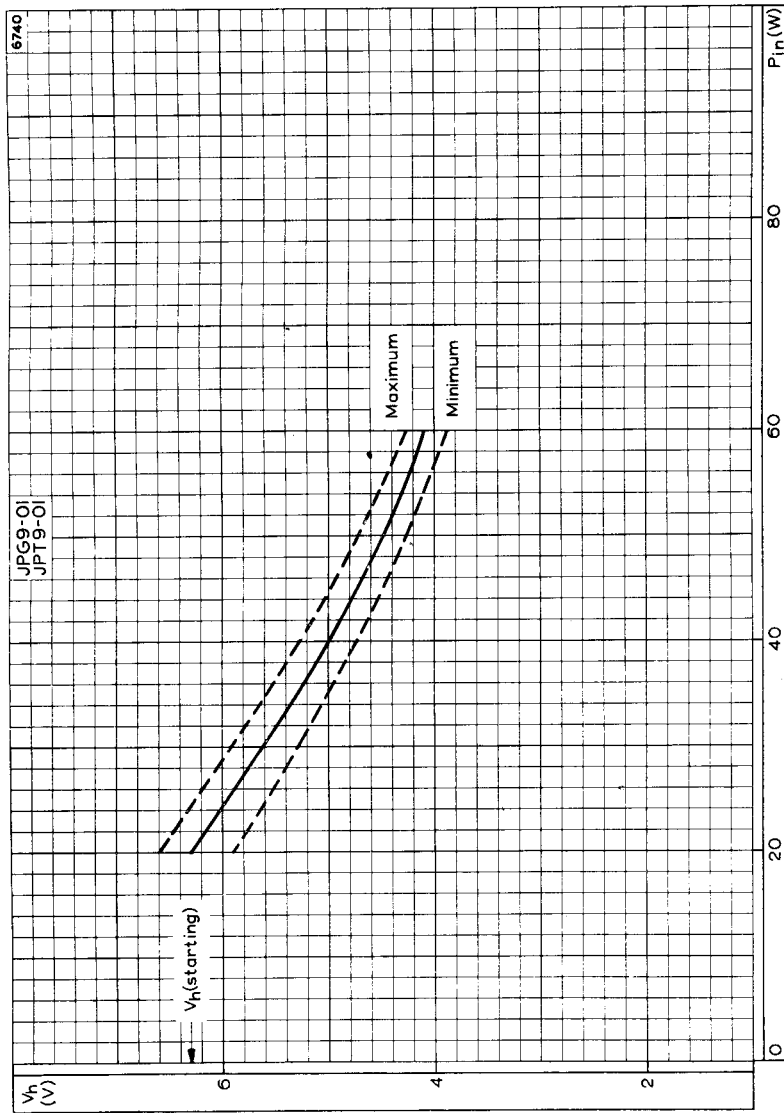


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HEATER VOLTAGE PLOTTED AGAINST MEAN INPUT POWER