

HITACHI ELECTRON TUBE

The HITACHI 2M251 is fixed frequency continuous wave magnetron intended for use in microwave ovens and industrial microwave heating applications.

The useful RF power output at 2450 MHz band is approx. 3000 watts into a matched load.

HITACHI 2M251 CW MAGNETRON

26 January 2001
【TENTATIVE DATA】

FEATURES

1. Suitable performance and excellent reliability for use in microwave ovens and industrial microwave heating applications
2. Sufficient noise suppression with the improvement of integrated filter circuit

GENERAL DATA

ELECTRICAL

Filament Voltage (Stand-by)	.....	4.0	V
Filament Voltage (Operation)	.....	( Fig. 1)	
Filament Current (Stand-by)	.....	23	A
Filament Surge Current (peak)	.....	100	A
Filament Pre-heating Time	.....	12	sec
Frequency (with matched load)	.....	2455	MHz
Recommending Operation	.....	Continuous	
Anode Potential	.....	Grounded	
Filament Potential	.....	Negative High Voltage	
		- 5.2	kV
Magnet	.....	Permanent Magnet	

MECHANICAL

Dimensions : See dimensional outline (Fig. 5).

Width	.....	120	mm MAX.
Length	.....	129	mm MAX.
Height (antenna height is excluded.)	.....	149	mm MAX.
Antenna height	.....	48	mm MAX.
Weight	.....	Approx. 3.1	kg
Mounting Position	.....	Vertical axis either end up	
Cooling	.....	Forced Air	

(Fig. 4)

ABSOLUTE MAXIMUM RATINGS

	Min.	Max.	Unit
Filament Voltage (Stand-by)		3.8	4.2 V
Filament Voltage (Operation)		(Fig. 1) (Fig. 1)	V
Preheating Time		8	- s
Average Anode Current		-	900 mAdc
Peak Anode Current		-	2500 mAdc
Average Anode Input		-	4600 W
Load VSWR (Continuously)		-	4
Anode Core Temperature		-	160
Storage Temperature		-30	60
Antenna Temperature (metal-ceramic seal point)		-	350
Case Temperature		-	100

2M251

TYPICAL OPERATION

Test conditions : at a matched load, and with the power supply of single phase full-wave rectifier without filter

Filament Voltage (Stand-by)	.....	4.0	V
Filament Voltage (Operation)	.....	2.2	V
Average Anode Current	.....	840	mA
Peak Anode Voltage	.....	5.2	kV
Average Power Output (matched load)	.....	3000	W
Frequency (matched load)	.....	2455	MHz
Cooling Air Flow	.....	2.0	m ³ /min
Static Pressure Drop	.....	270	Pa

Note :

- (1) The information contained herein is tentative and may be changed without prior notice. It is therefore advisable to contact HITACHI before proceeding with the design of equipment incorporating this product.
- (2) Data are based on the Testing Methods for Continuous Wave Magnetrons ED-1501 (ET-145A) set by the Electronic Industries Association of Japan (EIAJ).
- (3) Precautions for Safety : Please see attached news letter of No. NL73M1053.

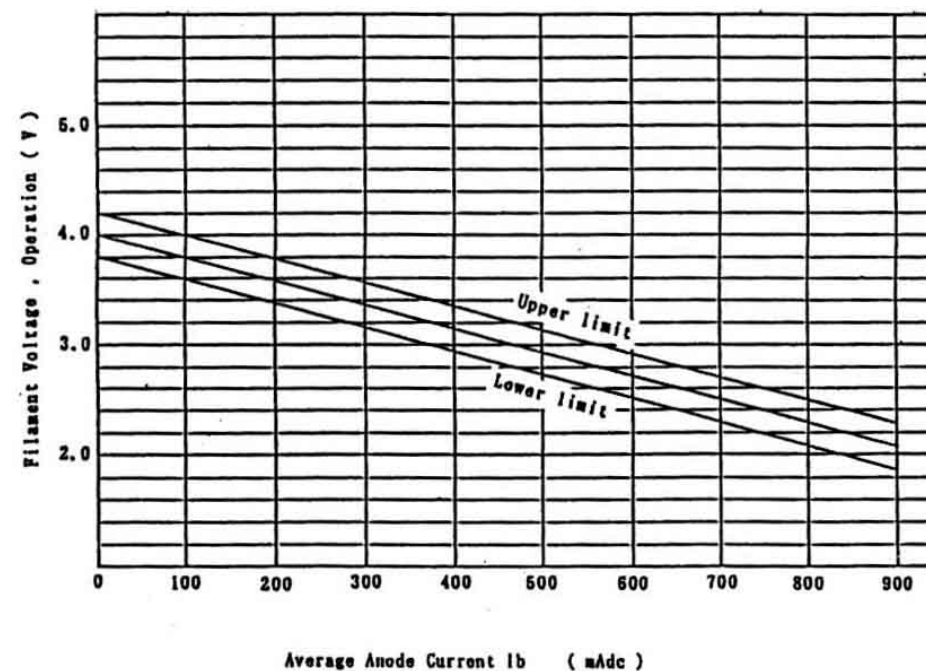
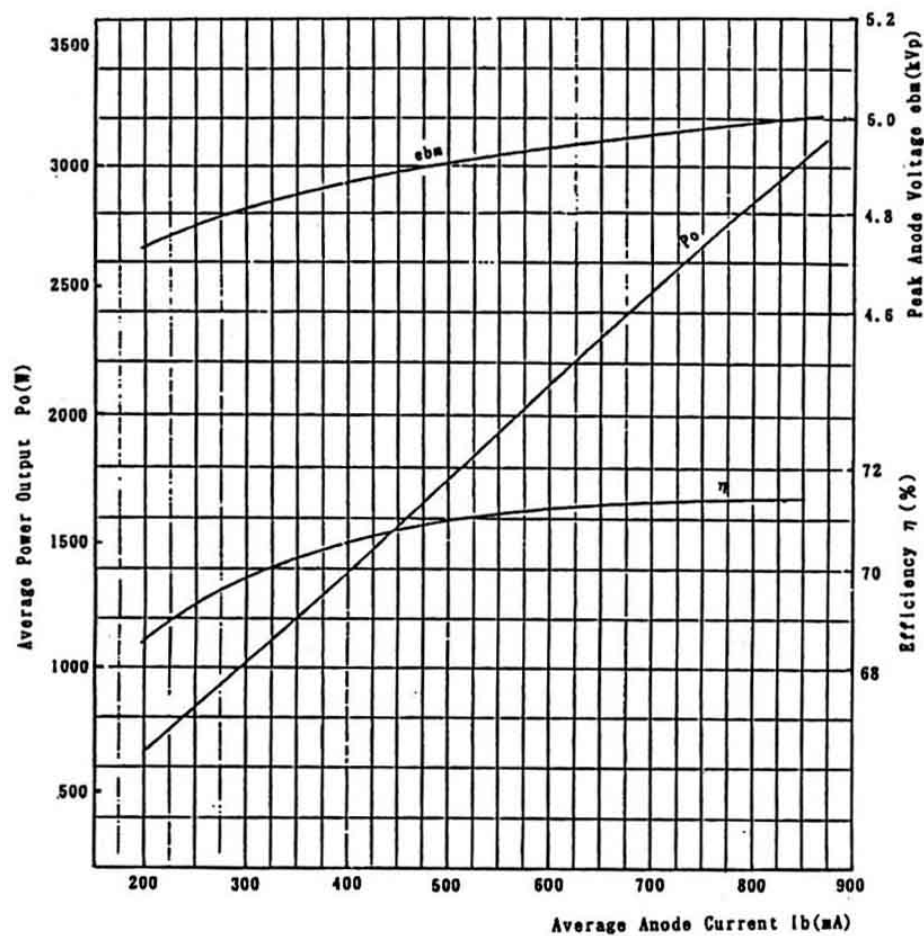


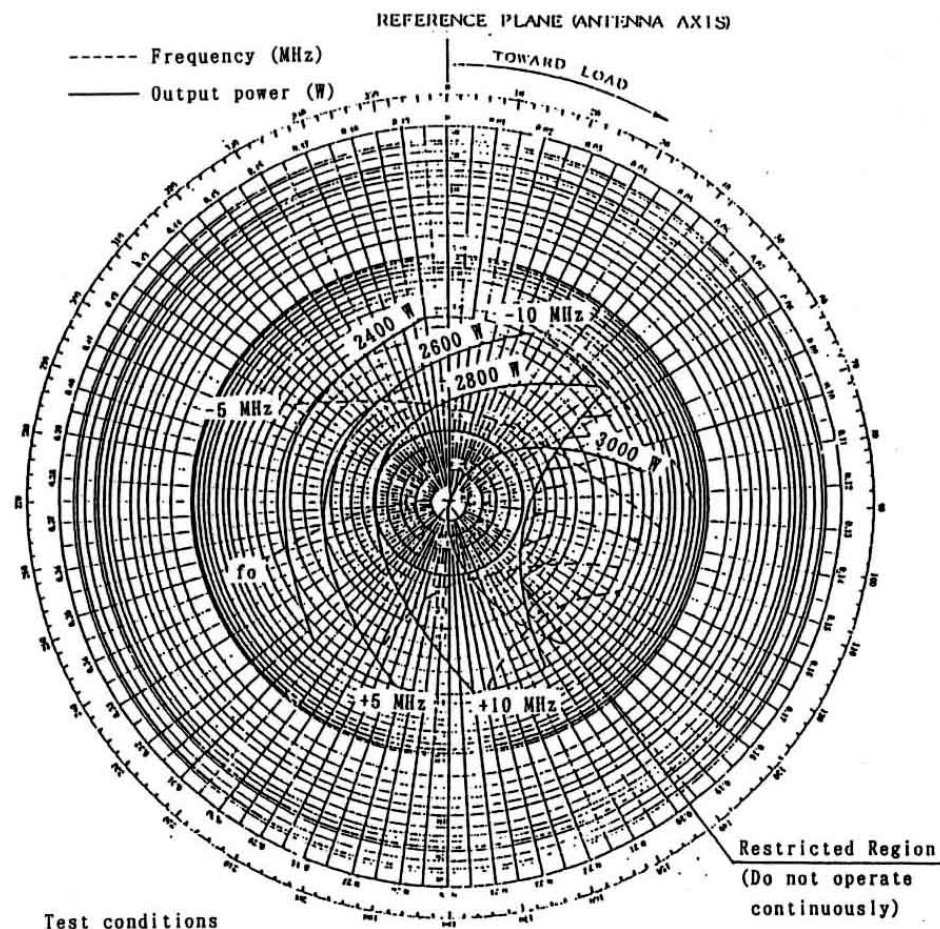
Fig. 1 Reduction Chart of Filament Voltage



Test conditions

1. Load VSWR : $\sigma L \leq 1.1$
2. Anode supply : Single phase, full wave rectifier without filter

Fig. 2 Performance Chart of The 2M251



Test conditions

1. Average anode current : 840 mA
2. Anode supply : Single phase, full wave rectifier without filter
3. Filament Voltage : 2.2 V

Fig. 3 Rieke Diagram of The 2M251

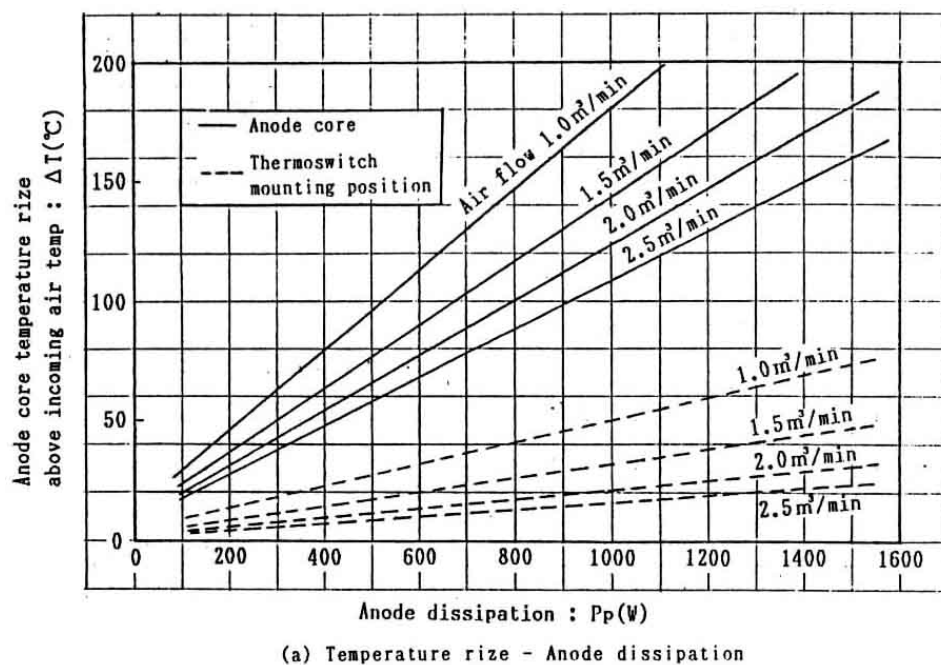


Fig. 4(A) Cooling Requirements of The 2M251

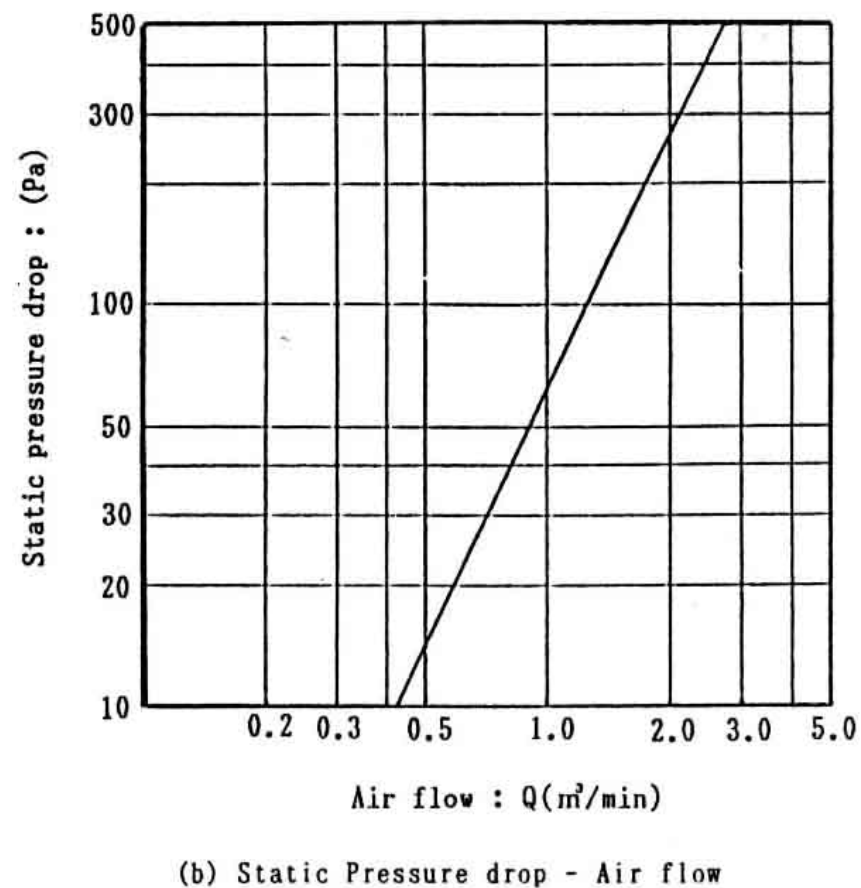


Fig. 4(B) Cooling Requirements of The 2M251

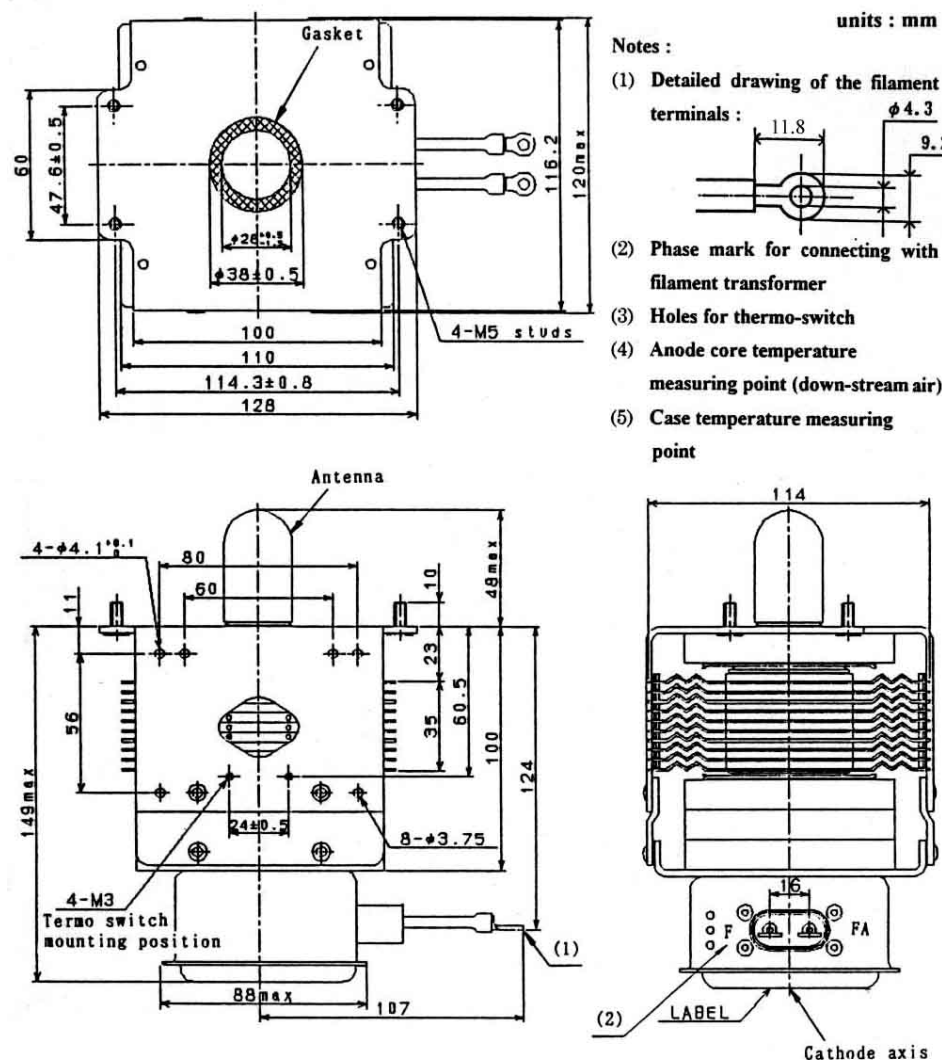


Fig. 5 Dimensional Outline of The 2M251

Output Structure of Magnetron

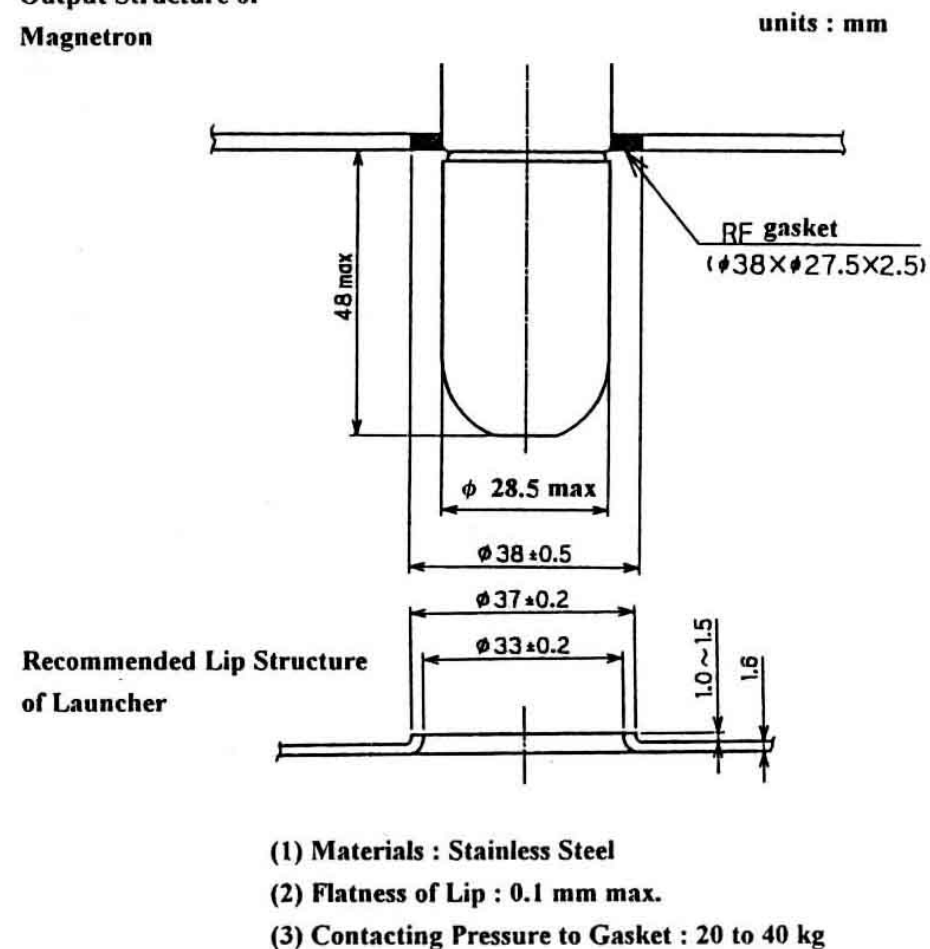


Fig. 6 Details of Output Coupling Portion and Recommended Launcher Design

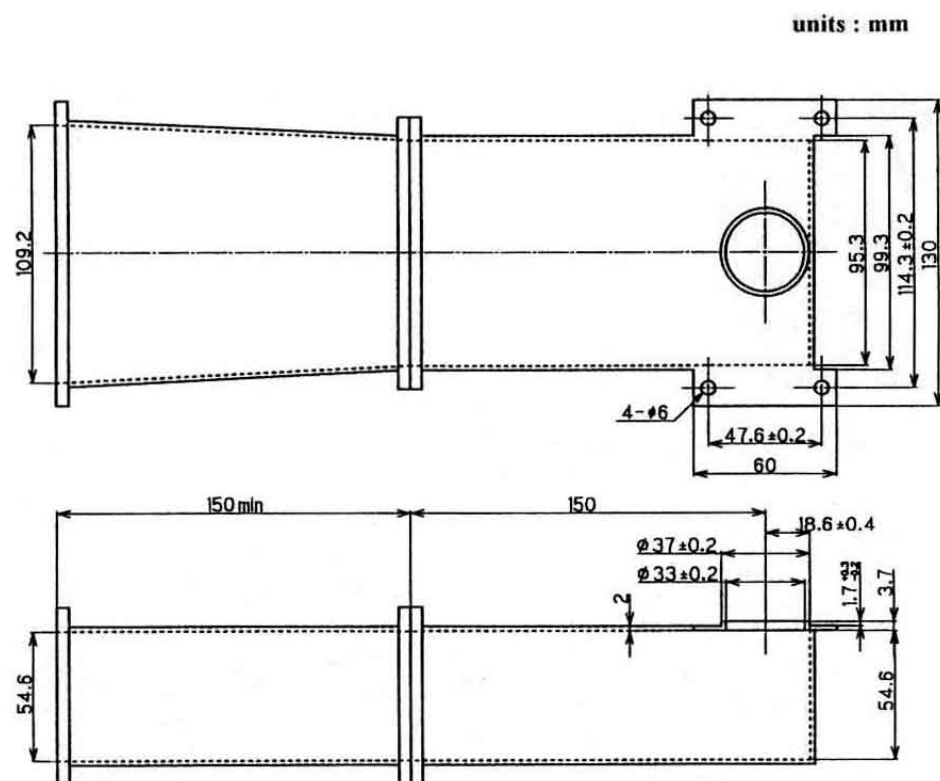


Fig. 7 Launcher and Tapered Waveguide for Testing