SES	C.W. MAGNETRON	ISSUED
	FOR MICROWAVE OVEN	2008 . 01 . 21 .

CUSTOMER SPECIFICATION
OM75P

<PROHIBITION TO USE OZONE DEPLETING SUBSTANCES>

Prohibited substances :

CFC/Halon/Carbon tetrachloride/1,1,1-Trichloroethane(Methyl chloroform)

① This Product, Assembly, or Component does not contain any of the substances above mentioned.

② This Product, Assembly, or Component is not manufactured using any of the substances above mentioned.

COMPILED BY :

APPROVED BY :

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1. GENERAL

The SAMSUNG OM75P series is a continuous wave cooking magnetron with fixed frequency of 2465MHz and high efficiency. This magnetron is intended for use in microwave ovens with typical oven power 900~1000 watts.

2. TYPICAL CHARACTERISTICS

2-1 ELECTRICAL

Power Supply	L.C stabilized half wave doubler
Frequency	2465 MHz
Peak Anode Voltage	4.45 KV
Mean Anode Current	330 mA
Output Power (V.S.W.R ≤ 1.1)	1050 W
Efficiency	71.0 %
Filament Voltage	3.15 V
Cold Filament Resistance	0.042 Ω
Pre-heating Time	0 sec

2-2 MECHANICAL

Mount Position (note 1)	Any
R.F Coupler	WR 430 system
Magnetic System	Ferrite magnet packaged
Weight	0.85 Kg (1.9 lbs)
Dimensions	see outline drawing
Cooling Air Flow	800 l/min
Pressure Drop	4.9 mm Aq
Cooling Direction	Transverse

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3. ABSOLUTE MAXIMUM RATINGS

	Min.	Max.
Filament Voltage	2.70 V	3.60 V
Mean Anode Current	-	380 mA
Peak Anode Current	-	1500 mA
Anode Temperature (note #2) (at the point indicated on the outline drawing)	-	300 ℃
Load V.S.W.R (note #3)	-	4
Storage Temperature	-35 ℃	+60 ℃
Filter Case Temperature	-	120 ℃
Antenna Temperature	-	360 ℃
Magnetron Output Power	1000 W	-
Starting Time	-	3 sec

NOTES

#1. See 11/13 page.

#2. In an abnormal operation, the maximum allowable temperature for anode is 340℃, provided that dwell time of the maximum temperature does not exceed 2 hours per operation nor 25 hours in total.

#3. The load condition in which instantaneous V.S.W.R is 4 through 10 may be allowed only if the dwell time in that is short.

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4. TEST SPECIFICATION

4-1. ELECTRICAL TEST

TERM	Test Cond.					Limits					
	Vf (V)	Va (kV)	Ia (mA)	VSWR	Notes	Min.	Mean	Max.	Unit	Notes
Cold Insulation Resistance	0	1kv dc	-	-	-	50MΩ	-	∞		
Breakdown Voltage	0	+ 10dc	-	-						#1
Cold start(Voltage transient)	3.15	-	330	≤1.1	#2			8	kV	#5
Frequency	3.15	-	330	≤1.1	#2	2455	2465	2475	MHz	
Peak Anode Voltage	3.15	-	330	≤1.1	#2	43	4.45	46	kV	
Efficiency	3.15	-	330	≤1.1	#2	710	-	-	%	
Mean Output Power(1)	3.15	4.45	330	≤1.1	#2	1000	1050	-	W	
Emission Stability(Vfm)			330	≤1.1	#2			22	V	#3
Stability	3.15				#4	4			VSWR	#6
Pulling Figure	3.15		330	13				10	MHz	#6
Filament Current	3.15	-	-	-		85	105	125	A	
Sink Phase (at L=4)	3.15	-	330	4		025	027	029	λsin/λg	

4-2. VISUAL & MECHANICAL

1) Major Defects :

Any physical error, omission or dimensional deviation that affects the component function, fit or reliability.

2) Minor Defects :

Any physical error, omission or dimensional deviation that is purely aesthetic and does not affect function, fit or reliability.

4-3. LABEL

Unless otherwise agreed with individual customers, a standard SAMSUNG label will be provided on the filter box of the tube.

4-4. DESIGN OR CONSTRUCTIONAL CHANGES :

SAMSUNG will notify the customer in writing of any major design or constructional changes which either change the performance of the magnetron or have an influence on the mechanical or appearance of the tubes.

Together with the notification sample, test data, and reason for modification will be sent to the customer for approval.

4-5. NOTES

#1. - If during the first snap-on there is evidence of a breakdown within 5 seconds of H.V. application, the test should be repeated once and there should be no indication of breakdown again.
(1 breakdown ≤ 400μA , Series resistance 50KΩ)

#2. - For power supply an L.C., single phase half wave doubler should be used.

- The filament voltage should be measured at tube terminals.
- The combination of transformer and capacitor should be chosen such that for normal line voltage, Ia mean = 330mA±1% and Ia peak 1020 to 1050mA.

- It is recommended to use a 10 - 12 KV avalanche diode as protection for capacitor and transformer.
- For wave guide configuration and power supply, see page 7 and 10.
- A water load of which the V.S.W.R.$\leq$ 1.1 over the frequency band 2425MHz up to 2475MHz should be used.
- Unless otherwise stated, limits apply for a tube within 15 seconds after application of voltage and at 25℃ .
- Before testing, the tube should be "at room temperature" for at least four hours.
- During test, the magnetron should be cooled with 800 l/min of forced air.

#3. -After a minimum operation of 30 seconds under the specified condition, the filament voltage is gradually decreased. The Vfm is the lowest Vf value at which the tube is still oscillating in the π mode.

#4. - Starting with minimum operation of 30 seconds at nominal heater voltage and Ia=330mA with V.S.W.R.$\leq$ 1.1 and at 2λg distance from the tube, the V.S.W.R. must be increased by means of the Rieke transformer while the phase must be varied in the sink area. The stability is the highest V.S.W.R. at which the tube is still oscillating in the correct π mode.

#5. - Transients are measured on a storage scope during the period 0.5 to 2 seconds after switching on the anode voltage and filament voltage simultaneously.

#6. - Design control tests only.

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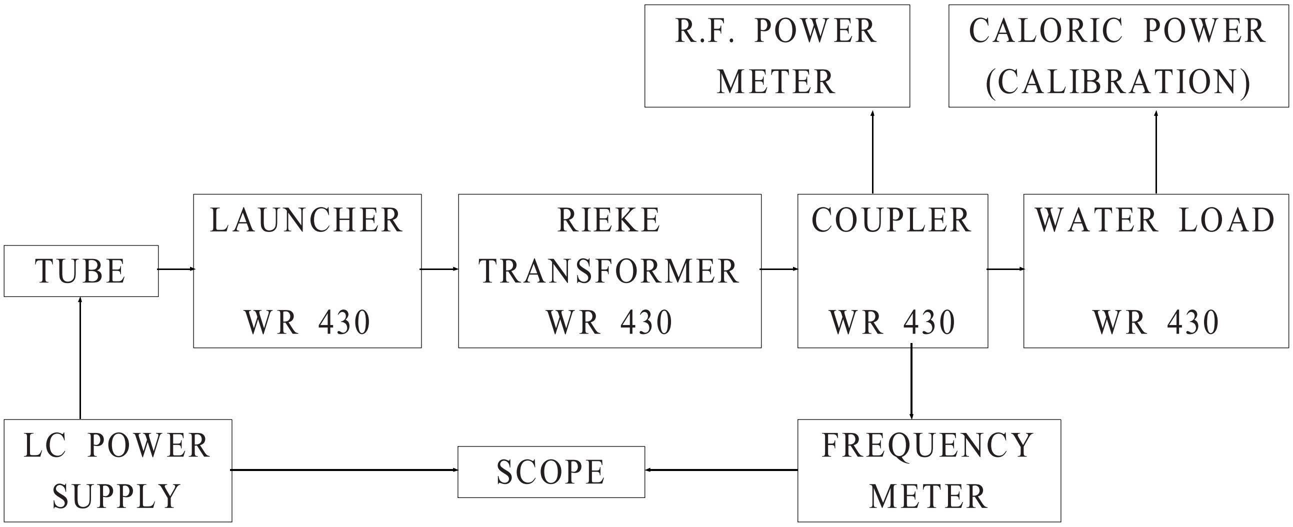
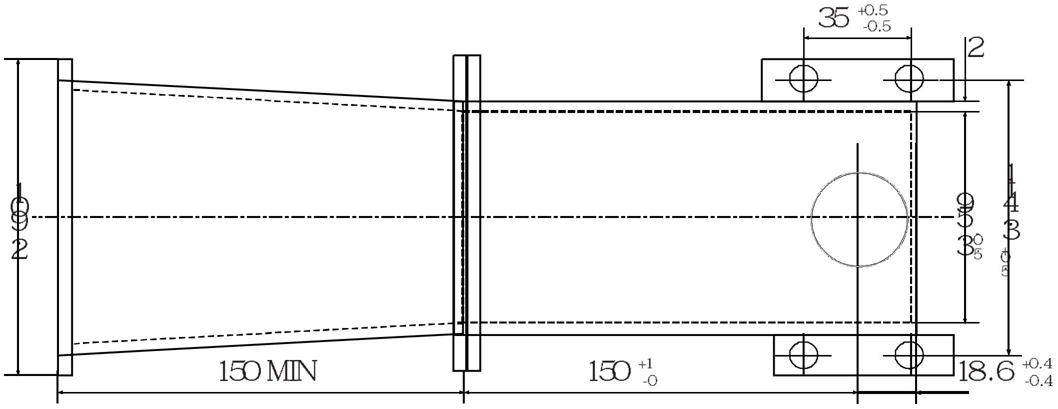
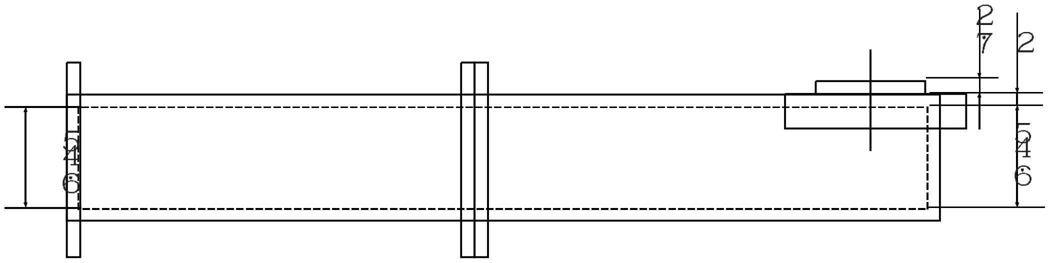
5. WAVEGUIDE CONFIGURATION



6. COUPLING SECTION for OM75P into a waveguide WR430



The flange mates Japanese standard BRJ-2



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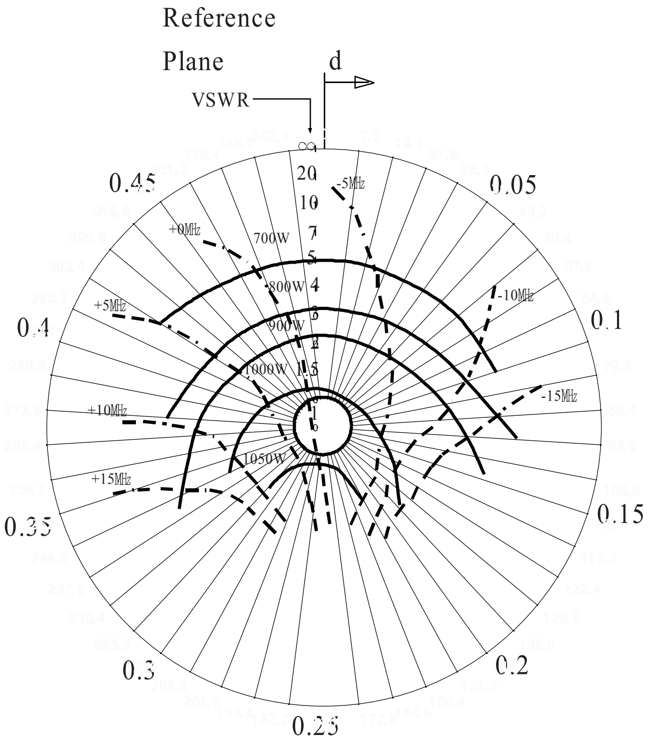
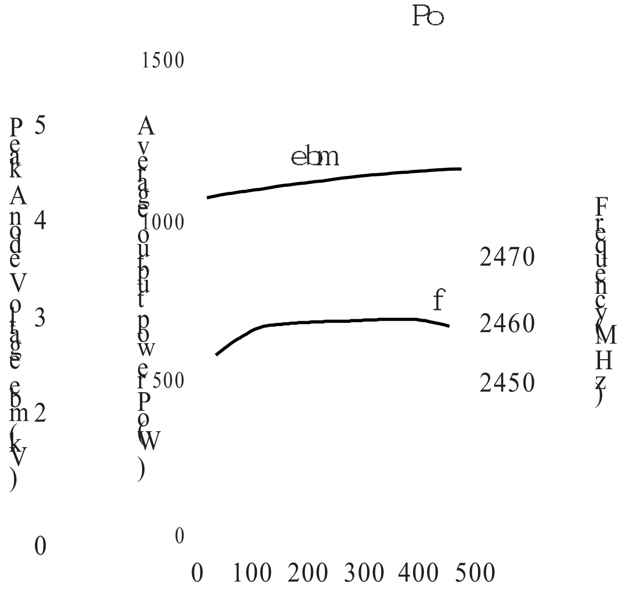
7. RIEKE DIAGRAM IN WAVEGUIDE WR430



Power Supply : half-wave doubler L.C. type
Filament Voltage .... 3.15 V
Average Anode Current................. 330 mA
Peak Anode Voltage .... 4.45 kV
Frequency at matched load 2465MHz
d : distance of V.S.W.R. -minimum from reference plane towards load
Diagram measured under cold condition

8. PERFORMANCE OF OM75P MAGNETRON



- Power Supply : single phase half-wave doubler
- Filament Voltage 3.15 V
- Load V.S.W.R. 1.1 maximum
- measured within 15sec. after applying voltage

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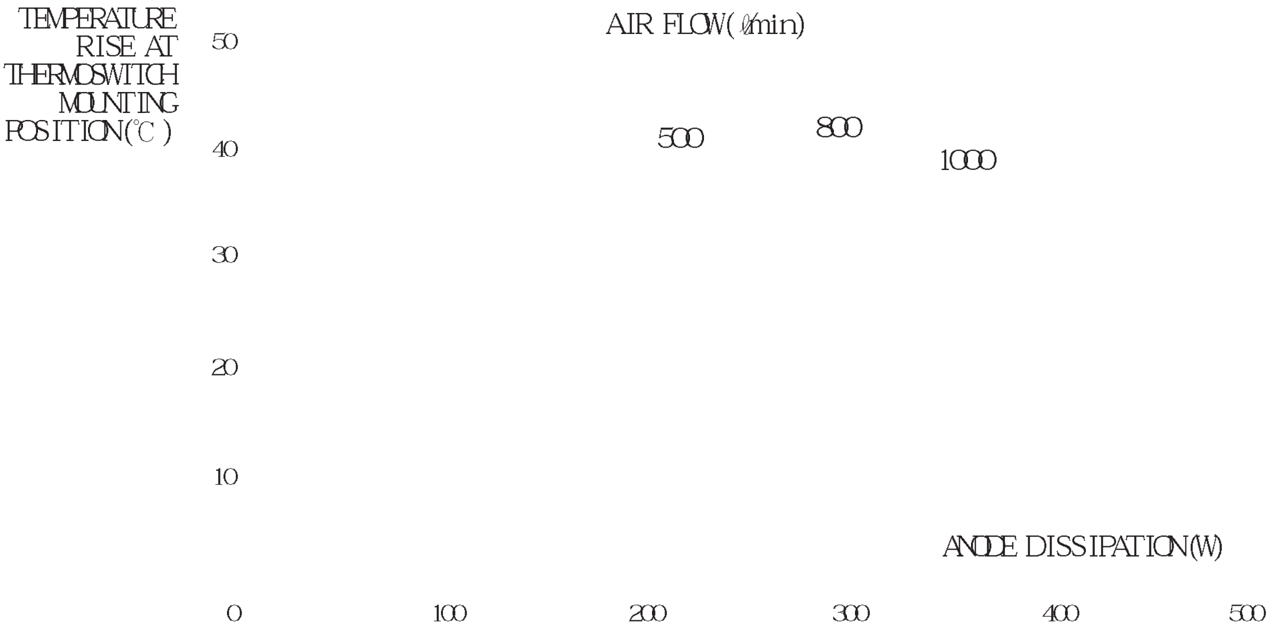
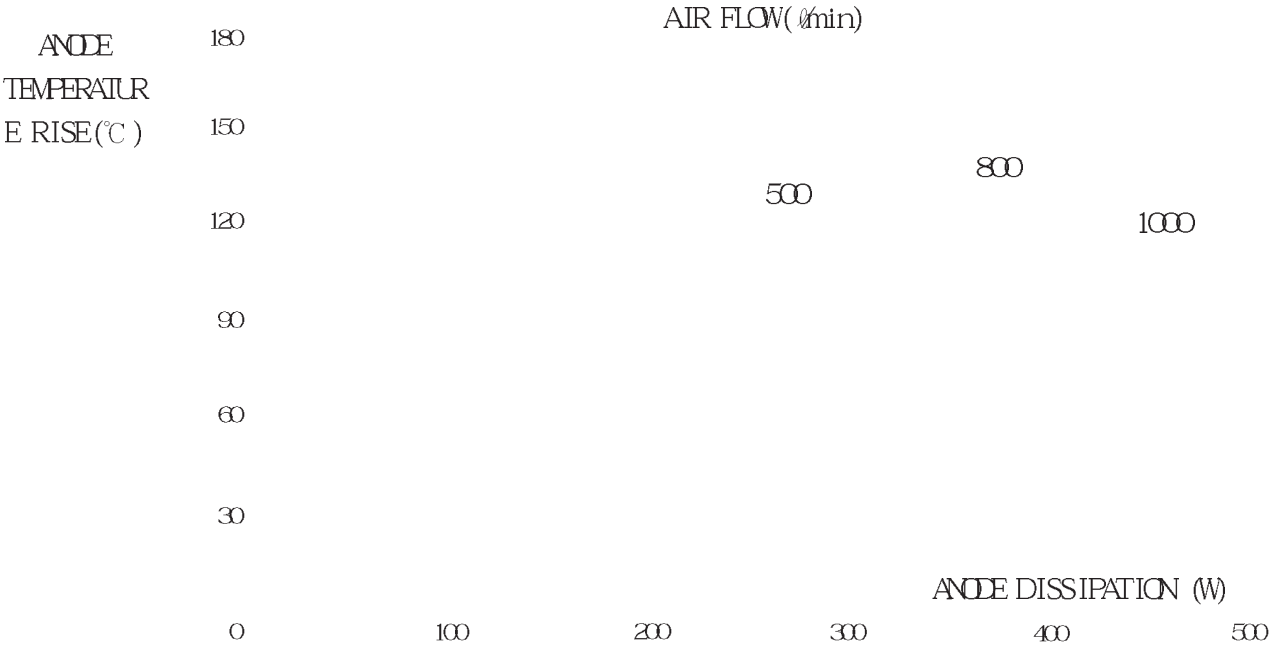
9. ANODE DISSIPATION vs. TEMPERATURE RISE of THERMOSWITCH MOUNTING POSITION



(Increase of anode temperature above inlet air temperature T as a function of anode dissipation W)

Anode dissipation = (peak anode voltage) x (average anode current) - (output power)

10. ANODE DISSIPATION vs. ANODE TEMPERATURE.



[Increase in temperature of thermoswitch mounting position above inlet air temperature T as a function of anode dissipation W]

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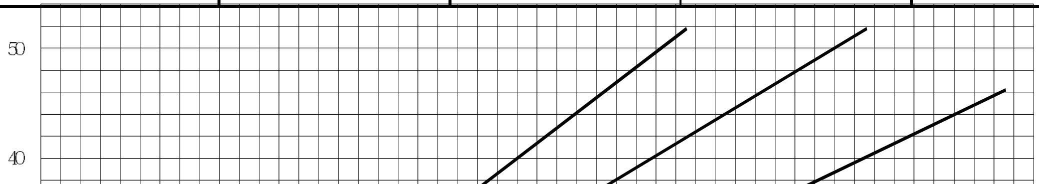
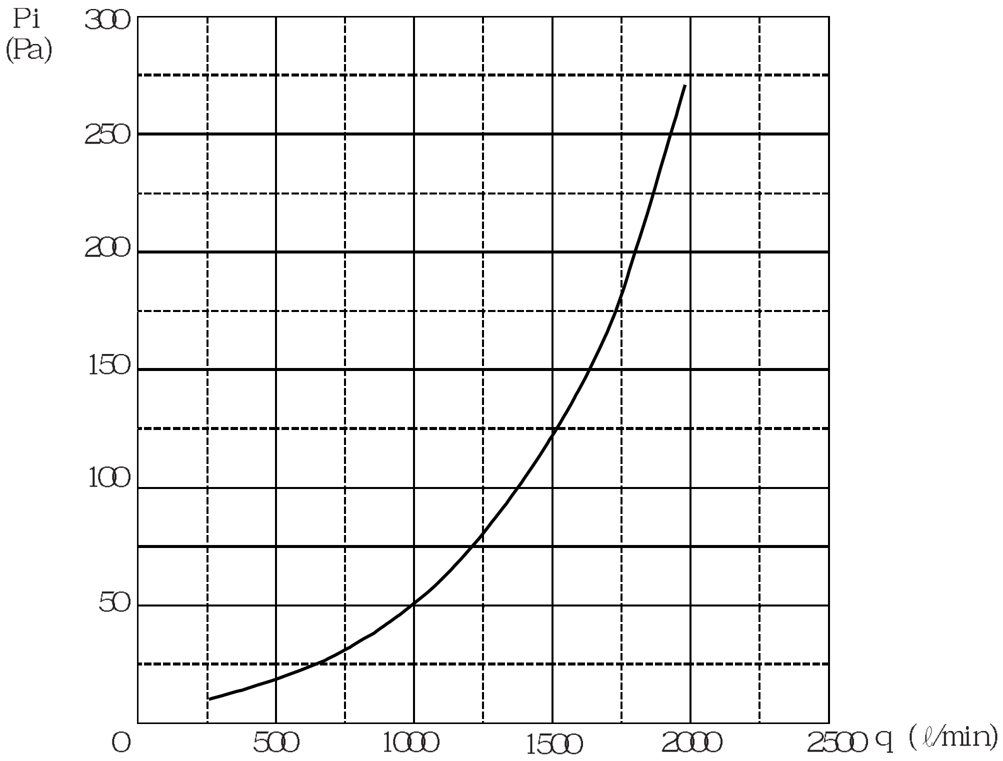


11. PRESSURE DROP vs. AIR FLOW



Pressure Drop Pi, across radiator as a function of air flow,q.

12. POWER SUPPLY CIRCUITS