Specification

Name	:	2465MHz 1.2 KW Water Cooling Magnetron
Model	:	OM75P-WJ Series
Brand	:	SAMSUNG

1. General

The SAMSUNG OM75P-WJ series is a continuous wave magnetron with fixed frequency of 2465MHz and high efficiency. This magnetron is intended for use in microwave ovens with typical oven power 1100~1200 watts.

2. Typical Characteristics

2-1 Electrical

Number	Item	description
1	Power supply	L.C Stabilized Half Wave Doubler
2	Frequency	2465MHz
3	Peak Anode Voltage	4.65KV
4	Mean Anode Current	370mA
5	Output Power(V.S.W.R≦ 1.1)	1200W
6	Efficiency	71.0%
7	Filament Voltage	3.15V
8	Cold Filament Resistance	0.042Ω
9	Pre-heating Time	0sec

2-2 Mechanical

Number	Item	description
1	Mount Position(Note #1)	Any
2	R.F Coupler	WR430 system
3	Magnetic System	Ferrite magnet packaged
4	Weight	1.10Kg
5	Cooling Water Flow	1.40L/min
6	Cooling Direction	Transverse

3. Absolute Maximum Ratings

Number	Item	Min.	Max.
1	Filament Voltage	2.70V	3.60V
2	Mean Anode Current	-	400mA
3	Peak Anode Current	-	1500mA
4	Anode Temperature(Note #2) (at the point indicated on the outline drawing)	-	300℃
5	Load V.S.W.R(Note #3)	-	4
6	Storage Temperature	-35℃	+60℃
7	Filter Case Temperature	-	120℃
8	Antenna Temperature	-	360℃
9	Magnetron Output Power	1200W	-
10	Starting Time	-	3sec

Notes:

#1 See Page 7-8.

#2 In an abnormal operation, the maximum allowable temperature for anode is 340℃, 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.

4. Test Specification

4-1 Electrical Test

Term	Test Conditions					Limits				
	Vf(V)	Va(KV)	Ia(mA)	VSWR	Notes	Min.	Mean	Max.	Unit	Notes
Cold Insulation Resistance	0	1KVdc	-	-	-	50MΩ	-	∞		
Breakdown Voltage	0	+10dc	-	-						#1
Cold start(Voltage transient)	3.15	-	370	≤1.1	#2			8	KV	#5
Frequency	3.15	-	370	≤1.1	#2	2455	2465	2475	MHz	
Peak Anode Voltage	3.15	-	370	≤1.1	#2	4.55	4.65	4.75	KV	
Efficiency	3.15	-	370	≤1.1	#2	71.0	-	-	%	
Mean Output Power(1)	3.15	4.65	370	≤1.1	#2	1150	1200	1250	W	
Emission Stability(Vfm)			370	≤1.1	#2			2.2	V	#3
Stability	3.15				#4	4			VSWR	#6
Pulling Figure	3.15		370	1.3				10	MHz	#6
Filament Current	3.15	-	-	-		8.5	10.5	12.5	A	
Sink Phase(at L=4)	3.15	-	370	4		0.25	0.27	0.29	λ sin/λ g	

4-2 Visual & Mechanical

1)Major Defects: Any physical error, omission or dimensional deviation that affects the component function, affect 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 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.

4-4 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≤400 μ A, 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 =370mA±1% and Ia peak 1020 to 1050mA.
- It is recommended to use a 10-12KV avalanche diode as protection for capacitor and transformer.
- For wave guide configuration and power supply, see page 5 and 6.
- A water load of which the V.S.W.R≤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 1.40L/min in of forced water.

#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.

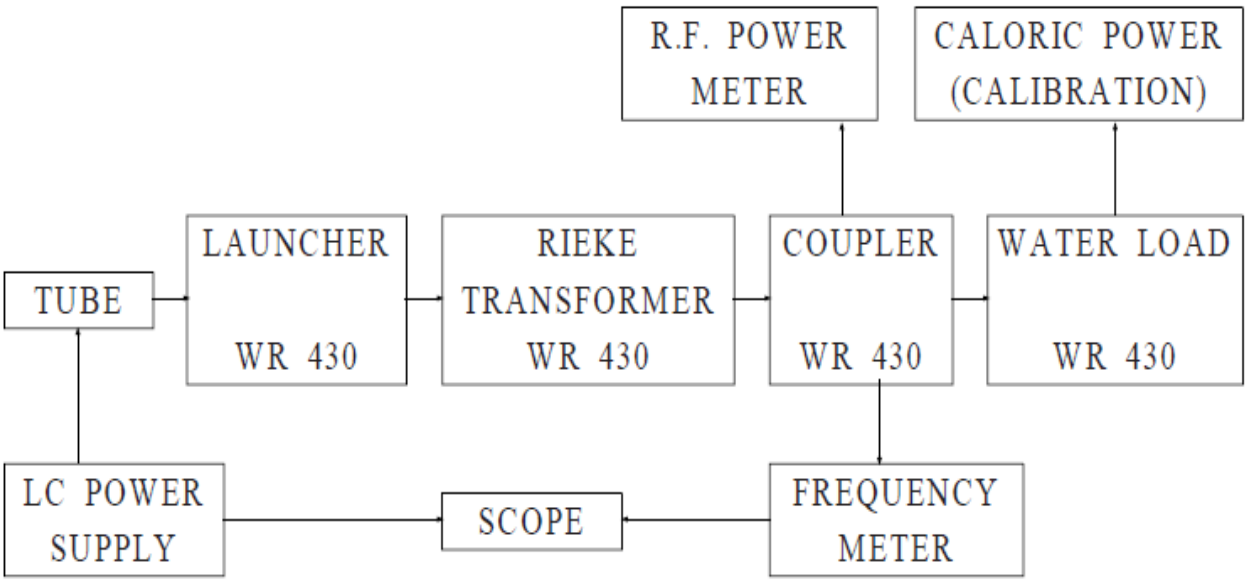
#4 Starting with minimum operation of 30 seconds at nominal heater voltage and Ia=370mA with V.S.W.R≤1.1 and at 2 λ g distance from the tube, the V.S.W.R. must be increased by means of the Rieke transformer while the phase must be varied in the sink area.

The stability is the highest V.S.W.R. at which the tube is still oscillating in the correct π mode.

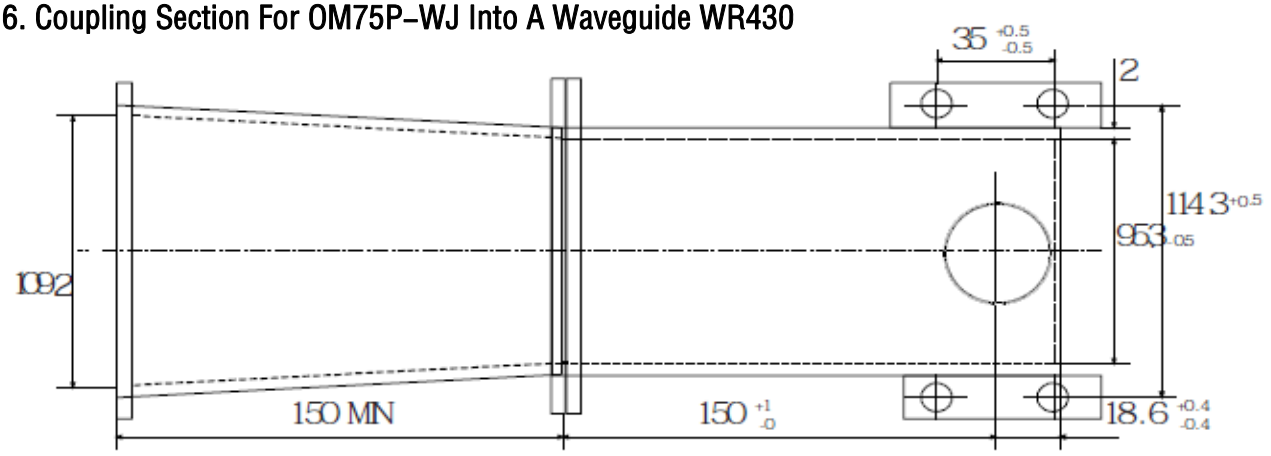
#5 Transients are measured on a storage scope during the period 0.5 to 2 seconds after switching on the anode voltage and filament voltage simultaneously.

#6 Design control tests only.

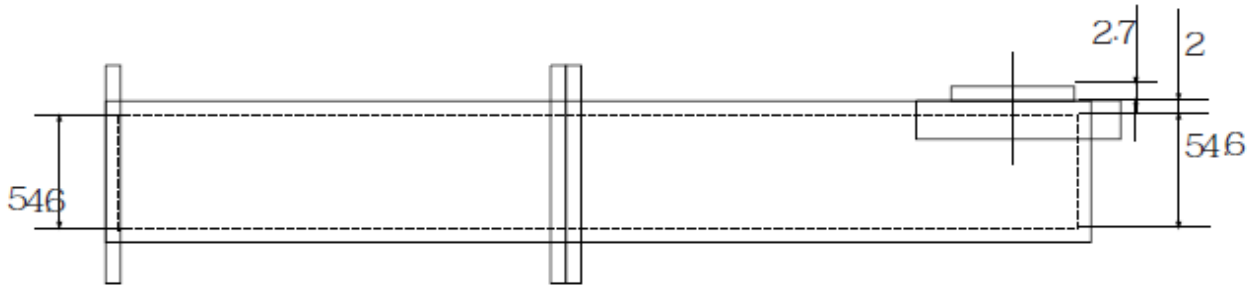
5. Waveguide Configuration



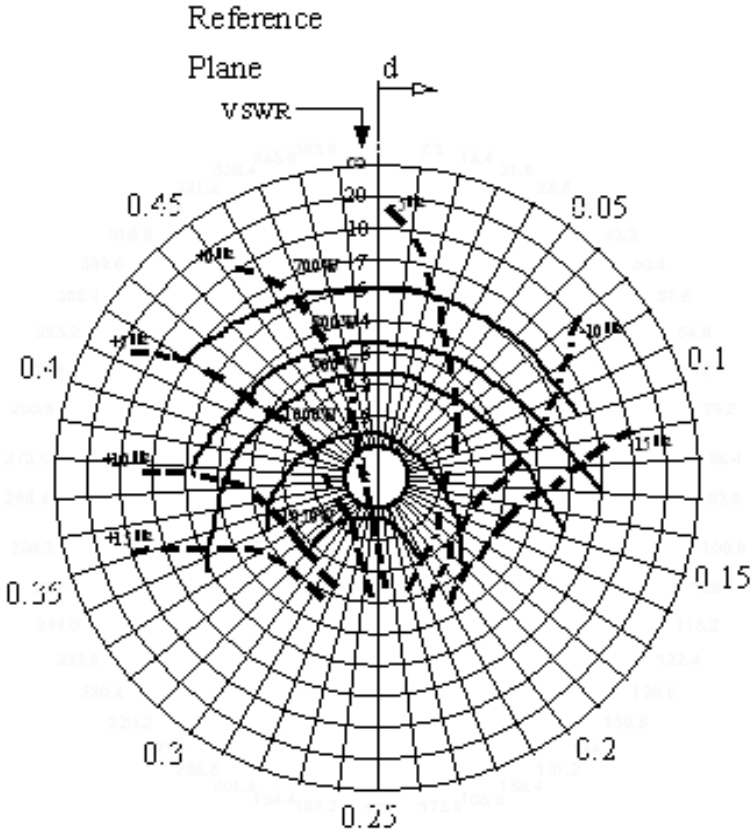
6. Coupling Section For OM75P-WJ Into A Waveguide WR430



The flange mates Japanese standard BRJ-2

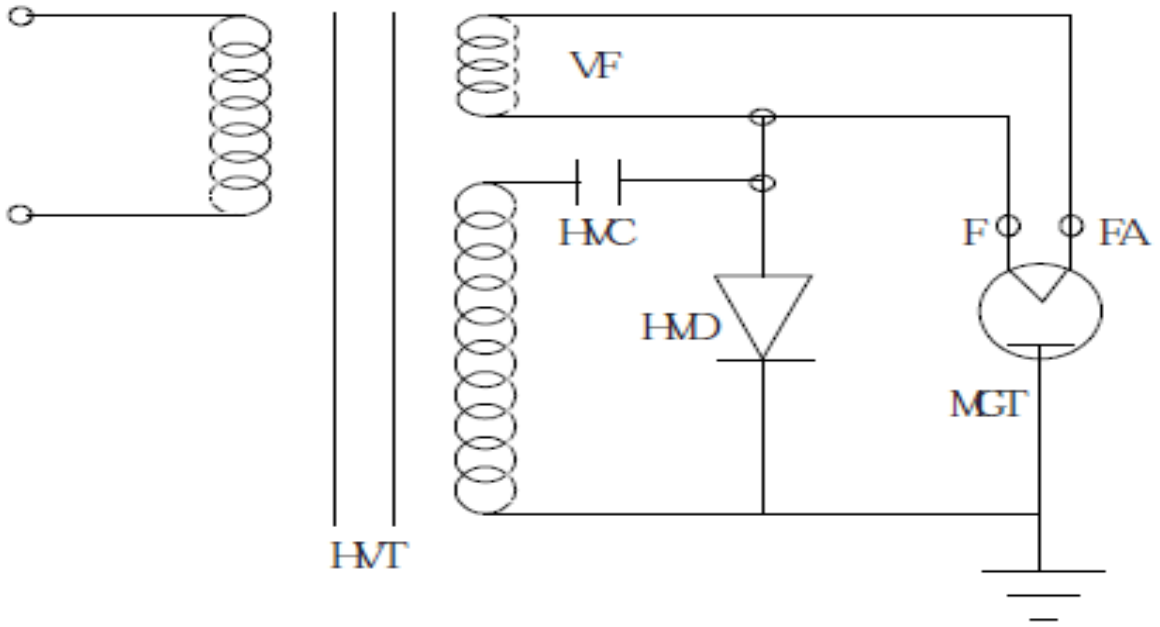


7. Rieke Diagram In Waveguide WR430



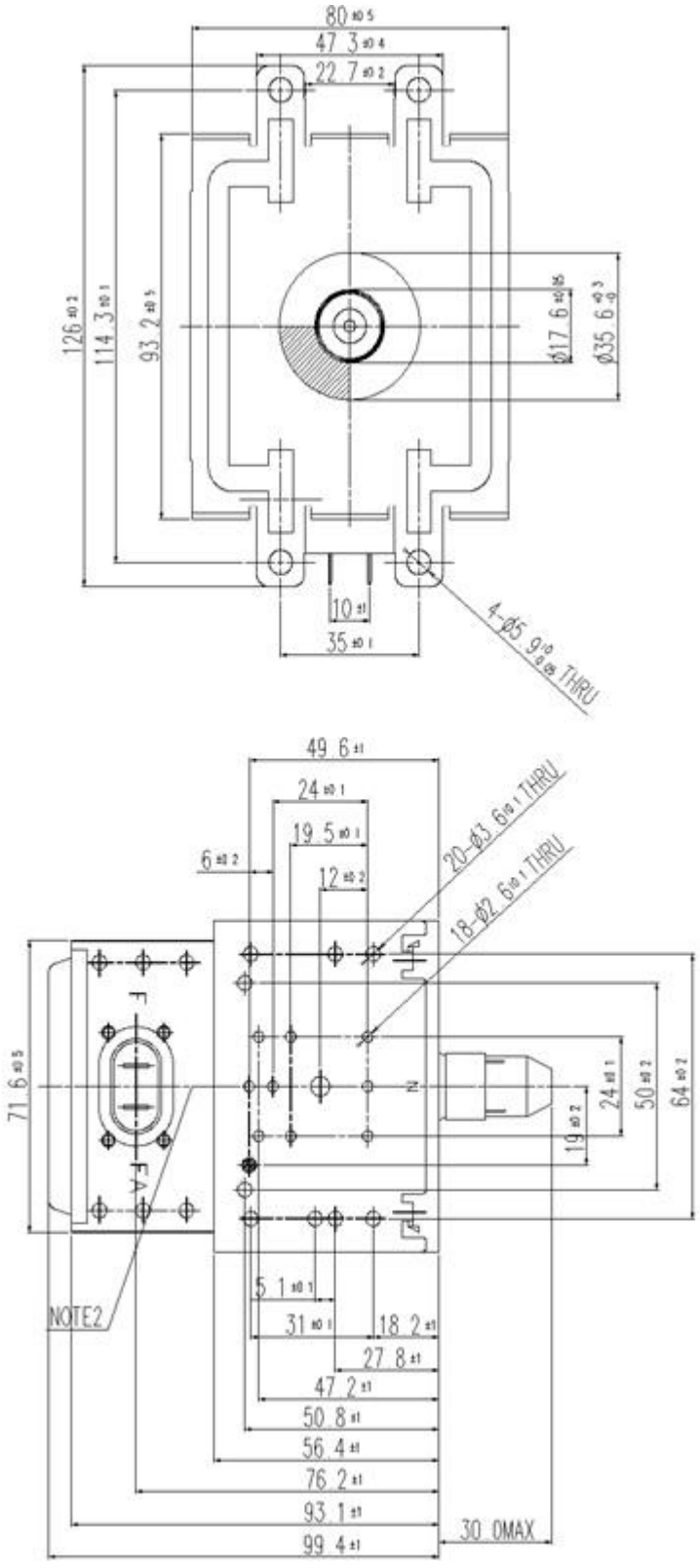
Power Supply: half-wave doubler L.C type
Filament Voltage: 3.15 V
Average Anode Current: 370mA
Peak Anode Voltage: 4.65KV
Frequency at matched load: 2465MHz
d: distance of V.S.W.R.-minimum from reference place towards load
Diagram measured under cold condition

8. Power Supply Circuits

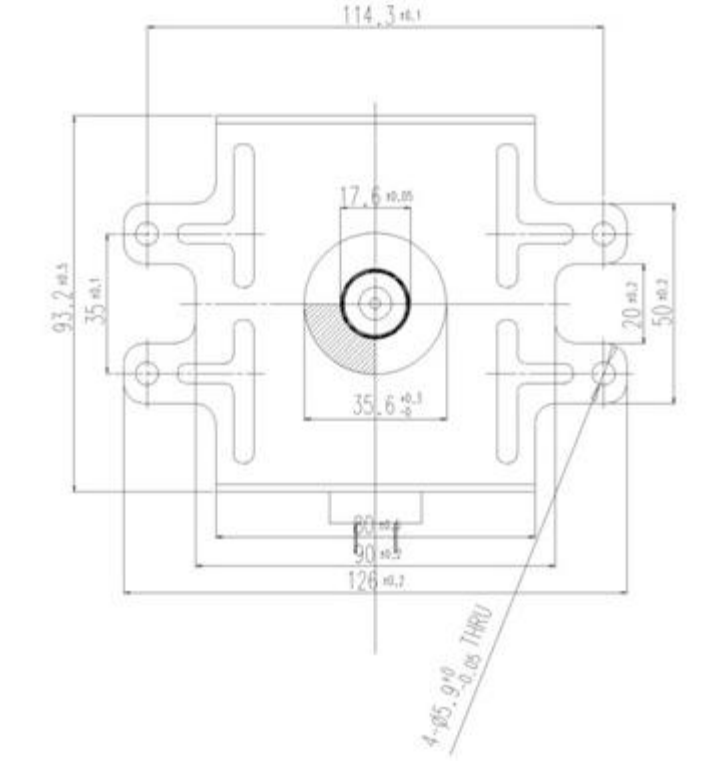


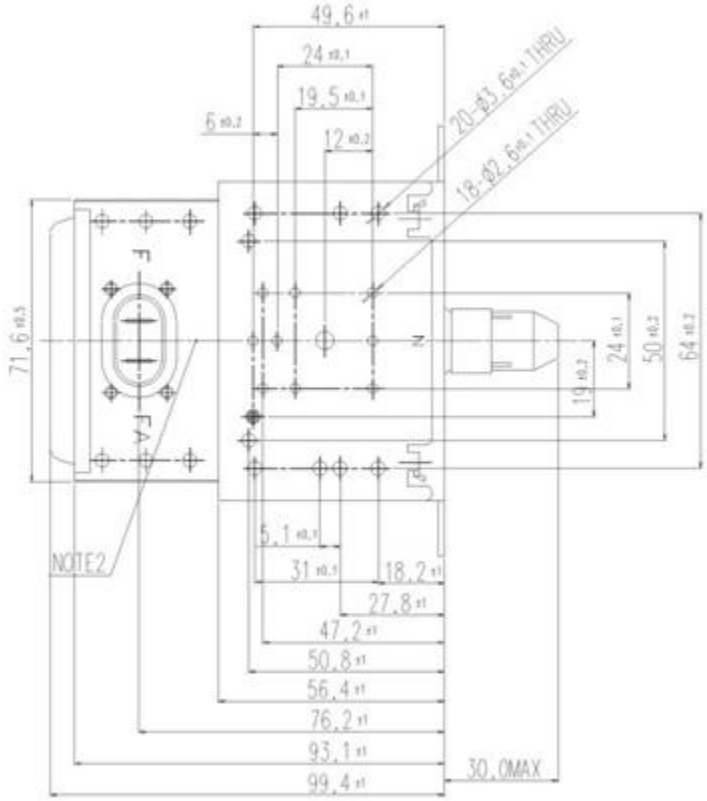
9. Outline Drawing Of OM75P-WJ Series

OM75P(31)-WJ



OM75P(11)-WJ


114.3 ±0.1
17.6 ±0.05
93.2 ±0.5
35 ±0.1
20 ±0.2
50 ±0.2
35.6 +0.1 -0
90 ±0.5
126 ±0.2
4-Ø5.9 +0 -0.05 THRU


49.6 ±1
24 ±0.1
19.5 ±0.1
6 ±0.2
12 ±0.2
20-Ø3.6 ±0.1 THRU
18-Ø2.6 ±0.1 THRU
71.6 ±0.5
24 ±0.1
50 ±0.2
64 ±0.2
19 ±0.2
NOTE2
5.1 ±0.1
31 ±0.1
18.2 ±1
27.8 ±1
47.2 ±1
50.8 ±1
56.4 ±1
76.2 ±1
93.1 ±1
99.4 ±1
30.0MAX

10. Pictures Of OM75P-WJ Series