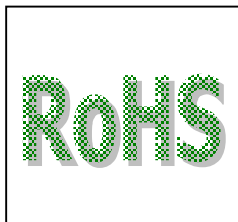




Approval Sheet

Type : Ceramic Patch Antenna
 Part No : B18-4830933-STD70
 Model No :
 Drawing No :

	Drawing	Checked		Approved
Date	/	/	/	/



AMOTECH CO., LTD 5B-1L, 617, NAMCHON-DONG, NAMDONG-GU, INCHOEN-CITY, KOREA TEL : 82-32-821-0363 FAX : 82-32-811-0283	Designed	Checked		Approved
	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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1. Revision History

Revision no	Content	Date
0	First, Documented	2007.03.30



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2. Specification

2.1 Electrical characteristic

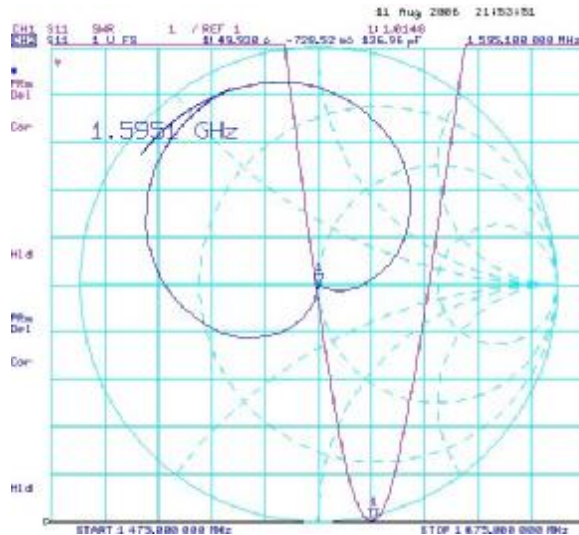
No	Item	Specification	Unit	Remarks
1	Center Frequency(fc)	-	MHz	Note : 1)
		1593.0 ± 3	MHz	Note : 2)
2	VSWR @ fc	Max. 1.5	-	Note : 2)
3	Axial Ratio @ fc	Max. 3.0	dB	Note : 2)
4	Gain @ fc	4.0 dBic typical @ zenith	dBic	Note : 2)
5	Polarization	RHCP	-	-
6	Impedance	50	Ω	-

- fc is mid point of loop/cusp in smith chart.

※ Note: 1) Measured in customer set.

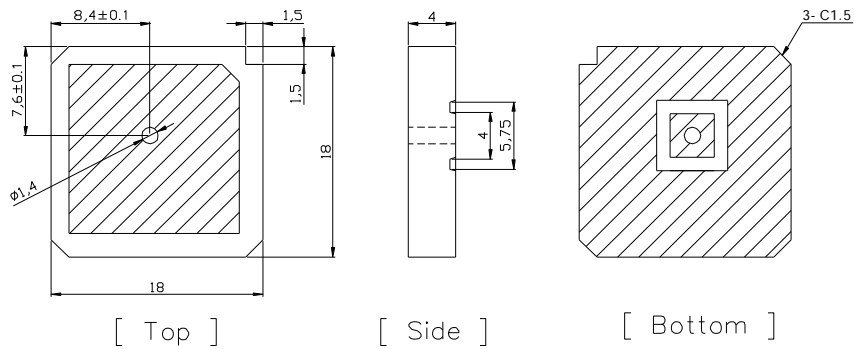
Note: 2) Measured on 70X70 FR4 ground plane(AMOTECH REF jig) with SMA connector.

2.1.1 Typical S11 (Smith Chart and VSWR)



2.2 Mechanical Characteristic

2.2.1 Dimension



NOTE
 1. UNIT : mm
 2. TOLERANCE : ±0.2

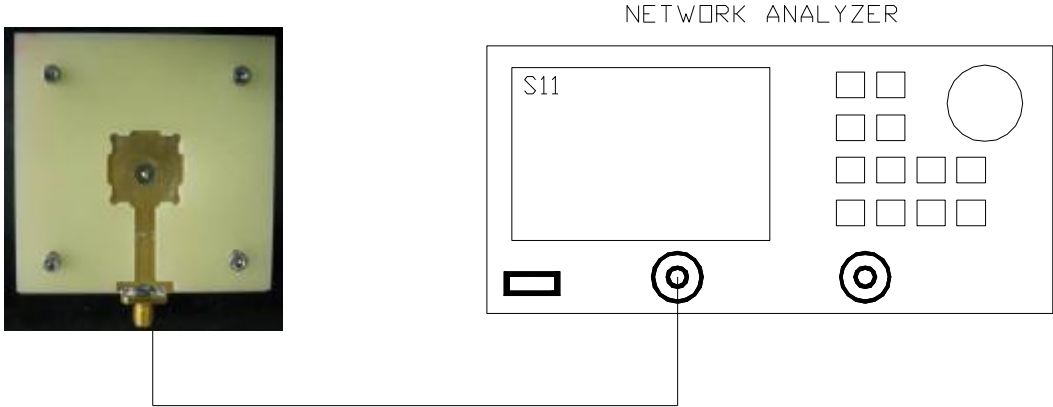
Marking : 1593

No	Item	Specification	Unit	Remarks
1	Dielectric Constant	45.0 ± 0.5	-	-
2	Temperature Coefficient	0 ± 10	ppm/°C max.	-
3	Electrodes	Silver	-	-
4	Probe	Without Probe Pin	-	-
5	Tape	Without tape	-	-

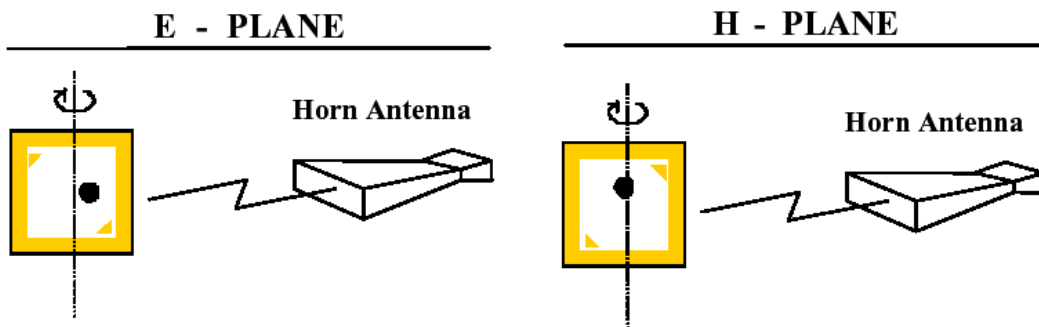


3. Test Method

3.1 S11 Measurement



3.2 Direction of Measurement





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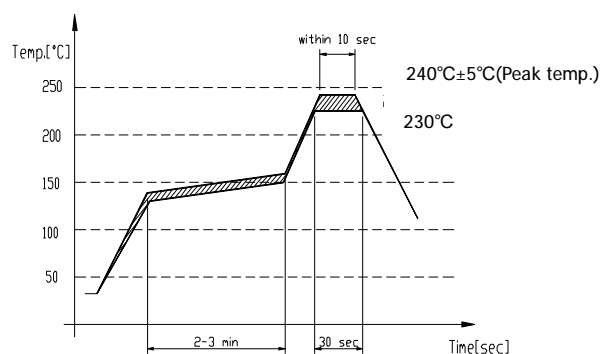
4. Reliability Conditions

No	Item	Test condition	Requirement
1	Drop Test	1. Mount antenna on PCB 2. 1.5m height 3. Drop 5 times	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
2	Vibration Test	1. 5-55-5 Hz, 1 Octave/min, Amp.=1.5mm, acceleration=2g, Crossover Freq.=18 Hz	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
3	Humidity	1. 60°C, 95%RH, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
4	Thermal Shock	1. +80°C(30min)→ 1~2min → -40°C (30min) 2. 10 cycle	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
5	High Temperature Resistance	1. +90°C, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
6	Low Temperature Resistance	1. -40°C, 96Hr	1. No Visible defect 2. S11 satisfy($\Delta f_c < 1.0 \%$)
7	Adhesion Strength of Soldering	1. Used of pull push gauge.	1. Spec(min. 5kgf)
8	IEC Climatic Category(IEC68-1)	-40°C / +90°C / 56h	-
9	Operating Temperature	-40°C / +90°C	-

5. Soldering Condition

-Wettability to IEC 68-2-58 $\geq 75\%$ (After Aging)

-Solder Paste : Ag/Sn/Cu:96.5/3.0/0.5



6. Caution and Warranty

1. Electrode metallizations are unprotected silver and will tarnish during storage due to sulphuric compounds (namely H₂S) in the atmosphere. Elevated temperature and humidity will accelerate this process. Human skin contact, wool etc. also cause tarnishing. This has no effect whatsoever on the



electrical performance of the patches. Tarnishing of the silver plated feed pins may affect solderability. Because of this normal and to be expected process, AMOTECH accepts no warranty claims for tarnished products.

AMOTECH uses vacuum packaging to reduce atmospheric influence and to extend shelf life.

2. Ceramic Patch Antennas must avoid shock and drop, to prevent cracking of the antenna.
3. Ceramic Patch Antennas should be used within 6 months, antennas older than 6 months should be checked for solderability before using

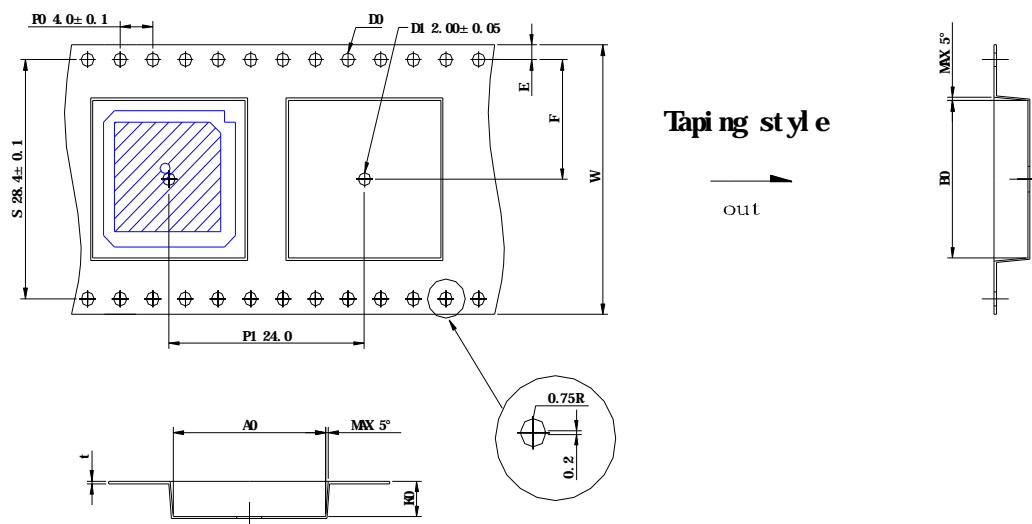
7. Package

7.1 Carrier Tape and Taping Style

7.1.1. Quantity

- 300ea/reel

* Reel : D Ø330 mm



A0	18.70± 0.10	E	1.75± 0.10
B0	18.70± 0.10	F	14.20± 0.10
D0	1.55± 0.05	t	0.30± 0.05
H0	4.20± 0.10	w	32.00± 0.30

7.2 Box Package

7.2.1 Inner Box

- Dimension : 350 (W) x 345 (D) x 85 (T) (mm)
- Quantity : 2 Reel (300ea/ reel x2 Reel = 600 ea)

7.2.2 Outer Box

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- Dimension : 405 (W) x 360 (D) x 275 (T) (mm)
- Quantity : 3 inner box (600ea/ inner box x3 inner box = 1,800 ea)