

有关本公司产品的注意事项

请务必在使用本公司产品目录之前阅读。

注意事项

■ 本产品目录中记载的内容是至2013年10月的内容。本产品目录记载的内容由于产品的改良等原因发生变更时，恕不另行通知。在您订购我司产品之前请确认最新的产品信息。

当您计划在本产品目录记载内容，或是《交货规格书》的规定范围以外使用我司产品时，由于使用我司产品引起的该应用设备的瑕疵我司将不承担任何责任。

■ 有关详细的产品规格我们准备有《交货规格书》，请向我司咨询相关事宜。

■ 在您使用我司产品时，请务必进行应用设备实装状态以及应用产品实际使用环境下的测评。

■ 本产品目录中记载的电子元器件，电路产品等产品适用于一般电子设备。

『AV设备，OA设备，家电及办公设备，信息/通讯设备（手机，电脑等）』

当您计划把本产品目录中记载的产品使用于可能会危及第三方生命安全的应用设备时，请务必提前与我公司取得联系，针对产品信息加以确认。

【运输用设备（火车控制设备，船舶控制设备等），交通用信号设备，防灾设备，医疗用设备，公共性高的信息通信设备等（电话程控交换机，电话，无线电，电视信号等基地局）】

另外，请不要在要求高度安全性，可靠性的应用设备上使用本产品目录中记载的产品。【航天设备，航空设备，核控制设备，用于海底的设备，军事设备等】

同时，应用于安全性，可靠性要求较高的一般电子设备/电路时，请充分进行安全性测评，必要时请在设计过程中追加保护电路。

■ 本产品目录中所记载的内容适用于通过我司营业所，销售子公司，销售代理店（即正规销售渠道）购买的我司产品。通过其他渠道购买的我司产品不在适用范围之内。

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■ 有关出口的注意事项

本产品目录中记载的产品中，部分产品在出口时会被归为“外汇及外贸管理法，美国出口管理法规”的管制货物，请及时实施相关手续，依据相关法律法规进行出口。需确认时，可向我司咨询。

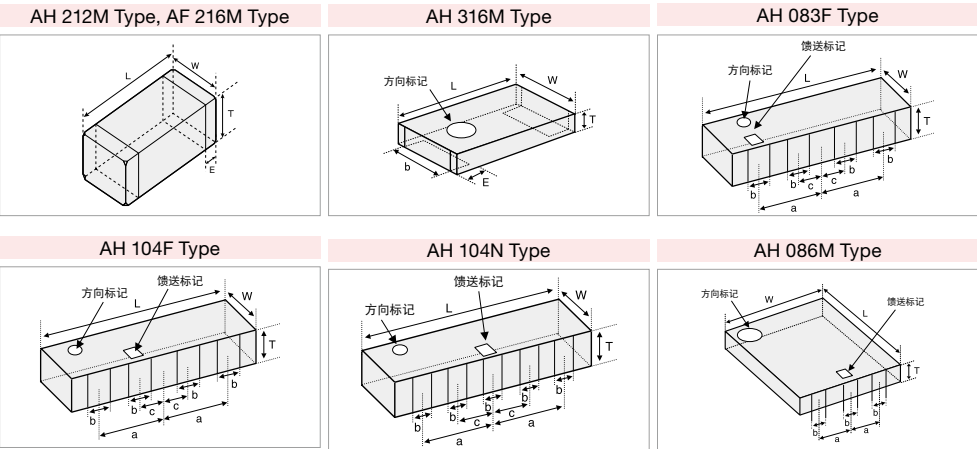


回流焊

型号标示法

A	F	△	2	1	6	M	2	4	5	0	0	1	—	T
1	2	3	4	5	6	7								
1 类型		2 端接类型		3 外型尺寸 [mm]		4 类别代码		5 频率 [MHz]		6 个别规格		7 包装		
AH	多层天线	△	电镀	212	2.0×1.25	F	倒 F 型	例		01~		—T		卷盘带装
AF	螺旋天线		△=空格	216	2.5×1.6	M	单极	1575	1574.397~1576.443	S1~	适用于AH 104F			
				316	3.2×1.6	N	单极 (双频段)	2450	2400~2500					
				083	8.0×3.0			5550	3100~8000					
				104	10.0×4.0									
				086	8.0×6.0									
1. 标示中心频率。 2. 双频段为较低的频率。														

外形尺寸 / 标准数量



Type	L	W	T	E	a	b	c	标准数量 (pcs) 压纹带
AF 216M	2.5±0.2	1.6±0.2	1.6±0.2	0.5±0.3	—	—	—	2000
AH212M	2 ^{+0.3} _{-0.2}	1.25±0.2	0.85±0.2	0.5±0.3	—	—	—	4000
AH 316M	3.2±0.15	1.6±0.15	0.5±0.1	0.5±0.2	—	1.0 min.	—	3000
AH 083F	8±0.3	3±0.3	1±0.3	—	3.1±0.3	1±0.3	1.15±0.3	1000
AH 104F	10±0.3	4±0.3	1±0.3	—	2.5±0.3	1±0.3	1±0.3	2000
AH 104N	10±0.3	4±0.3	1±0.3	—	3±0.3	0.8±0.3	1.5±0.3	
AH 086M	8±0.3	6±0.3	1±0.3	—	1.8±0.2	1±0.3	—	1000

单位: mm

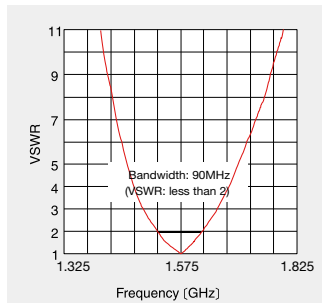
型号一览

用途	型号	外形尺寸 (mm) L × W × T	中心频率 (MHz)
GPS	AH 316M157501	3.2×1.6×0.5	1575
	AF 216M245001	2.5×1.6×1.6	2450
W-LAN (2.4GHz) Bluetooth® WiMAX (2.5GHz) ZigBee	AH 212M245001	2.0×1.25×0.85	2450
	AH 316M245001	3.2×1.6×0.5	2450
	AH 083F245001	8.0×3.0×1.0	2450
	AH 104F2450S1	10.0×4.0×1.0	2450
	AH 104F2650S1	10.0×4.0×1.0	2650
W-LAN (2.4GHz / 5GHz)	AH 104N2450D1	10.0×4.0×1.0	2450/5400
UWB & WiMAX (3.5GHz)	AH 086M555003	8.0×6.0×1.0	5550

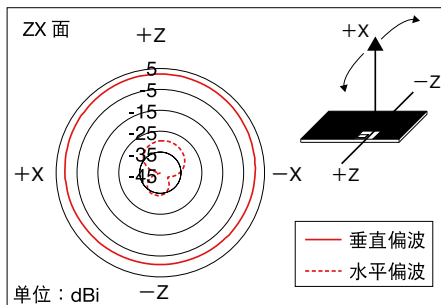
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有关各商品的详细信息(特性图、可靠性信息、使用时的注意事项等), 请参阅本公司网站(<http://www.ty-top.com/>)。

本公司标准线路板的典型特性例

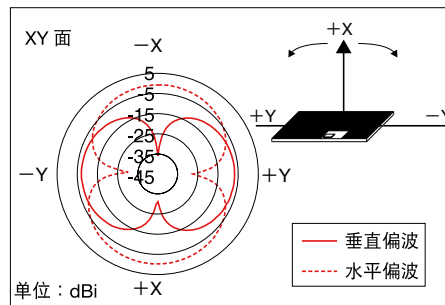
● AH 316M157501



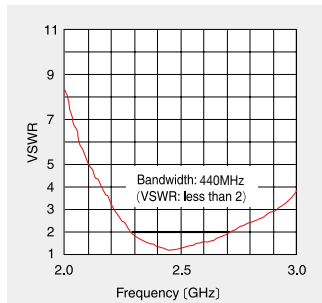
VSWR特性代表例



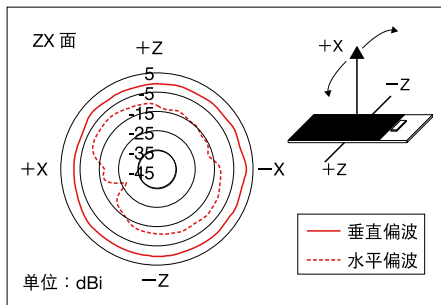
辐射特性代表例 (@1.575GHz)



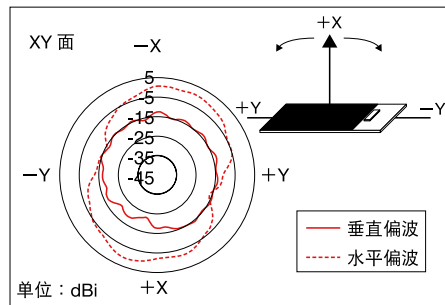
● AF 216M245001



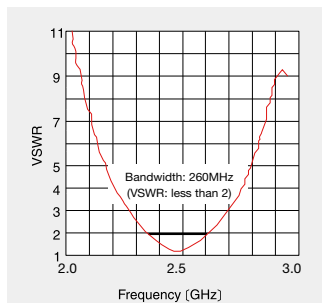
VSWR特性代表例



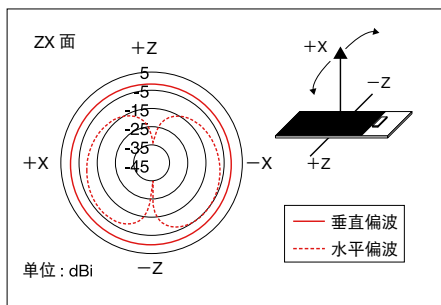
辐射特性代表例 (@2.45GHz)



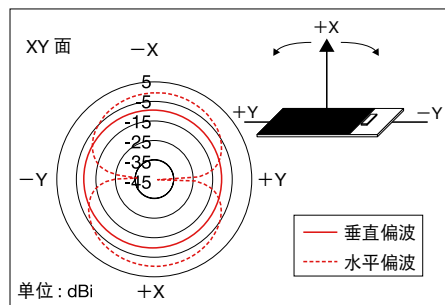
● AH 212M245001



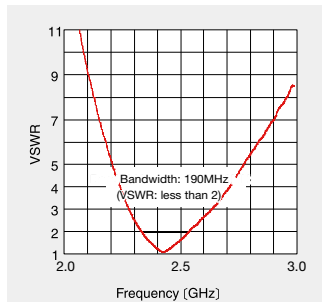
VSWR特性代表例



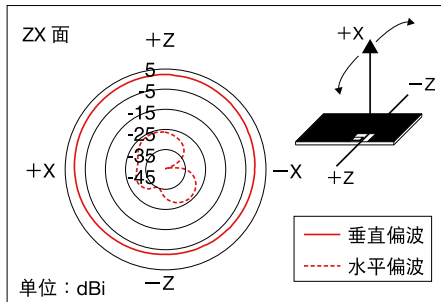
辐射特性代表例 (@2.45GHz)



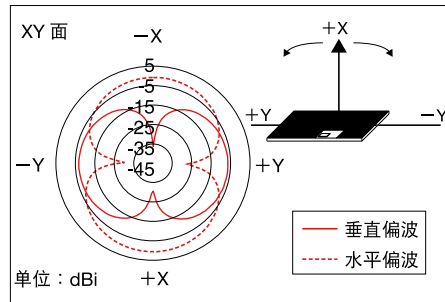
● AH 316M245001



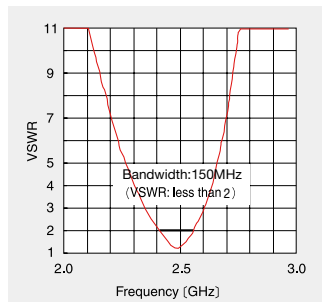
VSWR特性代表例



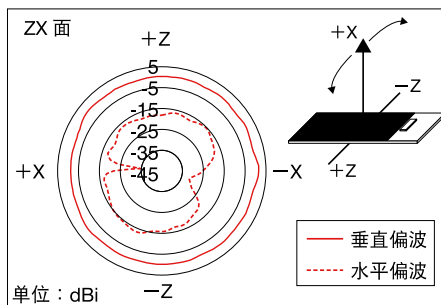
辐射特性代表例 (@2.45GHz)



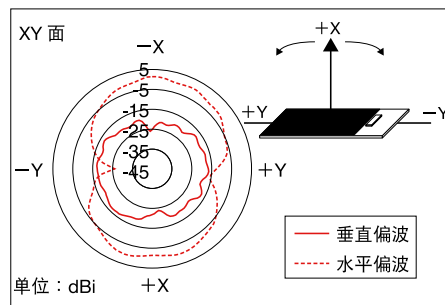
● AH 083F245001



VSWR特性代表例



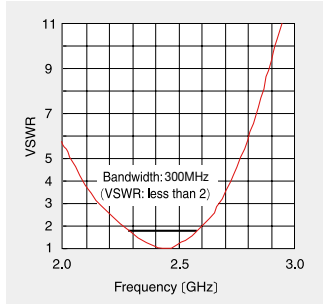
辐射特性代表例 (@2.45GHz)



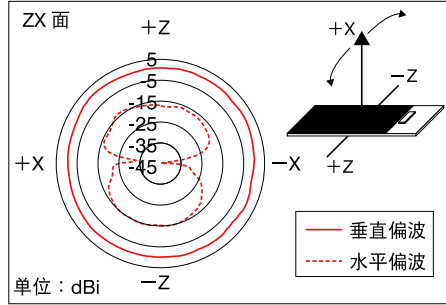
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本公司标准线路板的典型特性例

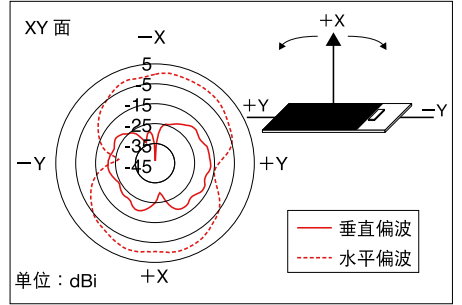
● AH 104F2450S1



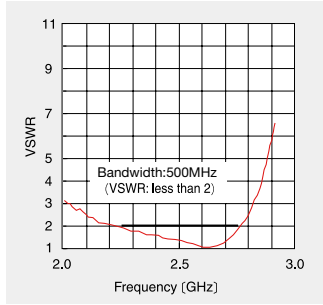
VSWR特性代表例



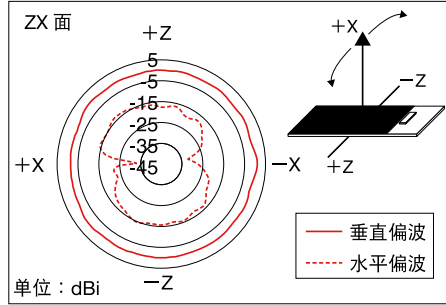
辐射特性代表例 (@2.45GHz)



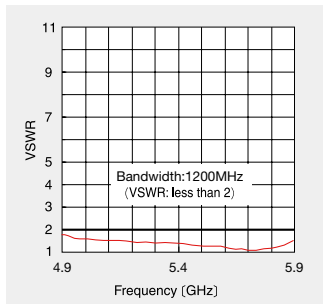
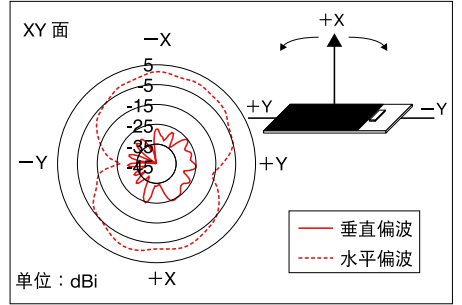
● AH 104N2450D1



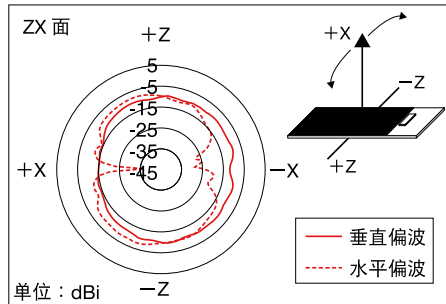
VSWR特性代表例 (2GHz频带)



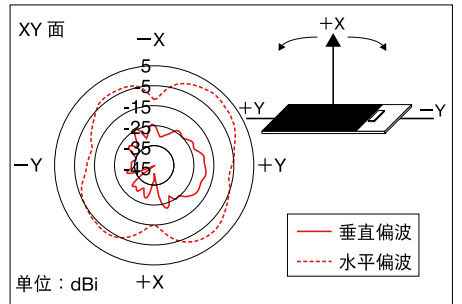
辐射特性代表例 (@2.45GHz)



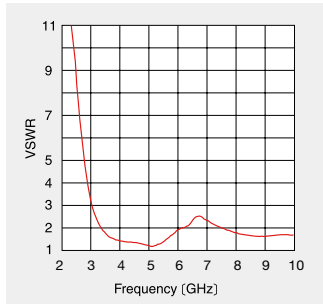
VSWR特性代表例 (5GHz频带)



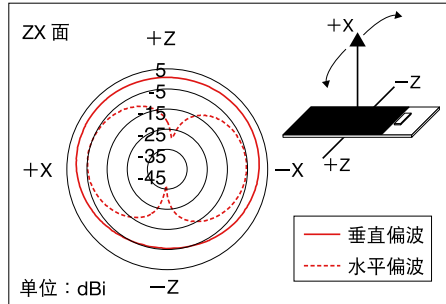
辐射特性代表例 (@5.25GHz)



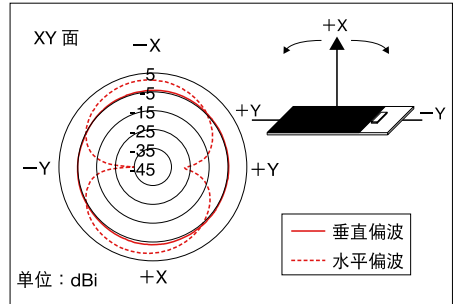
● AH 086M555003



VSWR特性代表例



辐射特性代表例 (@3.96GHz)



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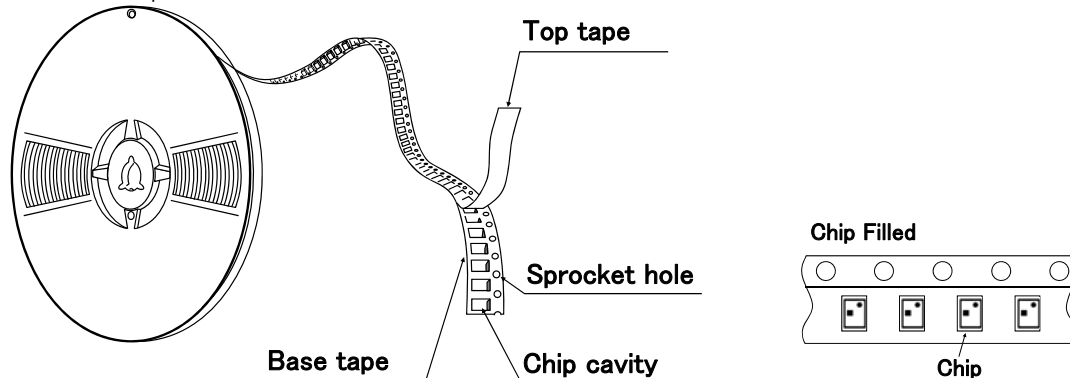
PACKAGING

① Minimum Quantity

Type	Standard Quantity (pcs) Embossed Tape
AF216M, AF816M, AH104F, AH104N	2000
AH316M	3000
AH083F, AH086M	1000
AH212M	4000

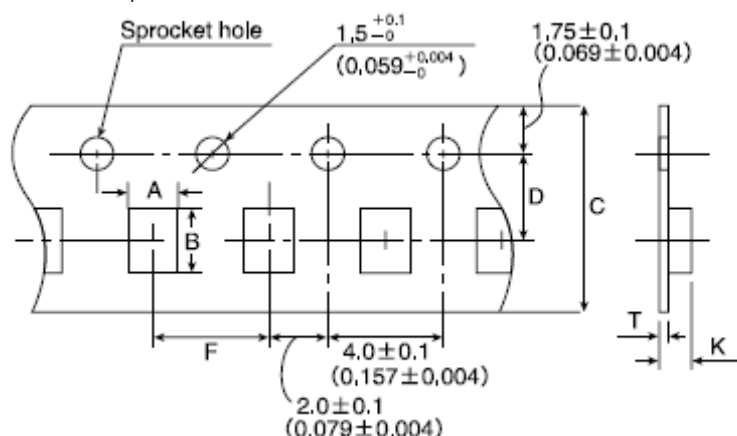
② Tape Material

● Embossed Tape



③ Taping Dimensions

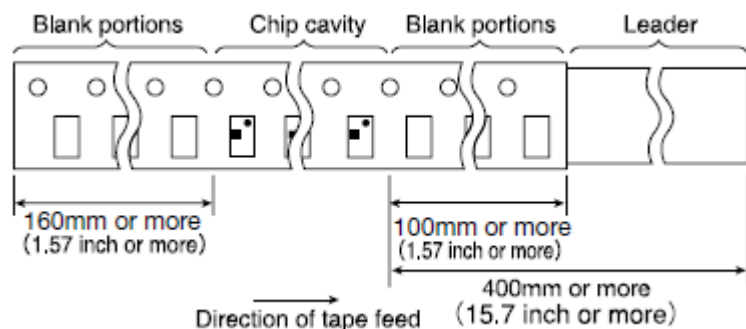
● Embossed Tape



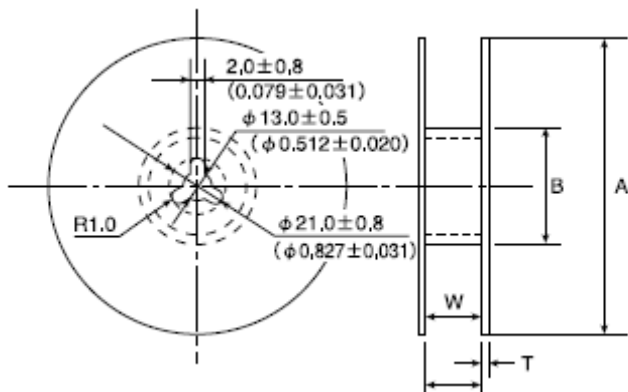
Type	Chip Cavity		Tape Widthness		Insertion Pitch	Tape Thickness max.	
	A	B	C	D	F	K	T
AF216M	1.85±0.2 (0.073±0.008)	2.75±0.2 (0.108±0.008)	8±0.2 (0.315±0.008)	3.5±0.1 (0.138±0.004)	4±0.1 (0.157±0.004)	1.95 (0.077)	0.3 (0.012)
AF816M	1.95±0.2 (0.077±0.008)	8.4±0.2 (0.331±0.008)	16±0.3 (0.630±0.012)	7.5±0.1 (0.296±0.004)	4±0.1 (0.157±0.004)	2.05 (0.081)	0.35 (0.014)
AH316M	1.9±0.2 (0.075±0.008)	3.5±0.2 (0.138±0.008)	8±0.2 (0.315±0.008)	3.5±0.1 (0.138±0.004)	4±0.1 (0.157±0.004)	0.85 (0.033)	0.3 (0.012)
AH083F	3.35±0.2 (0.132±0.008)	8.35±0.2 (0.329±0.008)	16±0.3 (0.630±0.012)	7.5±0.1 (0.295±0.004)	8±0.1 (0.315±0.004)	1.55 (0.061)	0.3 (0.012)
AH104F, AH104N	4.35±0.2 (0.171±0.008)	10.35±0.2 (0.407±0.008)	24±0.3 (0.945±0.012)	11.5±0.1 (0.435±0.004)	8±0.1 (0.315±0.004)	1.55 (0.061)	0.3 (0.012)
AH086M	6.25±0.2 (0.246±0.008)	8.26±0.2 (0.325±0.008)	16±0.3 (0.630±0.012)	7.5±0.1 (0.296±0.004)	12±0.1 (0.473±0.004)	1.3 (0.051)	0.3 (0.012)
AH212M	1.5±0.2 (0.059±0.008)	2.3±0.2 (0.091±0.008)	8±0.3 (0.315±0.012)	3.5±0.1 (0.138±0.004)	4±0.1 (0.157±0.004)	1.5 (0.059)	0.3 (0.012)

Unit:mm (inch)

④Leader and Blank Portion



⑤Reel size

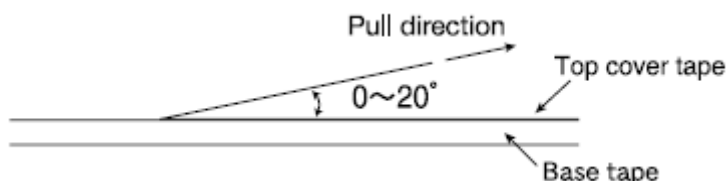


Type	A	B	W	T
AF216M, AH212M	178 $\pm$ 2.0	50 min.	10.0 $\pm$ 1.5	3.0 max.
AH316M	(7.0 $\pm$ 0.08)	(2.0 min.)	(0.394 $\pm$ 0.06)	(0.12 max.)
AF816M	178 $\pm$ 2.0	50 min.	17.0 $\pm$ 1.0	2.5 max.
AH083F	(7.0 $\pm$ 0.08)	(2.0 min.)	(0.67 $\pm$ 0.04)	(0.1 max.)
AH104F	330 $\pm$ 2.0	100 $\pm$ 1.0	25.5 $\pm$ 1.0	3.0 max.
AH104N	(13.0 $\pm$ 0.08)	(3.94 $\pm$ 0.04)	(1.0 $\pm$ 0.04)	(0.12 max.)
AH086M	330 $\pm$ 2.0	100 $\pm$ 1.0	17.0 $\pm$ 1.0	2.5 max.
	(13.0 $\pm$ 0.08)	(3.94 $\pm$ 0.04)	(0.67 $\pm$ 0.04)	(0.1 max.)

Unit: mm (inch)

⑥Top Tape Strength

The top tape requires a peel-off force of 0.1~0.7N in the direction of the arrow as illustrated below.



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RELIABILITY DATA

1. Operating Temperature Range	
Specified Value	−20~+80°C
2. Storage Temperature Range	
Specified Value	−40~+85°C
Test Methods and Remarks	※with being taped, −20~+40°C
3. Solderability	
Specified Value	At least 90% of immersed terminal surface is covered by new solder.
Test Methods and Remarks	Solder temperature : 230±5°C Duration : 3±1 sec. Preconditioning : Preheating at 150°C after immersion into flux.
4. Thermal Shock	
Specified Value	Shall satisfy required VSWR value of individual specifications for each item.
Test Methods and Remarks	1 hour of recovery after 10 times of 30min.immersion alternately at −40°C and 85°C of temperature, followed by evaluating electrical characteristics.
5. High Temperature Storage Test	
Specified Value	Shall satisfy required VSWR value of individual specifications for each item.
Test Methods and Remarks	1 hour of recovery under standard condition after 96 hours recovery with 85°C of temperature, followed by evaluating electrical characteristics.
6. Low Temperature Storage Test	
Specified Value	Shall satisfy required VSWR value of individual specifications for each item.
Test Methods and Remarks	1 hour of recovery under standard condition after 96 hours recovery with −40°C of temperature, followed by evaluating electrical characteristics.
7. Humidity Storage Test	
Specified Value	Shall satisfy required VSWR value of individual specifications for each item.
Test Methods and Remarks	1 hour of recovery under standard condition after 96 hours recovery with 60°C of temperature, 90~95% relative humidity followed by evaluating electrical characteristics.
8. Resistance to Reflow	
Specified Value	Shall satisfy required VSWR value of individual specifications for each item.
Test Methods and Remarks	Two times of reflow soldering by recommended profile attached, followed by evaluating electrical characteristics.

CHIP ANTENNAS

PRECAUTIONS

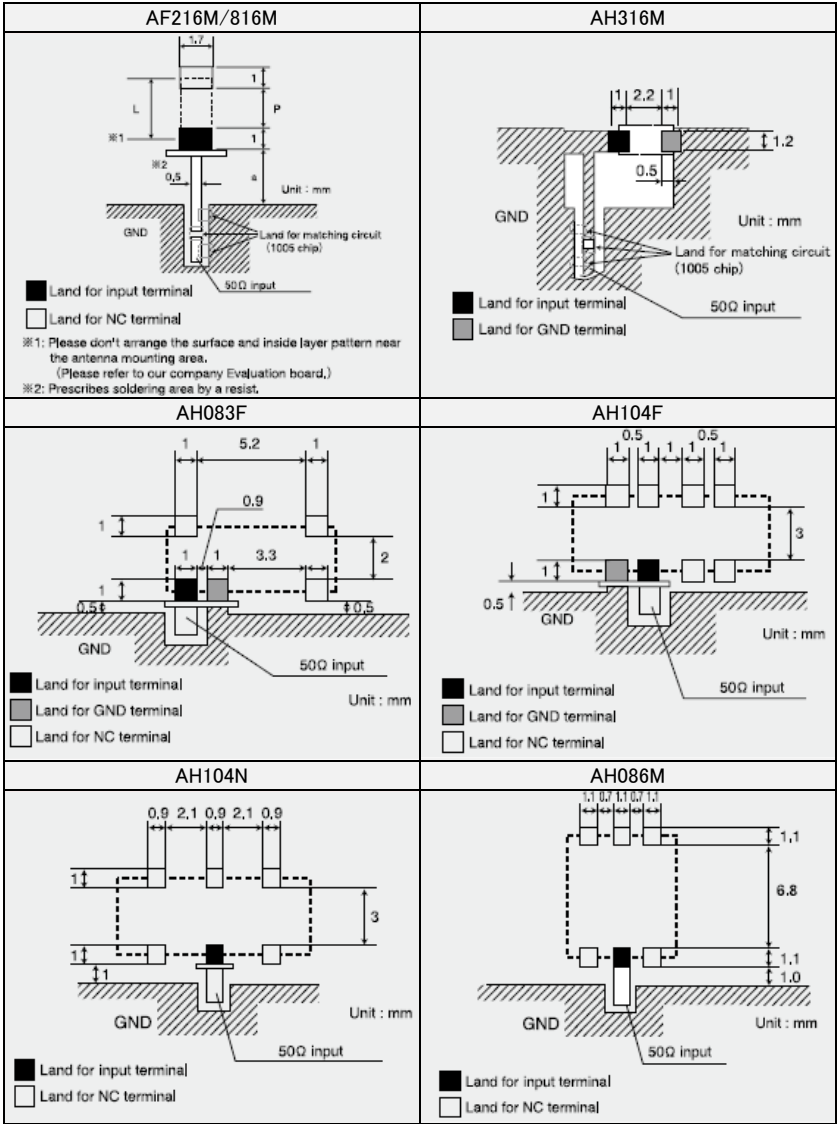
1. PCB Design

Precautions

◆Land pattern design
Please do not arrange the surface and inside layer pattern near the antenna mounting area.

Technical Considerations

◆Land pattern design
Land pattern dimension examples and recommended antenna land pattern



Type	Dimensions		
	L	P	A
AF216M	2.5	1.5	3
AF816M	8	7	5
AH212M	2	1	3

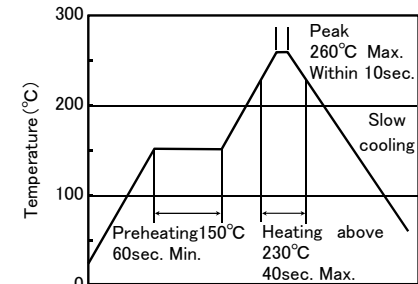
Unit : mm

2. Soldering

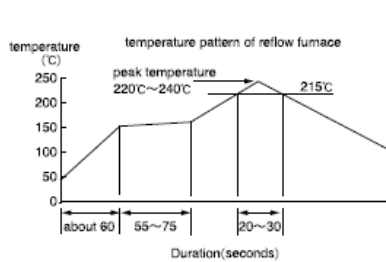
Technical Considerations

◆Conditions of Reflow soldering (for reference)

• Pb Free Reflow Profile



• Reflow profile



※ Components should be preheated to within 100 to 130°C from soldering temperature.
※ Assured to be reflow soldering for 2 times.

Note : The above profiles are the maximum allowable soldering condition, therefore these profiles are not always recommended.

▶ This catalog contains the typical specification only due to the limitation of space. When you consider the purchase of our products, please check our specification.
For details of each product (characteristics graph, reliability information, precautions for use, and so on), see our Web site (<http://www.ty-top.com/>) .

3. Storage Conditions

Precautions

◆Storage conditions

1. The Products should not be used in the following environments :

- exposure to special gases such as (C12, NH3, SOx, NOx)
- exposure to volatile gas or inflammable gas
- exposure to a lot of dust
- exposure to water or condensation
- exposure to direct sunlight or freezing

2. The Products should be kept in the following conditions :

- Temperature : $-10\sim+40^{\circ}\text{C}$
- Humidity : 70%RH max.

3. The products should be used within 6 months after delivery. In case of storage over 6 months, solderability shall be checked before actual usage.

■ Please contact our offices for further details of specifications.

All of the standard values listed here are subject to change without notice due to technical improvements.

Therefore, please check the specifications carefully before use.