

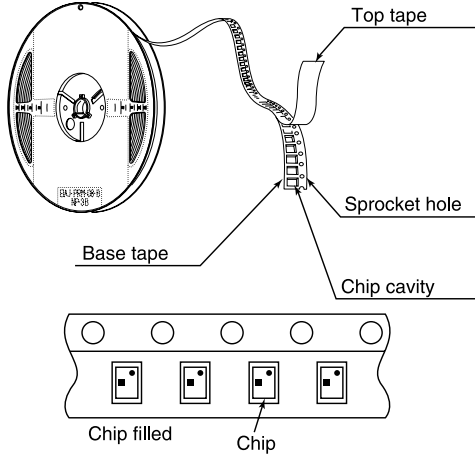
# PACKAGING

## ① Minimum Quantity

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

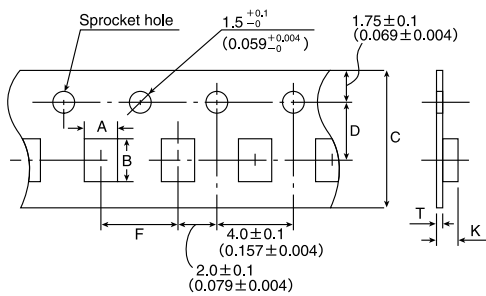
## ② Tape Material

Embossed Tape

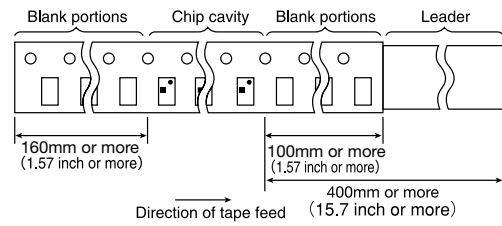


## ③ Taping Dimensions

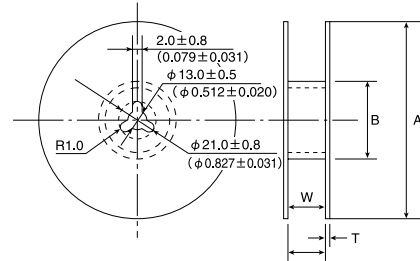
● Embossed Tape



## ④ Leader and Blank Portion



## ⑤ Reel size

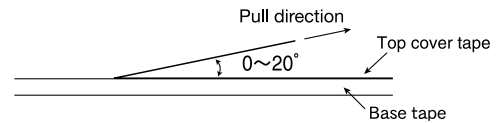


Type	A	B	W	T
AF216M, AH212M	178±2.0 (7.0±0.08)	50 min. (2.0 min.)	10.0±1.5 (0.394±0.06)	3.0 max. (0.12 max.)
AH316M				
AF816M	178±2.0 (7.0±0.08)	50 min. (2.0 min.)	17.0±1.0 (0.67±0.04)	2.5 max. (0.1 max.)
AH083F				
AH104F	330±2.0 (13.0±0.08)	100±1.0 (3.94±0.04)	25.5±1.0 (1.0±0.04)	3.0 max. (0.12 max.)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

Unit : mm (inch)

## ⑥ Top Tape Strength

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



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±0.012)	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)

\* 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/>) or CD catalogs.

## RELIABILITY DATA

<b>1. Operating Temperature Range</b>	
Specified Value	-20~+80°C
<b>2. Storage Temperature Range</b>	
Specified Value	-40~+85°C
[Test Methods and Remarks] *with being taped, -20~+40°C	
<b>3. Solderability</b>	
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.	
<b>4. Thermal Shock</b>	
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.	
<b>5. High Temperature Storage Test</b>	
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.	
<b>6. Low Temperature Storage Test</b>	
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.	
<b>7. Humidity Storage Test</b>	
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.	
<b>8. Resistance to Reflow</b>	
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.	

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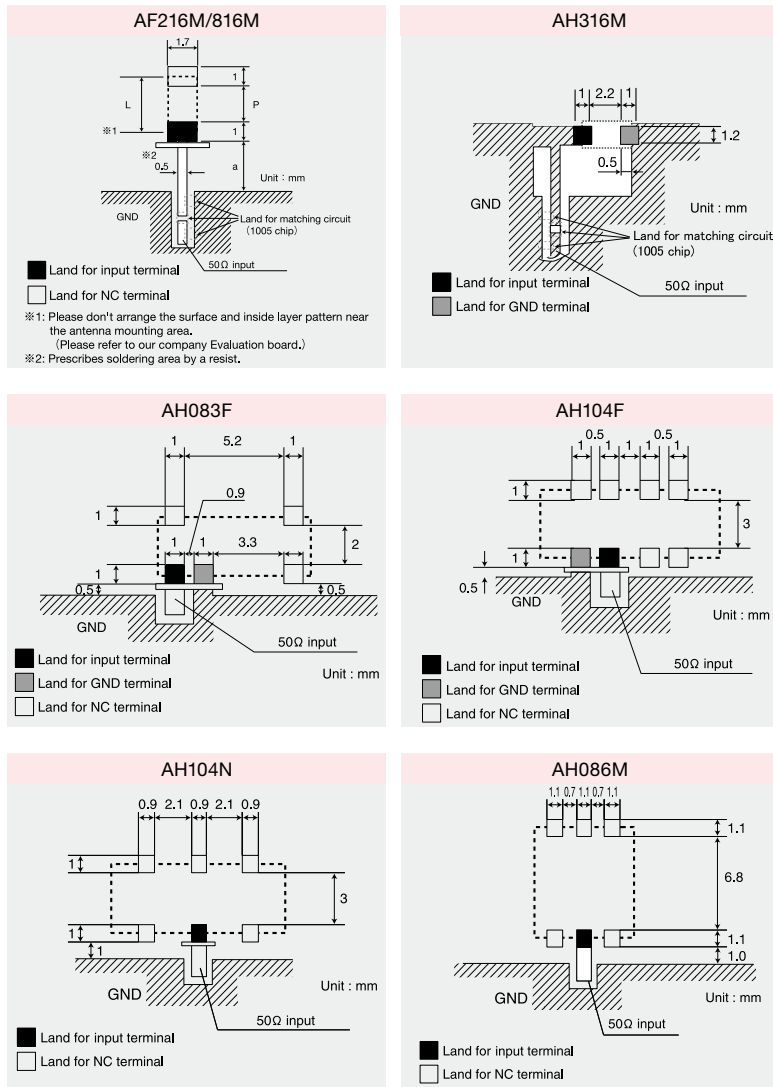
# PRECAUTIONS

## 1. PCB Design

### Precautions

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

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



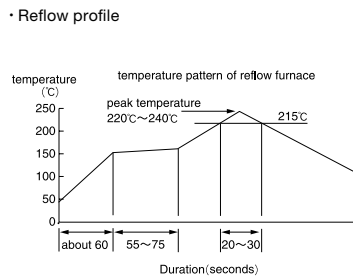
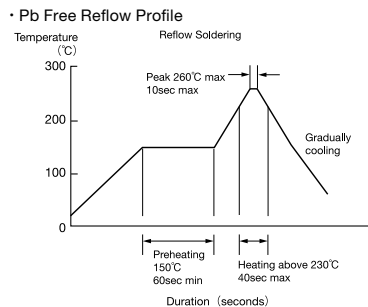
Type	Dimensions		
	L	P	a
AF216M	2.5	1.5	3
AF816M	8	7	5
AH212M	2	1	3

Unit : mm

### Technical Considerations

## 2. Soldering

- ◆ Conditions of Reflow soldering (for reference)



- ※ 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.

## 3. Storage Conditions

- ◆ 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~+40°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.

### Precautions

- 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.

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