

AT3216 Series

Multilayer Chip Antenna

Features

- ❖ Monolithic SMD with small, low-profile and light-weight type.
- ❖ Wide bandwidth

Applications

- ❖ Bluetooth/Wireless LAN/Home RF
- ❖ ISM band 2.4GHz applications



Specifications

Part Number	Frequency Range (MHz)	Peak Gain (XZ-V)	Average Gain (XZ-V)	VSWR	Impedance
AT3216 -B2R7HAA_	2400 ~ 2500	0.5 dBi typ.	-0.5 dBi typ.	2 max.	50 Ω

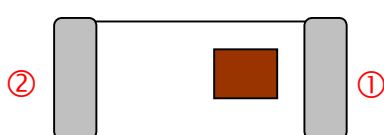
Q'ty/Reel (pcs) : 3,000pcs
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Power Capacity : 3W max.

Part Number

AT 3216 - B 2R7 HAA □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	AT : Antenna	② Dimensions (L x W)	3.2× 1.6 mm
③ Material Code	B	④ Frequency Range	2R7=2700MHz
⑤ Specification Code	HAA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

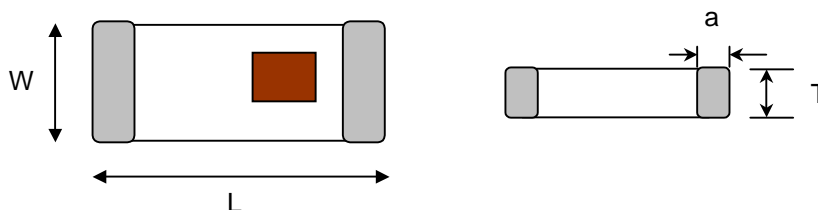
Terminal Configuration



No.	Terminal Name	No.	Terminal Name
①	Feeding Point	②	NC

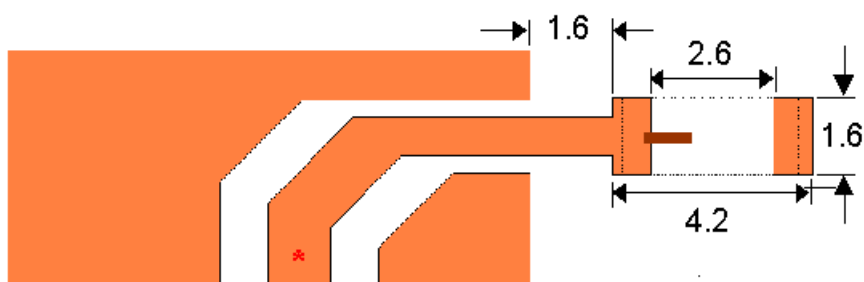
Dimensions and Recommended PC Board Pattern

Unit : mm

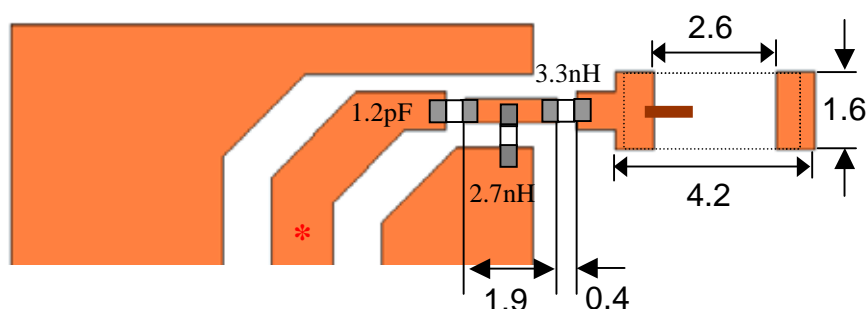


Mark	L	W	T	a
Dimensions	3.2±0.2	1.6±0.2	1.3+ 0.1/-0.2	0.5±0.3

(a) Without Matching Circuits



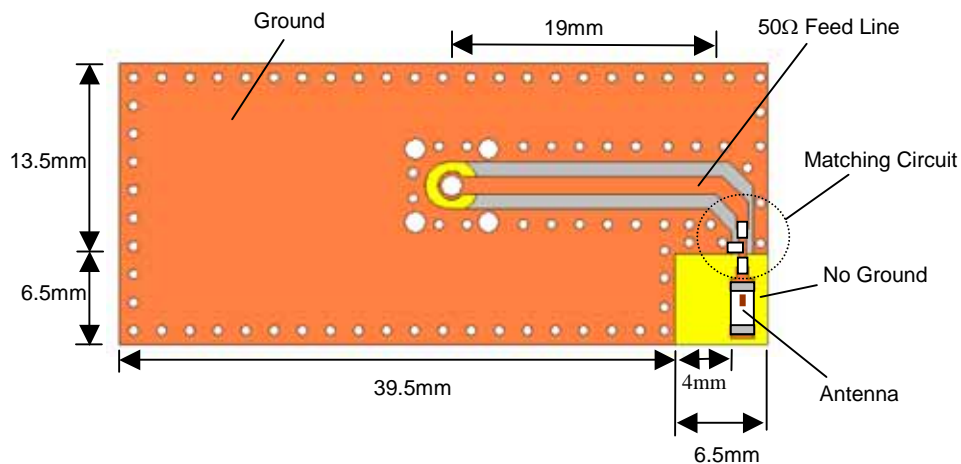
(b) With Matching Circuits



*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

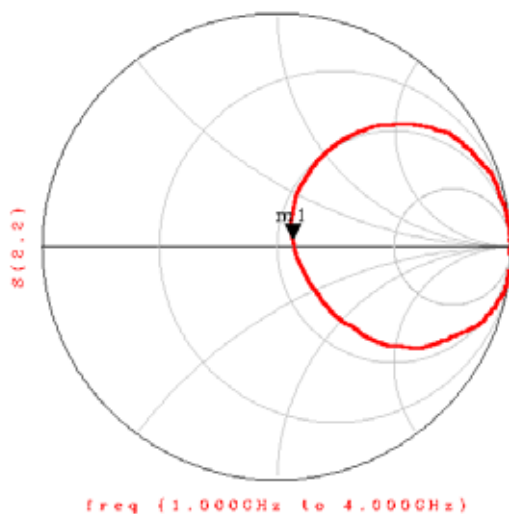
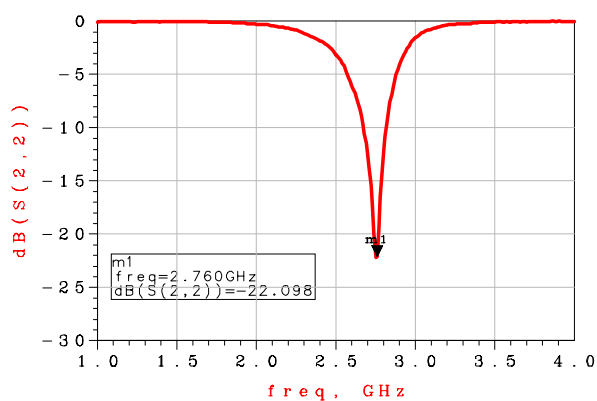
Typical Electrical Characteristics (T=25°C)

❖ Test Board

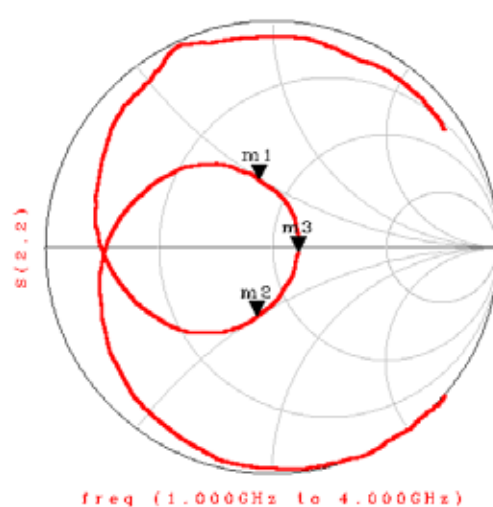
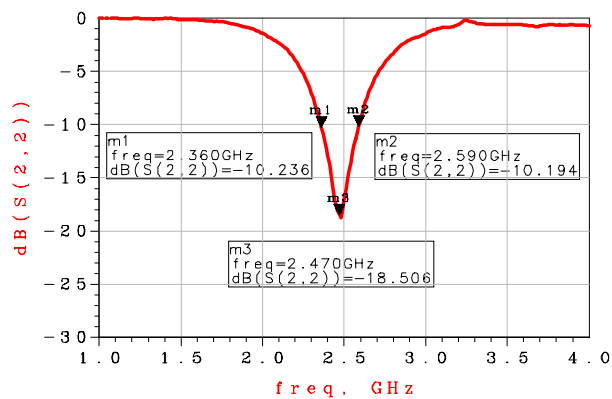


❖ Return Loss

(a) Without Matching Circuits

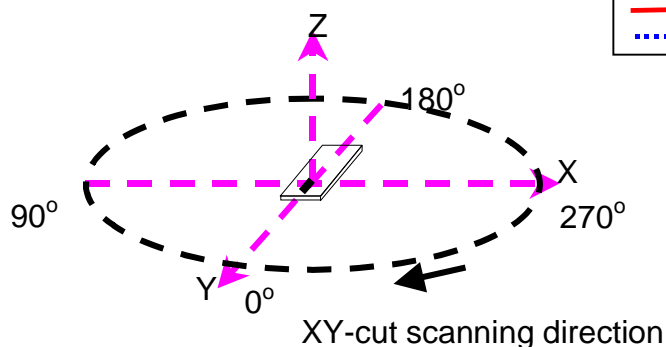


(b) With Matching Circuits

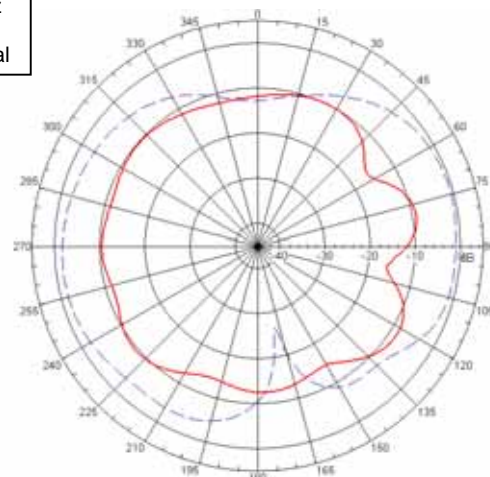


Radiation Patterns

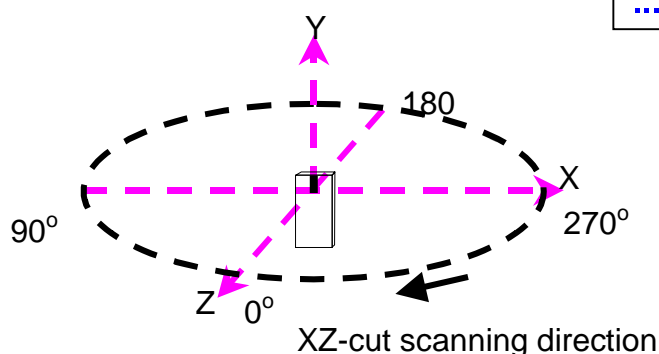
XY-V/XY-H



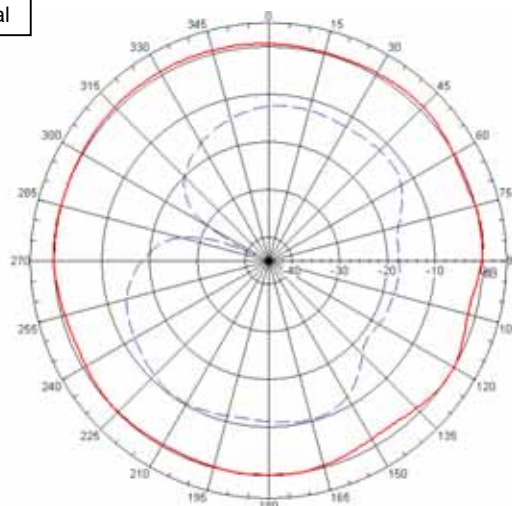
XY cut @2.45GHz
— Vertical
... Horizontal



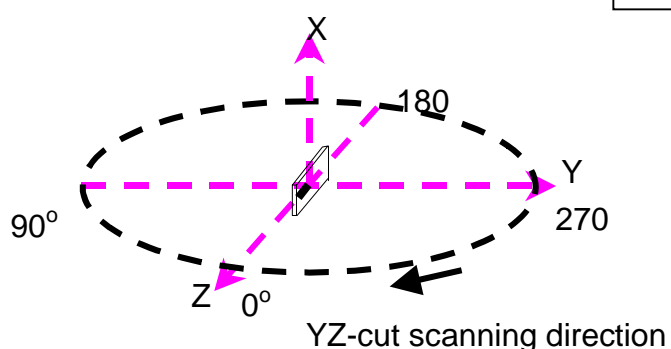
XZ-V/XZ-H



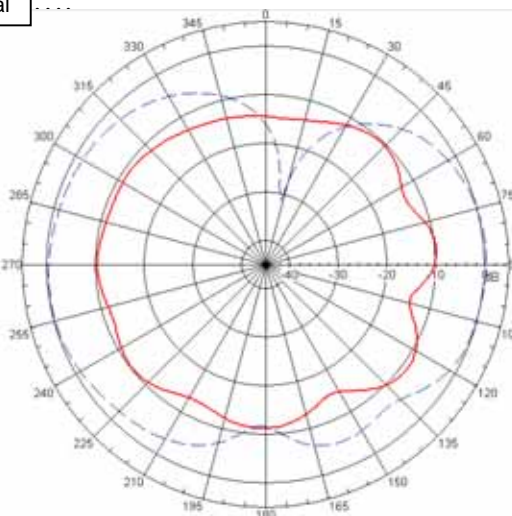
XZ cut @2.45GHz
— Vertical
... Horizontal



YZ-V/YZ-H



YZ cut @2.45GHz
— Vertical
... Horizontal



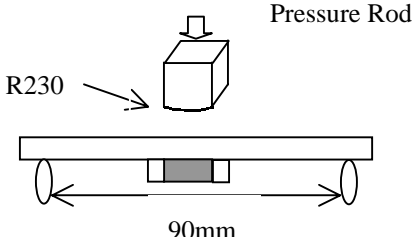
Advanced Ceramic X Corp.

16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

TEL:886-3-5987008 FAX:886-3-5987001

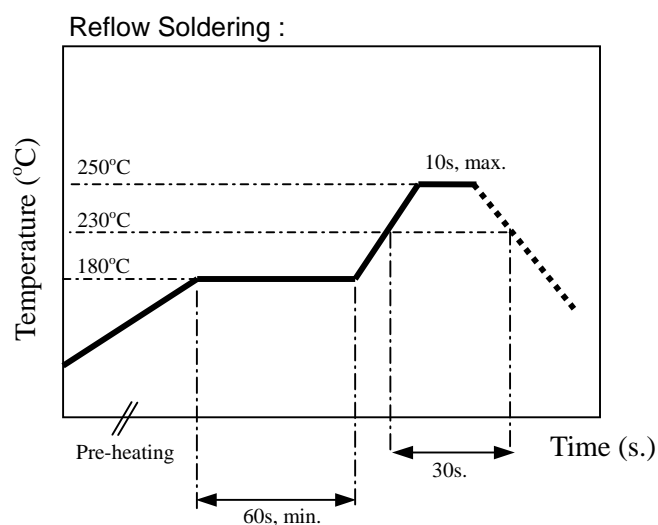
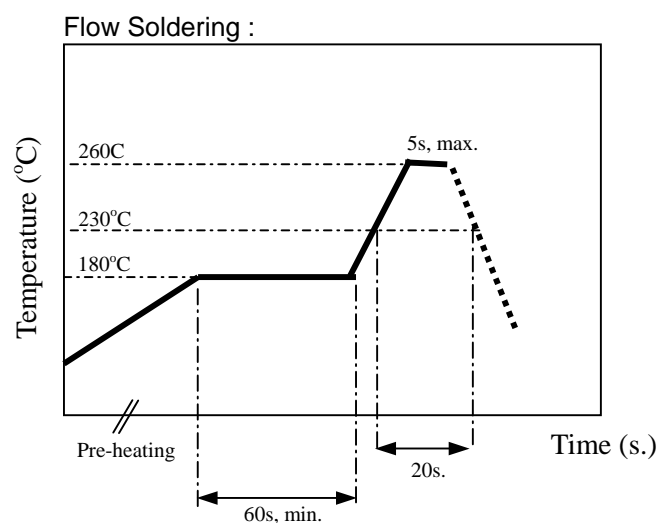
E-mail: acx@acxc.com.tw <http://www.acxc.com.tw>

Mechanical & Environmental Characteristics

	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> 1. No apparent damage 2. More than 75% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> 1. Preheat: $120 \pm 5^{\circ}\text{C}$ 2. Solder: $230 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> 1. No apparent damage 2. Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 1. One cycle/ step 1: $85 \pm 5^{\circ}\text{C}$ for 20sec step 2: $-40 \pm 3^{\circ}\text{C}$ for 20sec 2. Cycle time: 30min 3. No. of cycles: 100 4. Recovery: 1-2hrs
Heat Resistance	<ol style="list-style-type: none"> 1. No apparent damage 2. Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 1. Temperature: $85 \pm 2^{\circ}\text{C}$ 2. Duration: 24 ± 2hrs 3. Recovery: 1-2hrs
Low Temperature Resistance	<ol style="list-style-type: none"> 1. No apparent damage 2. Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 1. Temperature: $-40^{\circ} \pm 5^{\circ}\text{C}$ 2. Duration: 24 ± 2hrs 3. Recovery: 1-2hrs
Humidity Resistance	<ol style="list-style-type: none"> 1. No apparent damage 2. Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 1. Temperature: $85 \pm 2^{\circ}\text{C}$ 2. Humidity: 80% ~ 85% RH 3. Duration: 1000 ± 48hrs 4. Recovery: 1-2hrs
Soldering strength (Push strength)	<ol style="list-style-type: none"> 1. 9.8N minimum 	<ol style="list-style-type: none"> 1. Solder specimen onto test jig. 2. Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Bending)	<ol style="list-style-type: none"> 1. No apparent damage 2. Fulfill the electrical specification 	<ol style="list-style-type: none"> 1. Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. 2. Apply a bending force of 2mm deflection 
Drop Shock	<ol style="list-style-type: none"> 1. No apparent damage 	<ol style="list-style-type: none"> 1. Dropped onto hard wood from height of 50 cm for 3 times ; each x,y and z direction except terminal direction

Typical Soldering Profile

❖ Typical Soldering Profile for Lead-free Process



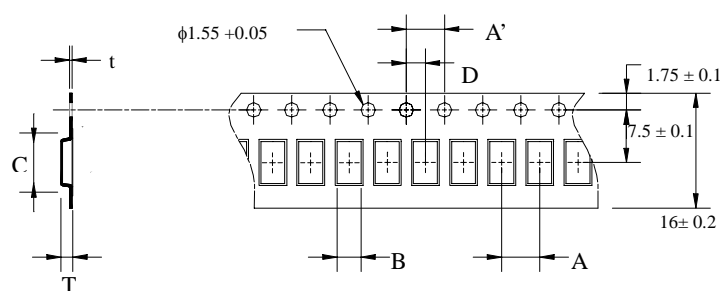
The sample must be pre-heated before soldering .The temperature difference between preheating and soldering must be within 150 .

Notes

❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Taping Specifications

❖ Tape Dimensions (Unit: mm)

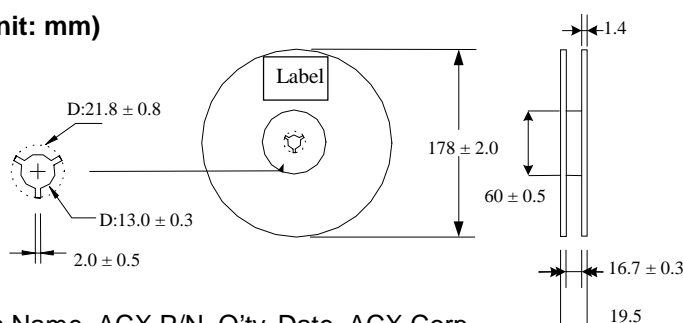


Type	A	A'	B	C	D	t	T
3216	4.0±0.1	4.0±0.1	1.9±0.1	3.5±0.1	2.0±0.1	0.20±0.05	Max. 1.4
5020	4.0±0.1	4.0±0.1	2.4±0.1	5.5±0.1	2.0±0.1	0.20±0.05	Max. 1.4
7020	4.0±0.1	4.0±0.1	2.4±0.1	7.3±0.1	2.0±0.1	0.22±0.05	Max. 1.55
7635	8.0±0.1	4.0±0.1	3.75±0.1	7.85±0.1	2.0±0.1	0.30±0.05	Max. 1.40
8516	4.0±0.1	4.0±0.1	1.85±0.1	8.70±0.1	2.0±0.1	0.25±0.05	Max. 1.40
9520	4.0±0.1	4.0±0.1	2.3±0.1	9.7±0.1	2.0±0.1	0.22±0.05	Max. 1.45
R130	8.0±0.1	4.0±0.1	3.35±0.1	10.35±0.1	2.0±0.1	0.25±0.05	Max. 1.40

❖ Quantity

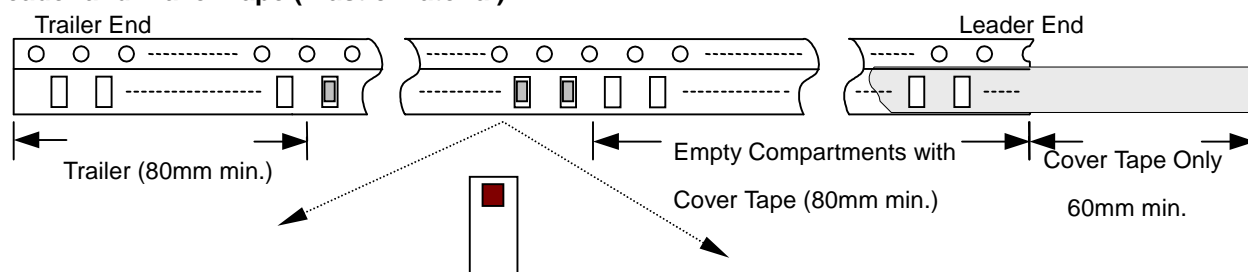
Type	3216	5020	7020	7635	8516	9520	R130
Quantity /per reel	3,000pcs	2,000	1,000 pcs	1,000 pcs	1000pcs	1,000 pcs	1,000 pcs

❖ Reel Dimensions (Unit: mm)

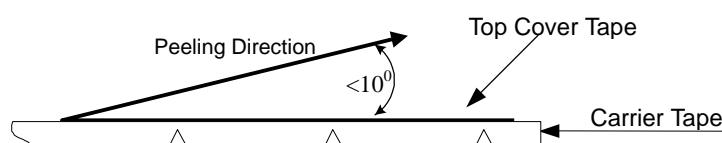


Label: Customer's Name, ACX P/N, Q'ty, Date, ACX Corp.

❖ Leader and Trailer Tape (Plastic material)



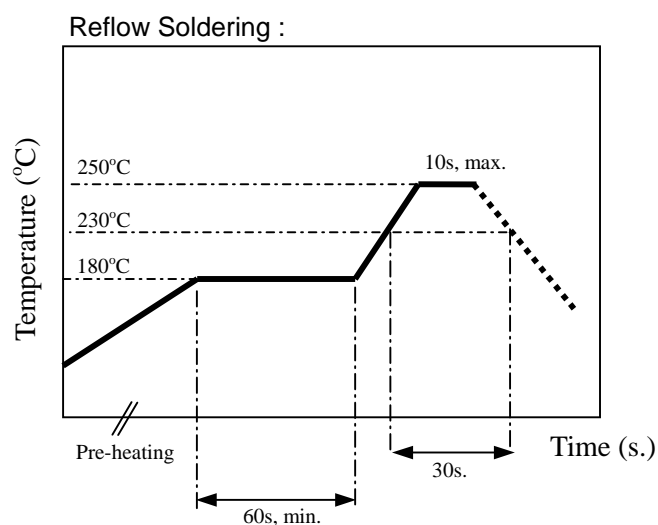
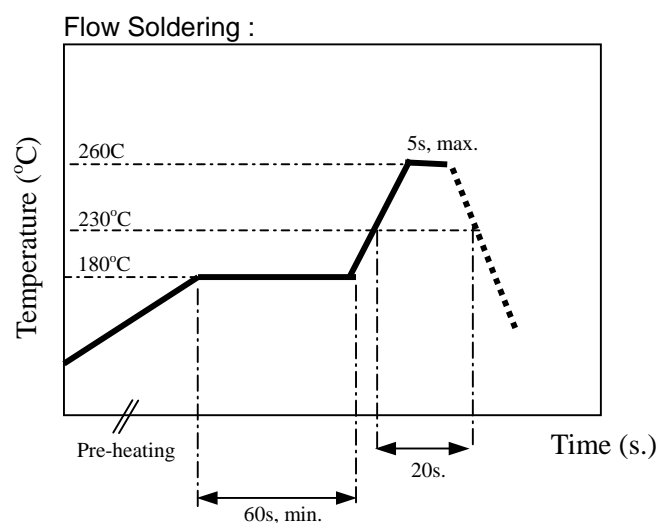
❖ Peel-off Force



Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300±10 mm/min .

Typical Soldering Profile

❖ Typical Soldering Profile for Lead-free Process



The sample must be pre-heated before soldering .The temperature difference between preheating and soldering must be within 150 .

Notes

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❖Storage Conditions

- (1) Temperature: 15 ~35 , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment
- (3) Products should be used within six months of receipt.

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