

高周波積層チップアンテナ

HIGH FREQUENCY MULTILAYER CHIP ANTENNA

OPERATING TEMP. -20~+80°C



リフロー／REFLOW

特長 FEATURES

- ・小型・低背
- ・広帯域・高利得
- ・安定した温度特性

- ・Compact , Lower profile.
- ・Wide bandwidth , High Gain.
- ・Stable temperature characteristics.

用途 APPLICATIONS

- ・Bluetooth®module、無線LAN

- ・Bluetooth®module, Wireless LAN.

形名表記法 ORDERING CODE

1

形式

AH	高周波アンテナ
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2

電極仕様

△	メッキ品
△=スペース	

3

形状寸法 [mm]

042	4.0×2.0
083	8.0×3.0
104	10.0×4.0
122	12.0×2.0

4

種別コード

F	逆F
N	モノポール (デュアルバンド)

5

周波数 [MHz]

例	
2450	2400 ~ 2500
5250	5150 ~ 5350

1. 中心周波数を記載。
2. デュアルバンドは下の周波数。

6

個別仕様

01~	
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7

包装

-T	テーピング
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A H △ 1 0 4 F 2 4 5 0 0 1 - T
 1 2 3 4 5 6 7

1

Type

AH	Antenna for High Frequency
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2

Electrode code

△	With Plating
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△=Blank space

3

Dimensions (case size) [mm]

042	4.0×2.0
083	8.0×3.0
104	10.0×4.0
122	12.0×2.0

4

Special Code

F	Inverted F
N	Mono Pole (Dual)

5

Frequency [MHz]

example	
2450	2400 ~ 2500
5250	5150 ~ 5350

1. Describe Center Frequency

2. Lower Frequency for Dualband

6

Spec code

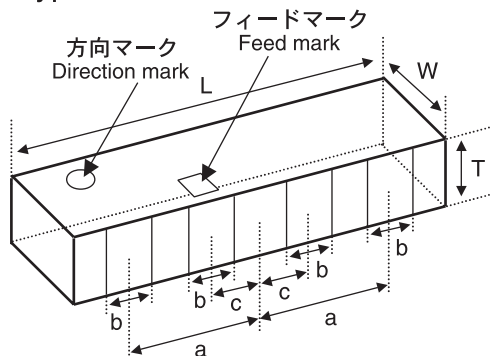
01~	
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7

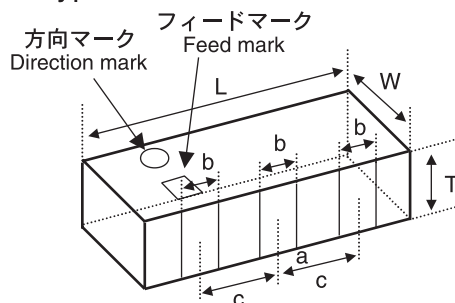
Packaging

-T	Tape & reel
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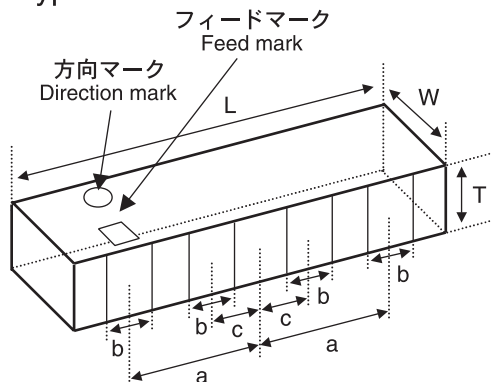
104F Type



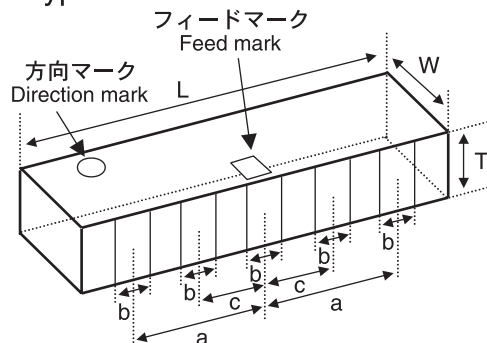
042F Type



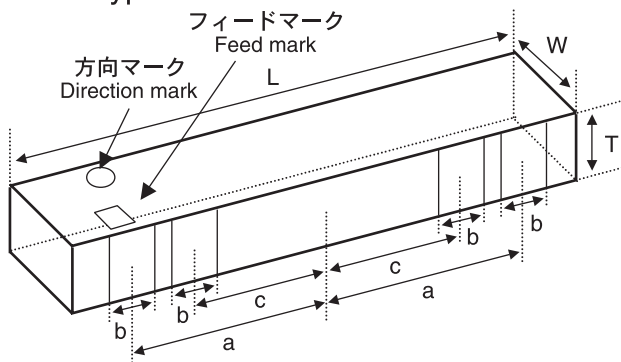
083F Type



104N Type



122F Type



Item	L	W	T	a	b	c
104F	10±0.30	4±0.30	1±0.30	2.5±0.30	1±0.30	1±0.30
083F	8±0.30	3±0.30	1±0.30	3.1±0.30	1±0.30	1.15±0.30
122F	12±0.30	2±0.20	0.95±0.15	5.1±0.30	1±0.30	3.1±0.30
042F	4±0.30	2±0.20	0.8±0.20	0±0.30	0.6±0.30	1.3±0.30
104N	10±0.30	4±0.30	1±0.30	3±0.30	0.7±0.30	1.5±0.30

Unit : mm

アイテム一覧・電気的特性・代表特性 Part Numbers ・Electrical Characteristics ・Typical Characteristics

弊社標準基板上での代表的な特性例
Typical Characteristics on Taiyo Yuden evaluation board

Item	Center Frequency (MHz)	Peak Gain	Bandwidth
104F Series	2450(TYP)	+2dBi	300MHz以上 (VSWR=2)
122F Series	2450(TYP)	+1dBi	200MHz以上 (VSWR=3)
083F Series	2450(TYP)	+2dBi	145MHz以上 (VSWR=3)
042F Series	5250(TYP)	+1dBi	240MHz以上 (VSWR=2)
104N Series	2450(TYP)	0dBi	530MHz以上 (VSWR=2)
	5400(TYP)	-1dBi	1.3GHz以上 (VSWR=2)

セレクションガイド
Selection Guide

アイテム一覧
Part Numbers

特性図
Electrical Characteristics

梱包
Packaging

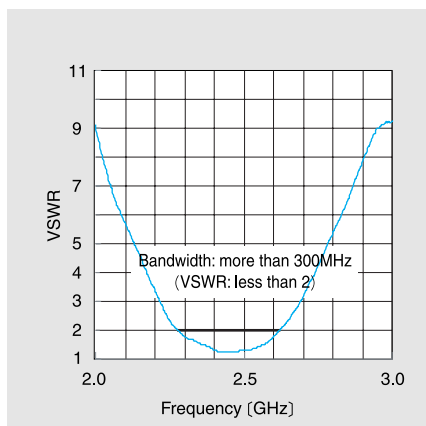
信頼性
Reliability Data

使用上の注意
Precautions



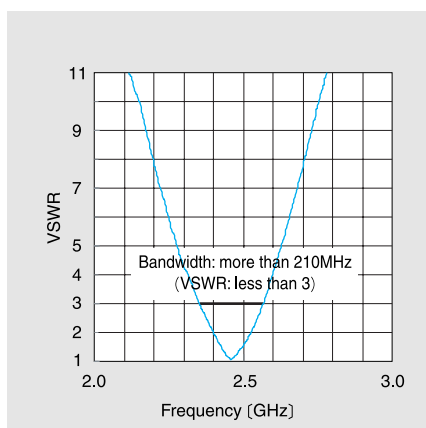
etc





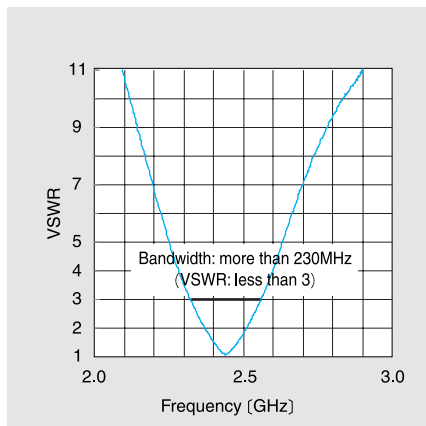
VSWR特性の代表例 (104Fシリーズ)

Typical characteristics of VSWR (104F series)



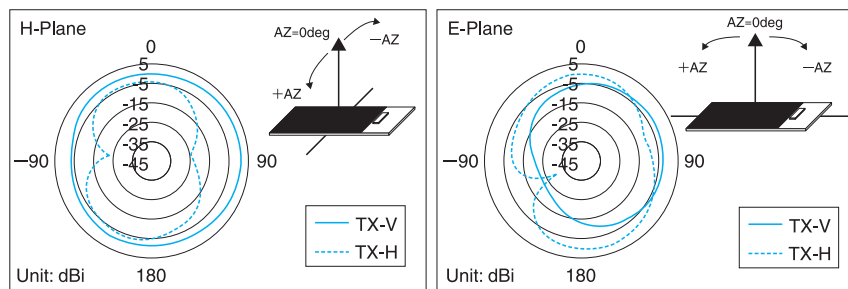
VSWR特性の代表例 (083Fシリーズ)

Typical characteristics of VSWR (083F series)



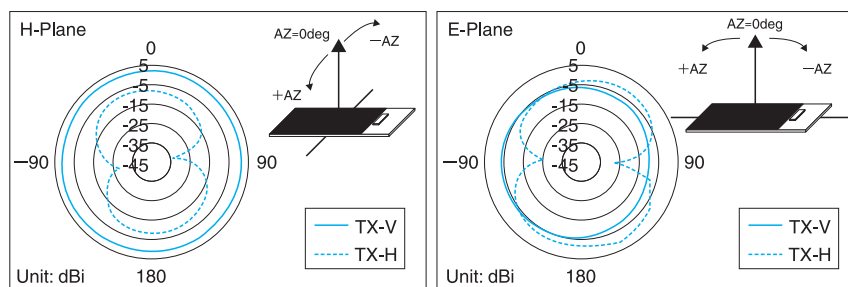
VSWR特性の代表例 (122Fシリーズ)

Typical characteristics of VSWR (122F series)



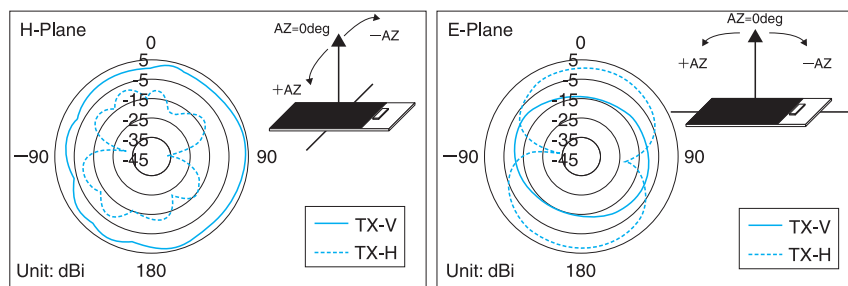
指向性の代表例 (104Fシリーズ @2.45GHz)

Typical characteristics of radiation pattern (104F series @2.45GHz)



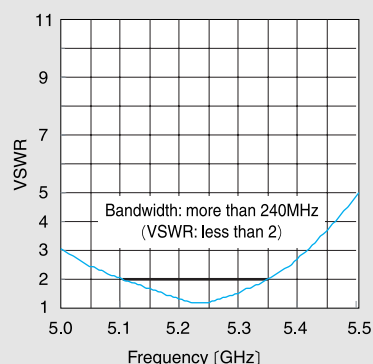
指向性の代表例 (083Fシリーズ @2.45GHz)

Typical characteristics of radiation pattern (083F series @2.45GHz)

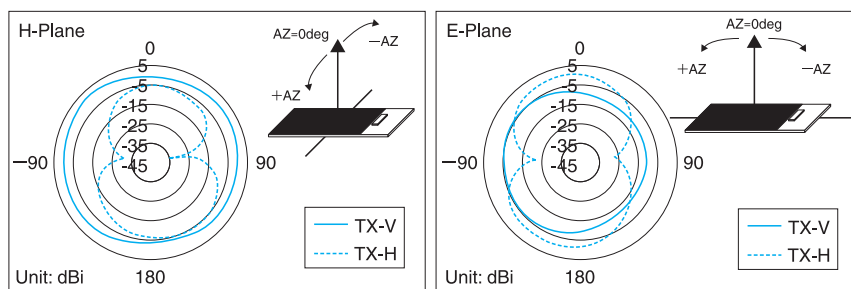


指向性の代表例 (122Fシリーズ @2.45GHz)

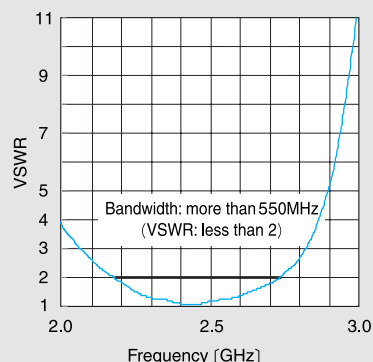
Typical characteristics of radiation pattern (122F series @2.45GHz)



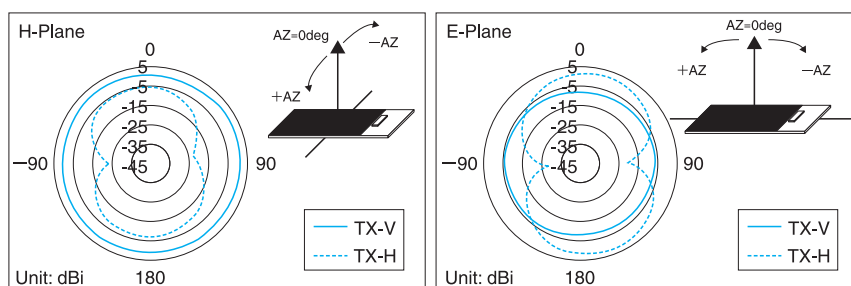
VSWR特性の代表例 (042Fシリーズ)
Typical characteristics of VSWR (042F series)



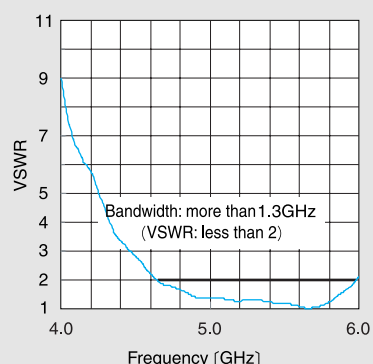
指向性の代表例 (042Fシリーズ @5.25GHz)
Typical characteristics of radiation pattern (042F series @5.25GHz)



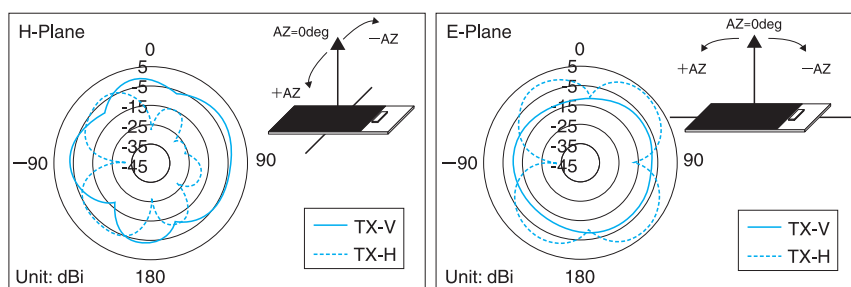
VSWR特性の代表例 (104Nシリーズ 2GHz帯)
Typical characteristics of VSWR (104N series 2GHz band)



指向性の代表例 (104Nシリーズ @2.45GHz)
Typical characteristics of radiation pattern (104N series @2.45GHz)



VSWR特性の代表例 (104Nシリーズ 5GHz帯)
Typical characteristics of VSWR (104N series 5GHz band)

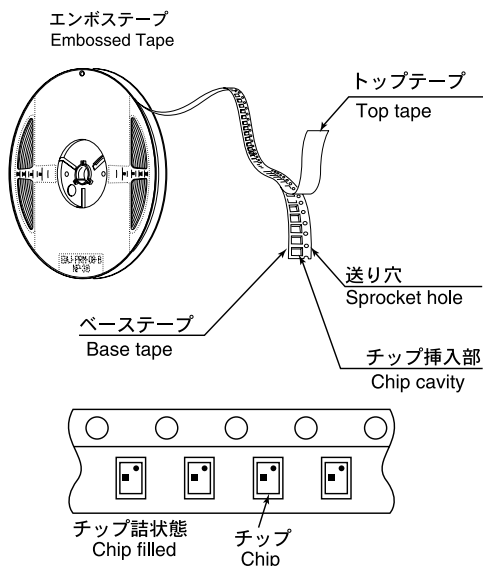


指向性の代表例 (104Nシリーズ @5.4GHz)
Typical characteristics of radiation pattern (104N series @5.4GHz)

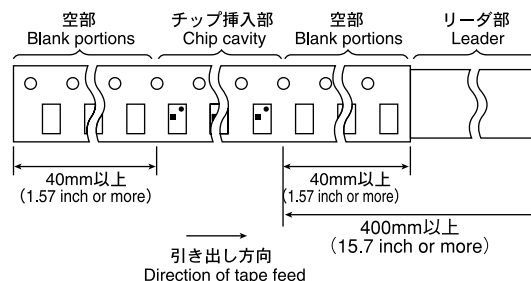
①最小受注単位数 Minimum Quantity

形式 Type	エンボステープ [pcs] Embossed Tape
104F, 122F, 042F, 104N	2000
083F	1000

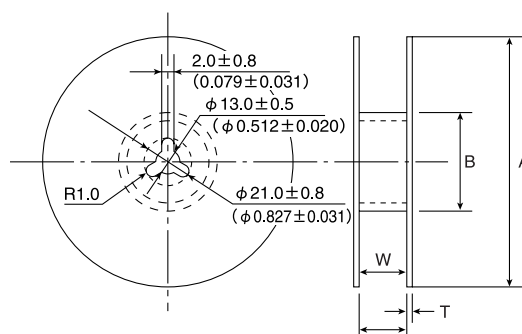
②テーピング材質 Tape Material



④リーダー部・空部 Leader and Blank portion



⑤リール寸法 Reel size



■テーピング梱包 Taped packaging

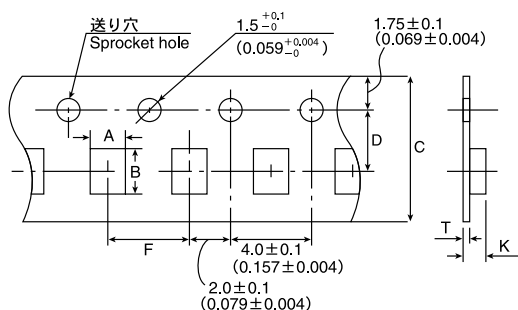
形式 (EIA) Type	製品厚み Thickness mm (inch)	標準数量 Standard quantity [pcs] エンボステープ Embossed tape
104F, 104N	1.00typ.(0.040)	2000
122F	1.00typ.(0.040)	2000
083F	1.00typ.(0.040)	1000
042F	0.8typ.(0.031)	2000

Reel	A	B	W	T
104F, 104N	330 ± 2.0 (13.0 ± 0.08)	100 ± 1.0 (3.94 ± 0.04)	25.5 ± 1 (1 ± 0.04)	3.0MAX (0.12)
122F	330 ± 2.0 (13.0 ± 0.08)	100 ± 1.0 (3.94 ± 0.04)	25.5 ± 1 (1 ± 0.04)	3.0MAX (0.12)
083F	178 ± 2.0 (7.09 ± 0.08)	50MIN (2.0)	17.0 ± 1 (0.67 ± 0.04)	2.5MAX (0.1)
042F	178 ± 2.0 (7 ± 0.08)	50MIN (2.0)	14.0 ± 1 (0.55 ± 0.04)	2.5MAX (0.1)

Unit : mm(inch)

③テーピング寸法 Taping dimensions

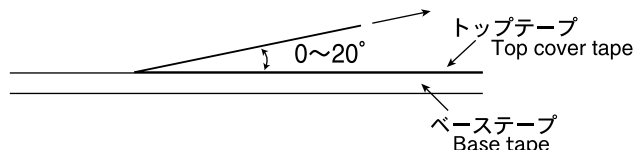
エンボステープ (8mm幅) Embossed tape (0.315 inches wide)



⑥トップテープ強度 Top Tape Strength

トップテープのはがし力とは下図矢印方向にて0.1~0.7Nとなります。

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



Type (EIA)	チップ挿入部 Chip cavity		テープ幅 Tape Widthness		挿入ピッチ Insertion Pitch	テープ厚み max Tape Thickness	
	A	B	C	D	F	K	T
104F, 104N	4.35 ± 0.2 (0.18 ± 0.008)	10.35 ± 0.2 (0.41 ± 0.008)	24 ± 0.3 (0.94 ± 0.012)	11.5 ± 0.1 (0.45 ± 0.004)	8.0 ± 0.1 (0.314 ± 0.004)	1.45 (0.057)	0.3 (0.012)
122F	2.3 ± 0.2 (0.091 ± 0.008)	12.3 ± 0.2 (0.48 ± 0.008)	24 ± 0.3 (0.94 ± 0.012)	11.5 ± 0.1 (0.45 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	1.35 (0.053)	0.35 (0.012)
083F	3.35 ± 0.2 (0.13 ± 0.008)	8.35 ± 0.2 (0.33 ± 0.008)	16 ± 0.3 (0.63 ± 0.012)	7.5 ± 0.1 (0.3 ± 0.004)	8.0 ± 0.1 (0.314 ± 0.004)	1.45 (0.057)	0.3 (0.012)
042F	2.3 ± 0.2 (0.091 ± 0.008)	4.3 ± 0.2 (0.17 ± 0.008)	12 ± 0.2 (0.47 ± 0.008)	5.5 ± 0.1 (0.22 ± 0.004)	4.0 ± 0.1 (0.157 ± 0.004)	1.15 (0.045)	0.25 (0.01)

Unit : mm(inch)

RELIABILITY DATA

Item	Specified Value	Test Methods and Remarks
1. Operating Temperature Range	−20~+80°C	
2. Storage Temperature Range	−40~+85°C	※with being taped, −20~+35°C
3. Solderability	At least 90% of Terminal surface immersed is covered by new solder.	Solder temperature : 230±5°C Duration : 3±1 sec. Preconditioning : Preheating at 150°C after immersion into flux.
4. Thermal shock	shall satisfy required VSWR value of individual specifications for each item.	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	shall satisfy required VSWR value of individual specifications for each item.	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	shall satisfy required VSWR value of individual specifications for each item.	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	shall satisfy required VSWR value of individual specifications for each item.	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	shall satisfy required VSWR value of individual specifications for each item.	Two times of Reflow soldering by recommended profile attached, followed by evaluating electrical characteristics.

Stages	Precautions	Technical considerations
1. PCB Design	Land pattern design Please don't arrange the surface and inside layer pattern near the antenna mounting area.	Land pattern dimension examples Unit : mm 50Ω input Land for input terminal Land for GND terminal Land for NC terminal Recommended antenna land pattern for 104F Unit : mm 50Ω input Land for input terminal Land for GND terminal Land for NC terminal Recommended antenna land pattern for 122F Unit : mm 50Ω input Land for input terminal Land for GND terminal Land for NC terminal Recommended antenna land pattern for 083F Unit : mm 50Ω input Land for input terminal Land for GND terminal Land for NC terminal Recommended antenna land pattern for 042F Unit : mm 50Ω input Land for GND terminal Land for NC terminal Recommended antenna land pattern for 104N

PRECAUTIONS

Stages	Precautions	Technical considerations
2. Soldering		Conditions of Reflow soldering (for reference) Reflow Profile temperature pattern of reflow furnace temperature (°C) peak temperature 220°C~240°C 215°C Duration(seconds) about 60 55~75 20~30
3. Storage conditions	◆Storage conditions - Capacitors 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 - Capacitors should be kept in the following conditions : - Temperature : -10~+40°C - Humidity : 15~85%RH - 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 of 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.