

Multilayer Antenna (Triple Band type)

For 1574-1577MHz / 2400-2484MHz / 5150-5850MHz

ANT161575TT-3000A1

1.6x0.8mm [EIA 0603]*

* Dimensions Code JIS[EIA]

Multilayer Antenna

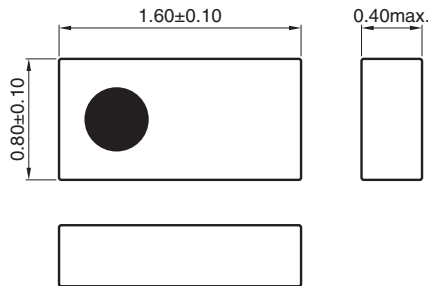
Conformity to RoHS Directive

For 1574-1577MHz / 2400-2484MHz / 5150-5850MHz

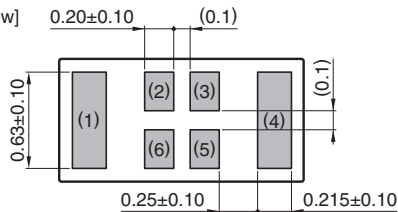
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SHAPES AND DIMENSIONS

[Top view]



[Bottom view]

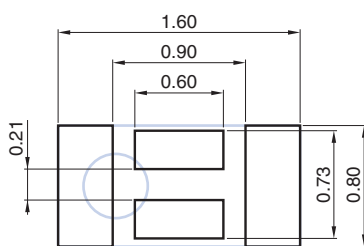


Terminal functions

1	Feed point for GPS
2	Common Radiator electrode
3	Common Radiator electrode
4	Feed point for 2.4GHz/5.5GHz
5	Dummy pad
6	Dummy pad

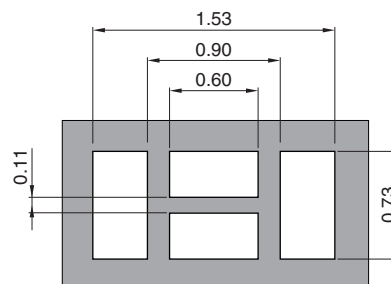
Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

SOLDER RESIST PATTERN



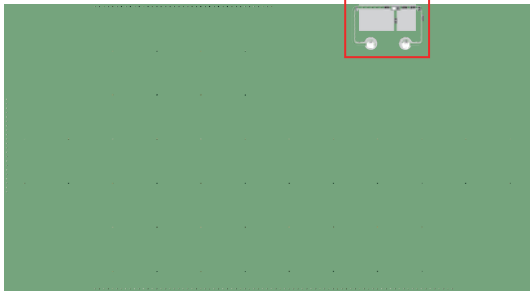
Dimensions in mm

○ RoHS Directive Compliant Product: See the following for more details. <https://product.tdk.com/info/en/environment/rohs/index.html>

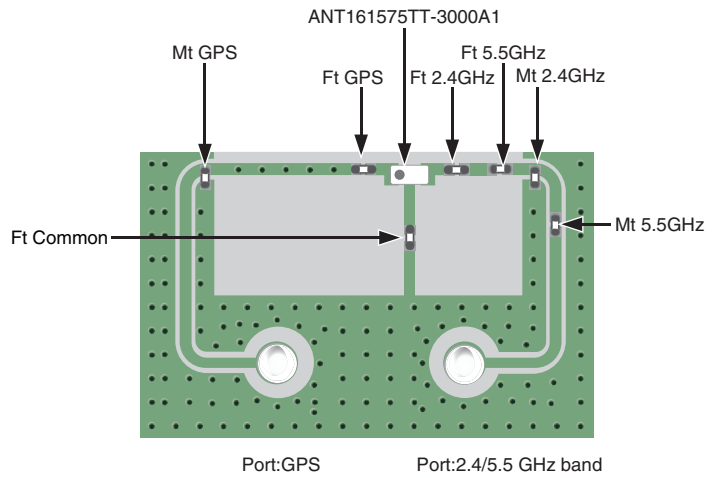
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EVALUATION BOARD

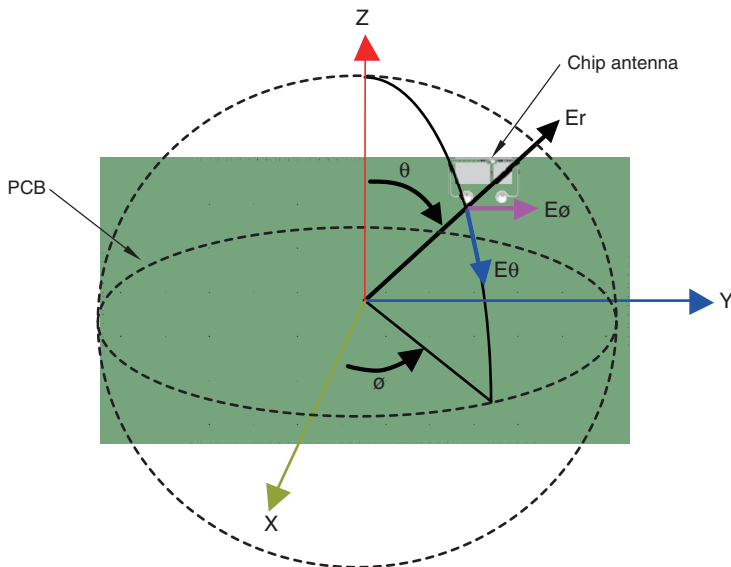


PCB size : 120mm x 65mm x 1mm
Antenna area : 13 x 6 mm



	Component P/N
Ft GPS	43pF
Mt GPS	1.5nH(MLG0603P1N5:TDK)
Ft 2.4GHz	7.5pF
Ft 5.5GHz	0.6nH(MLG0603P0N6C:TDK)
Mt 2.4GHz	2.7nH(MLG0603P2N7C:TDK)
Mt 5.5GHz	1.5nH(MLG0603P1N5C:TDK)
Ft Common	0Ω

Measurement condition for Radiation Pattern



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ELECTRICAL CHARACTERISTICS

Item	Frequency Range (MHz)	Min.	Typ.	Max.
VSWR	1574 to 1577	—	1.20	4.0
	2400 to 2484	—	1.81	4.0
	5150 to 5850	—	3.26	4.0
Polarization			Linear	
PCB size (mm)			120×65	
Antenna keep-out area (mm)			13×6	
Characteristic Impedance (Ω)			50 (Nominal)	

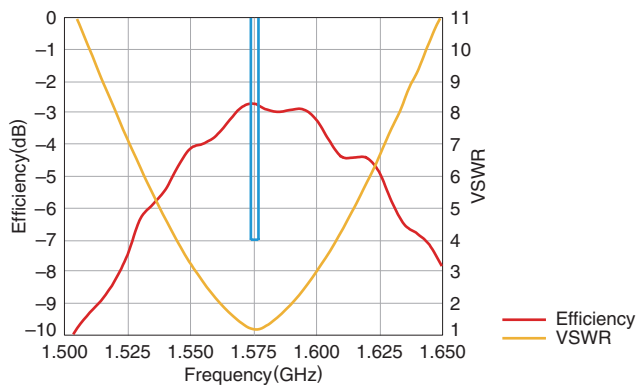
· This is typical antenna performance with the standard PCB.

TEMPERATURE RANGE

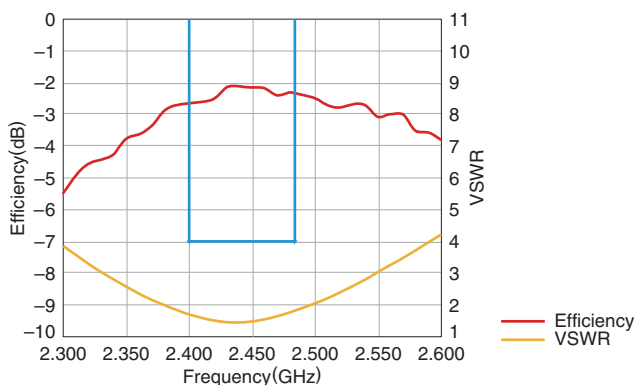
Operating temperature (°C)	Storage temperature (°C)
-40 to +85	-40 to +85

FREQUENCY CHARACTERISTICS

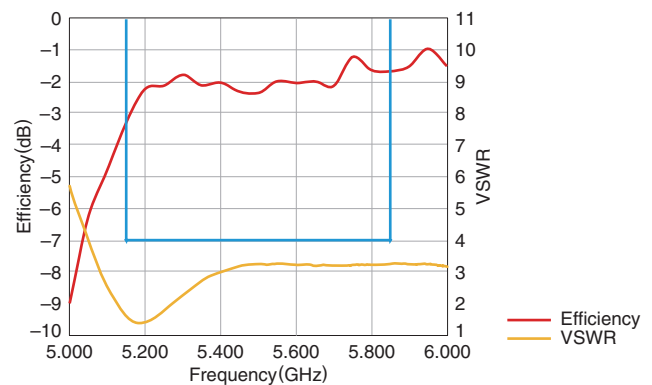
GPS BAND



2.4GHz BAND



5.5GHz WLAN BAND



• Tested antenna has been soldered. Evaluation board size is 120x65x1 mm.

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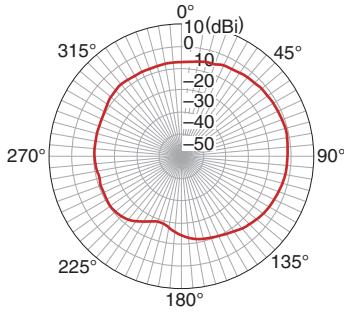
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RADIATION PATTERNS

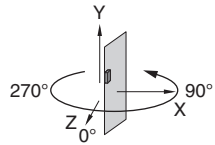
GPS BAND

RHCP

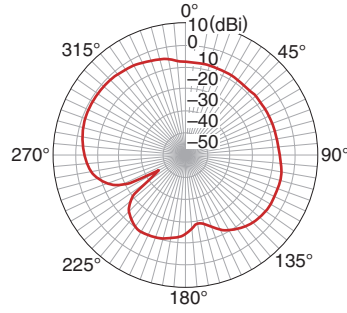
Z-X plane



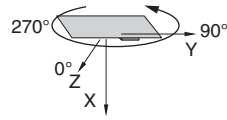
Frequency(GHz)	1.5755
Average(dBic)	-6.8
Maximum(dBic)	-2.3
Minimum(dBic)	-18.7



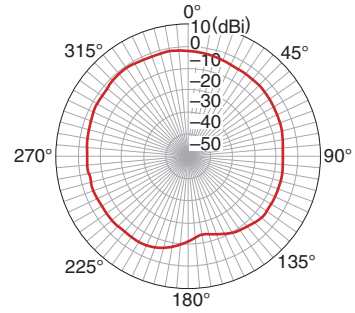
Z-Y plane



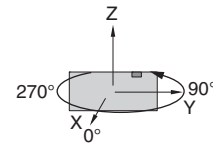
Frequency(GHz)	1.5755
Average(dBic)	-6.8
Maximum(dBic)	-2.3
Minimum(dBic)	-36.8



X-Y plane



Frequency(GHz)	1.5755
Average(dBic)	-4.9
Maximum(dBic)	-1.6
Minimum(dBic)	-13.7



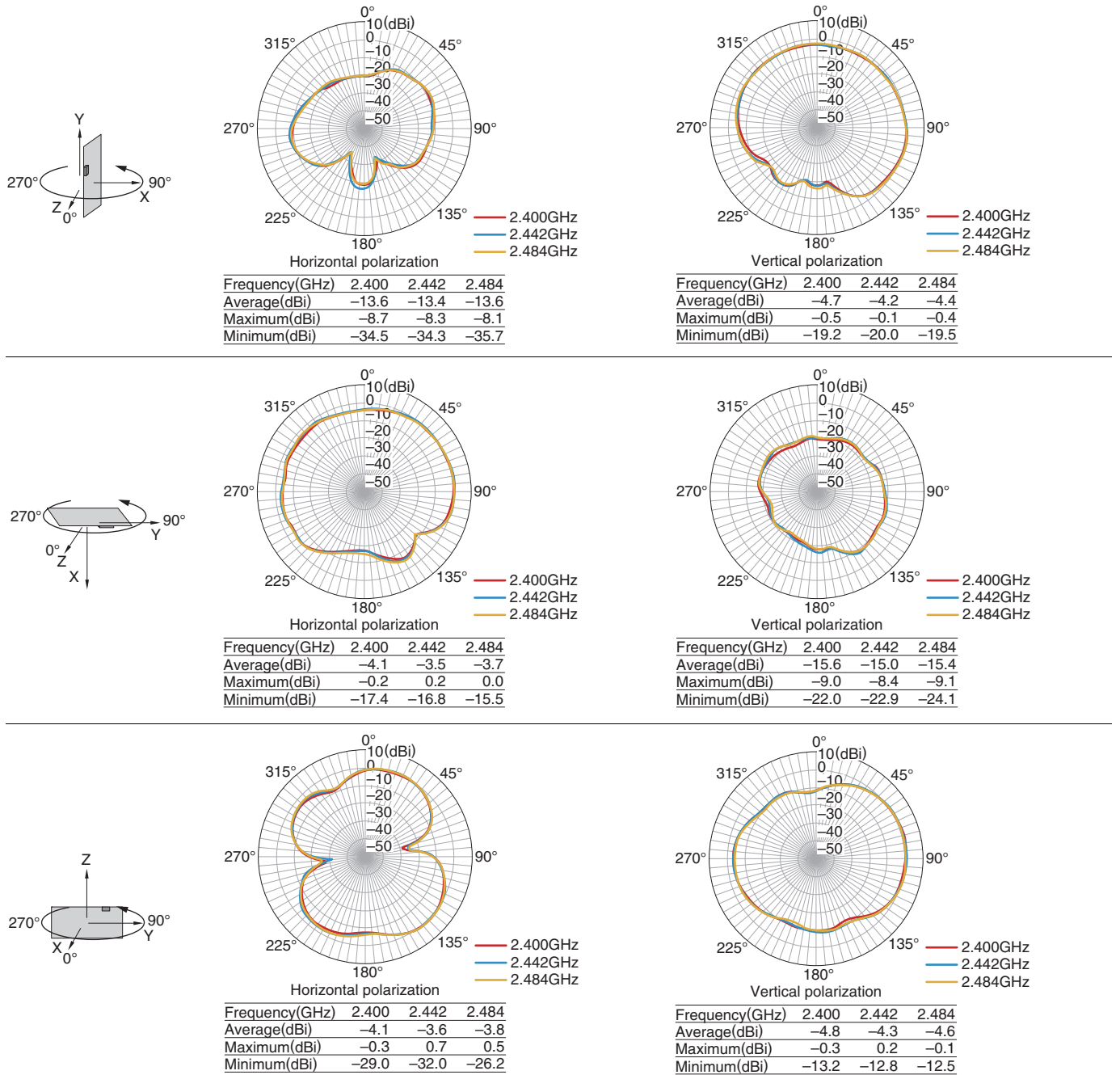
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RADIATION PATTERNS

2.4GHz ISM BAND



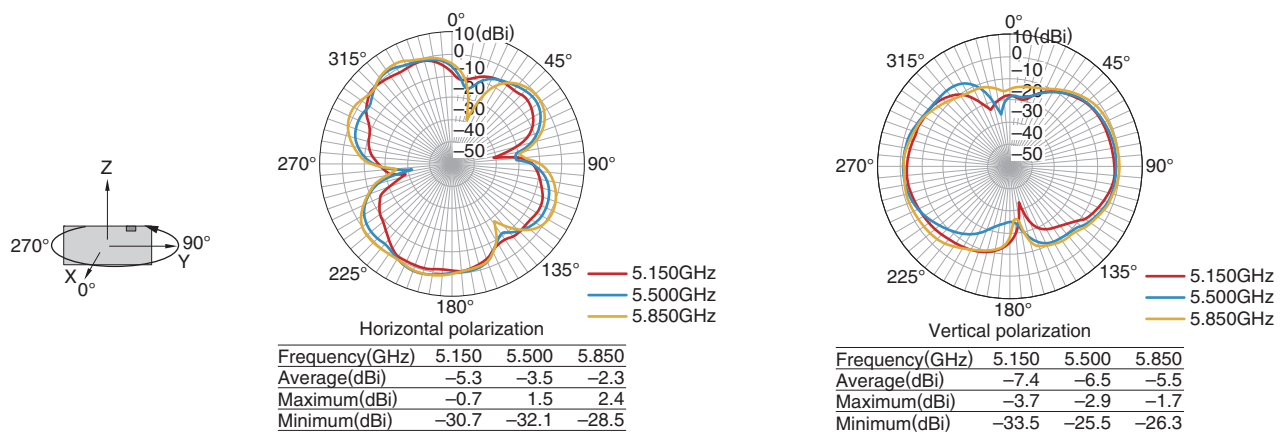
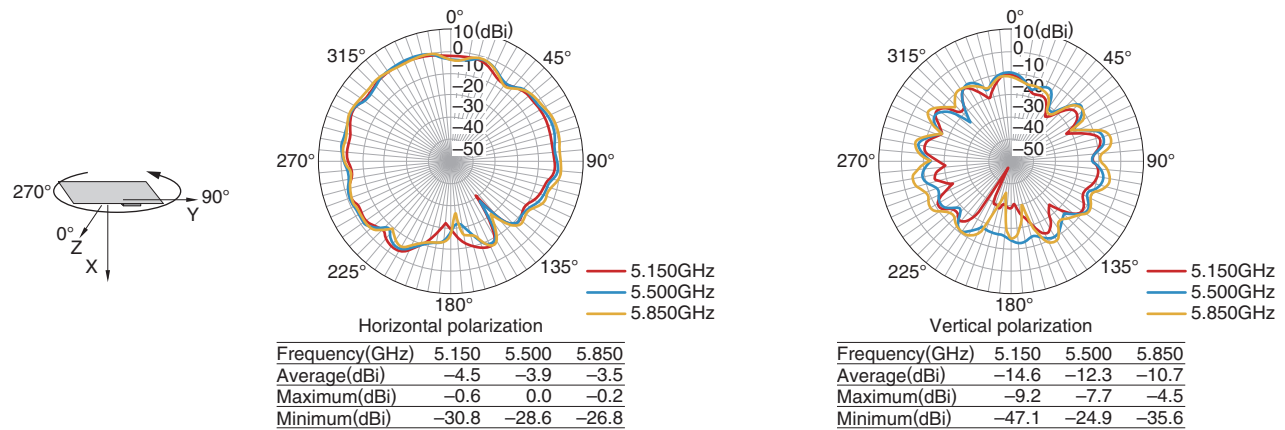
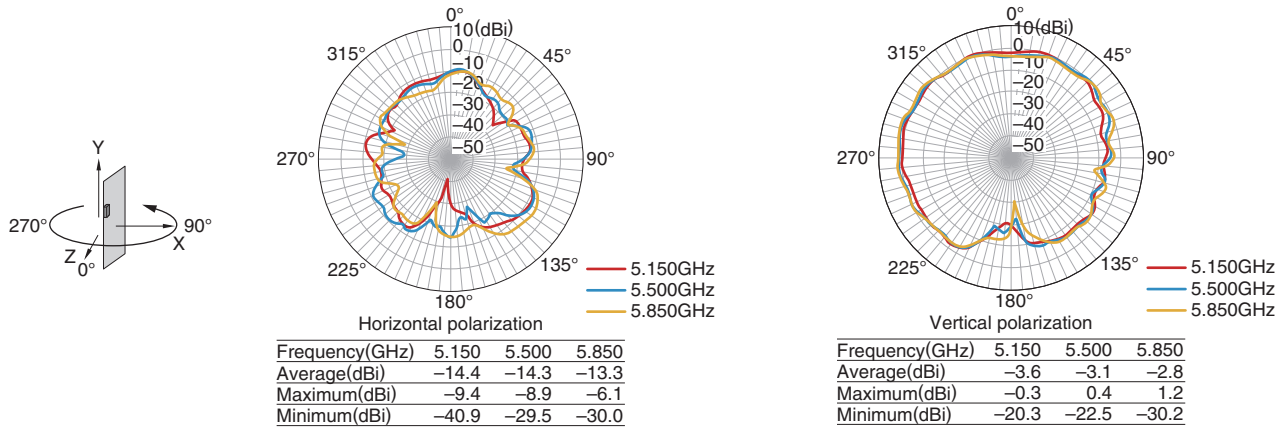
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RADIATION PATTERNS

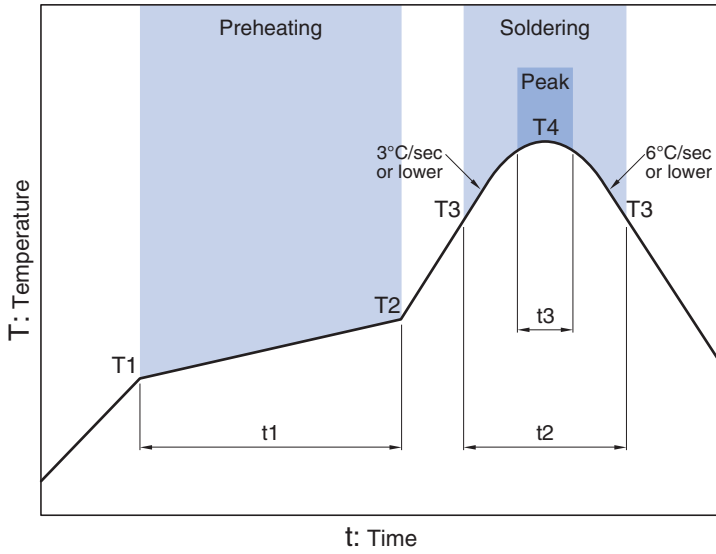
5.5GHz BAND



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RECOMMENDED REFLOW PROFILE



Preheating			Soldering											
Temp.	Time		Critical zone (T3 to T4)		Peak									
T1	T2	t1	Temp.	Time	Temp.	Time								
T3	150°C	200°C	60 to 120sec	T3	t2	T4	t3*				217°C	60 to 120sec	240 to 260°C	30sec max.
150°C	200°C	60 to 120sec	T3	t2	T4	t3*								
			217°C	60 to 120sec	240 to 260°C	30sec max.								

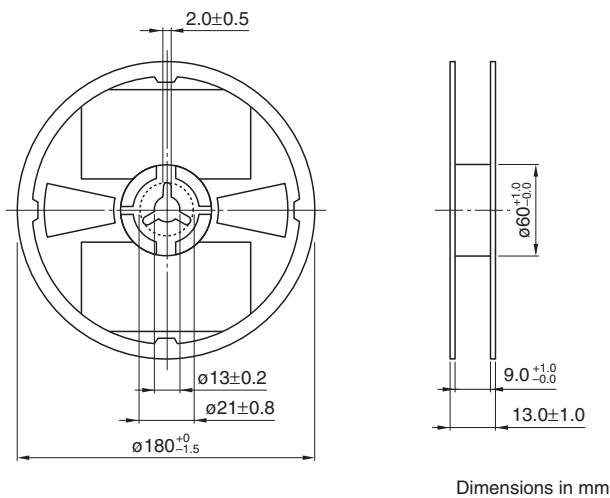
* t3 : Time within 5°C of actual peak temperature
 The maximum number of reflow is 3.

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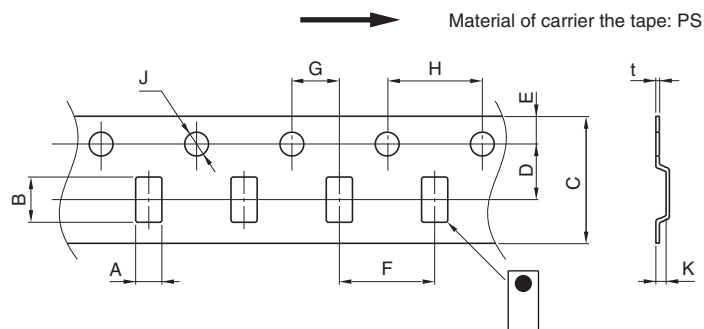
PACKAGING STYLE

REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

A	B	C	D	E	F	G	H	J	K	t
0.97±0.05	1.8±0.05	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	1.5+0.1/-0	0.55max.	0.25±0.05

PACKAGE QUANTITY

Standard package quantity (pieces/reel)
4,000

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REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

REMINDERS

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this catalog.

- | | |
|---|--|
| (1) Aerospace/Aviation equipment | (8) Public information-processing equipment |
| (2) Transportation equipment (cars, electric trains, ships, etc.) | (9) Military equipment |
| (3) Medical equipment | (10) Electric heating apparatus, burning equipment |
| (4) Power-generation control equipment | (11) Disaster prevention/crime prevention equipment |
| (5) Atomic energy-related equipment | (12) Safety equipment |
| (6) Seabed equipment | (13) Other applications that are not considered general-purpose applications |
| (7) Transportation control equipment | |

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.