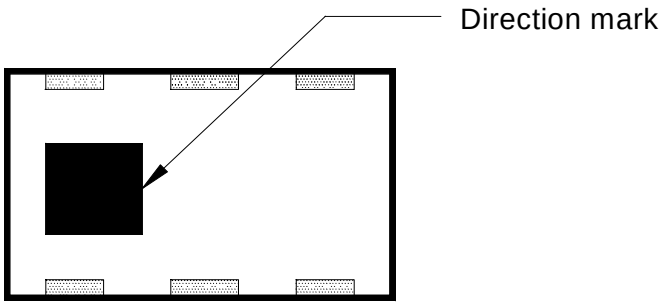
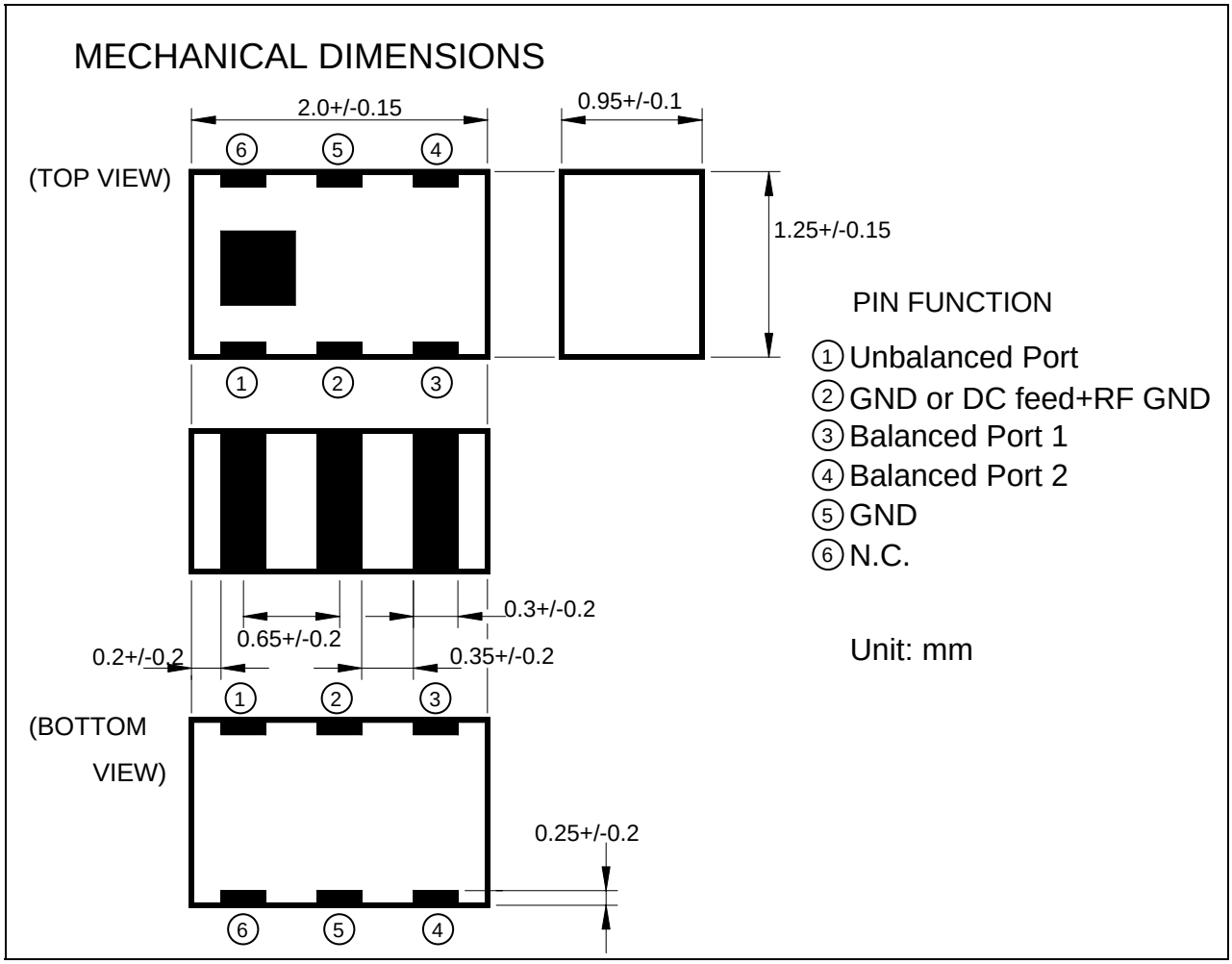
BALUN TRANSFORMER (TDK Part Number: HHM1522E1) Specification

1. Marking

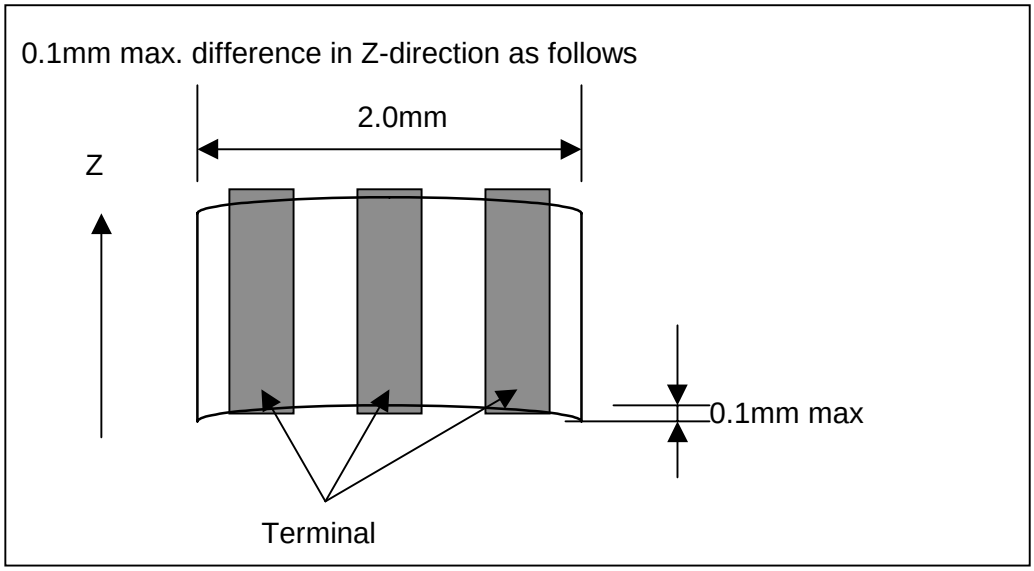


2. Mechanical Outline

Package:	Surface mount package
Delivery medium:	Tape on reel
Soldering method:	IR-reflow
Size:	2.0 x 1.25mm typ.
Height:	0.95mm typ.



3. Coplanarity of HHM1522E1



Each terminal extends the full of the HHM1522E1. Hence any coplanarity deviation between terminals is due to curvature in the substrate. TDK guarantees that the edge of each terminal is within 0.1mm of the horizontal plane.

4. Environment (Temperature & Humidity)

4-1 Operating & Storage condition

Storage temperature range: -40 ~ +85 ^{o}C
Operating temperature range: -40 ~ +85 ^{o}C
Humidity: 0 ~ 90 % RH (Max. wet bulb temperature 38^{o}C)

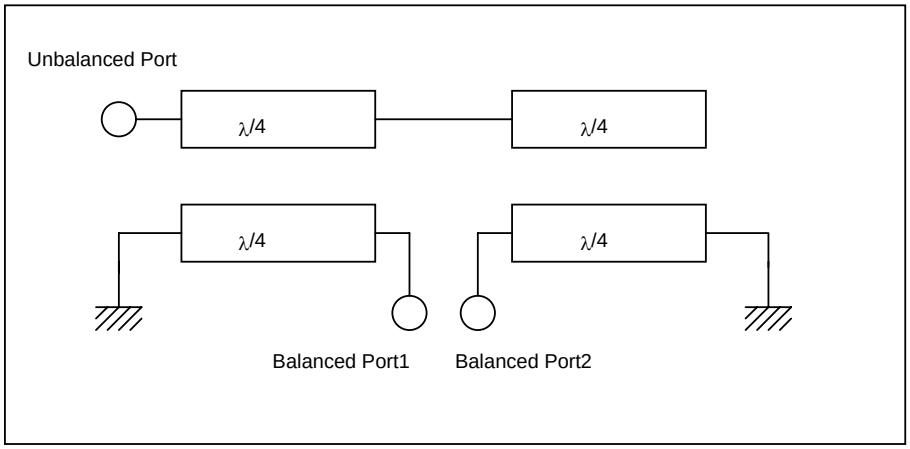
4-2 Storage condition before soldering

Temperature: +5 ~ +30 ^{o}C
Humidity: 20 ~ 70 % RH
Term of storage: Within 6 months
Baking: Unnecessary

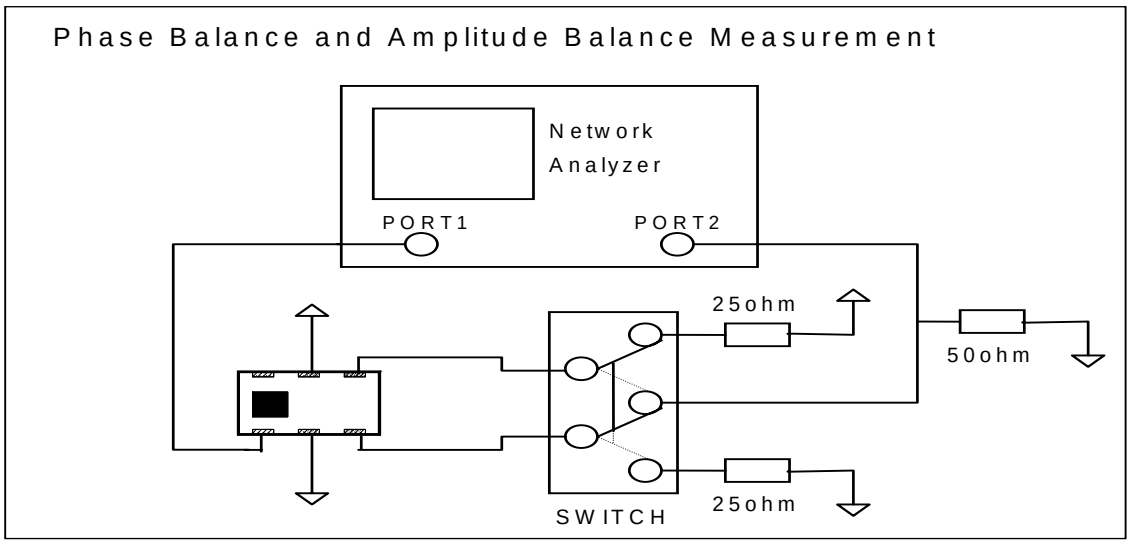
5. Electrical Specification

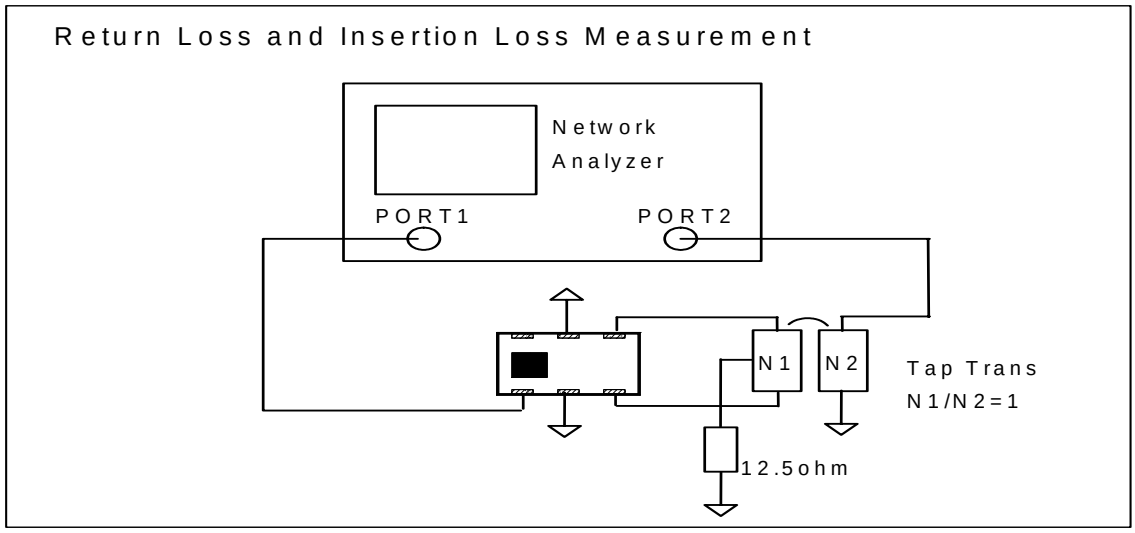
Item	Value
Frequency	860-960MHz
Insertion loss	1.2 dB Max
Phase Difference at Balanced Port	180^{o}+/-10^{o}
Amplitude Imbalance at Balanced Port	0+/-1 dB.
Unbalanced Port Return Loss	10dB Min
Unbalanced Port Impedance	50 ohm
Balanced Port Impedance	50 ohm
Power Capacity	0.5W Max.

6. Equivalent Circuit

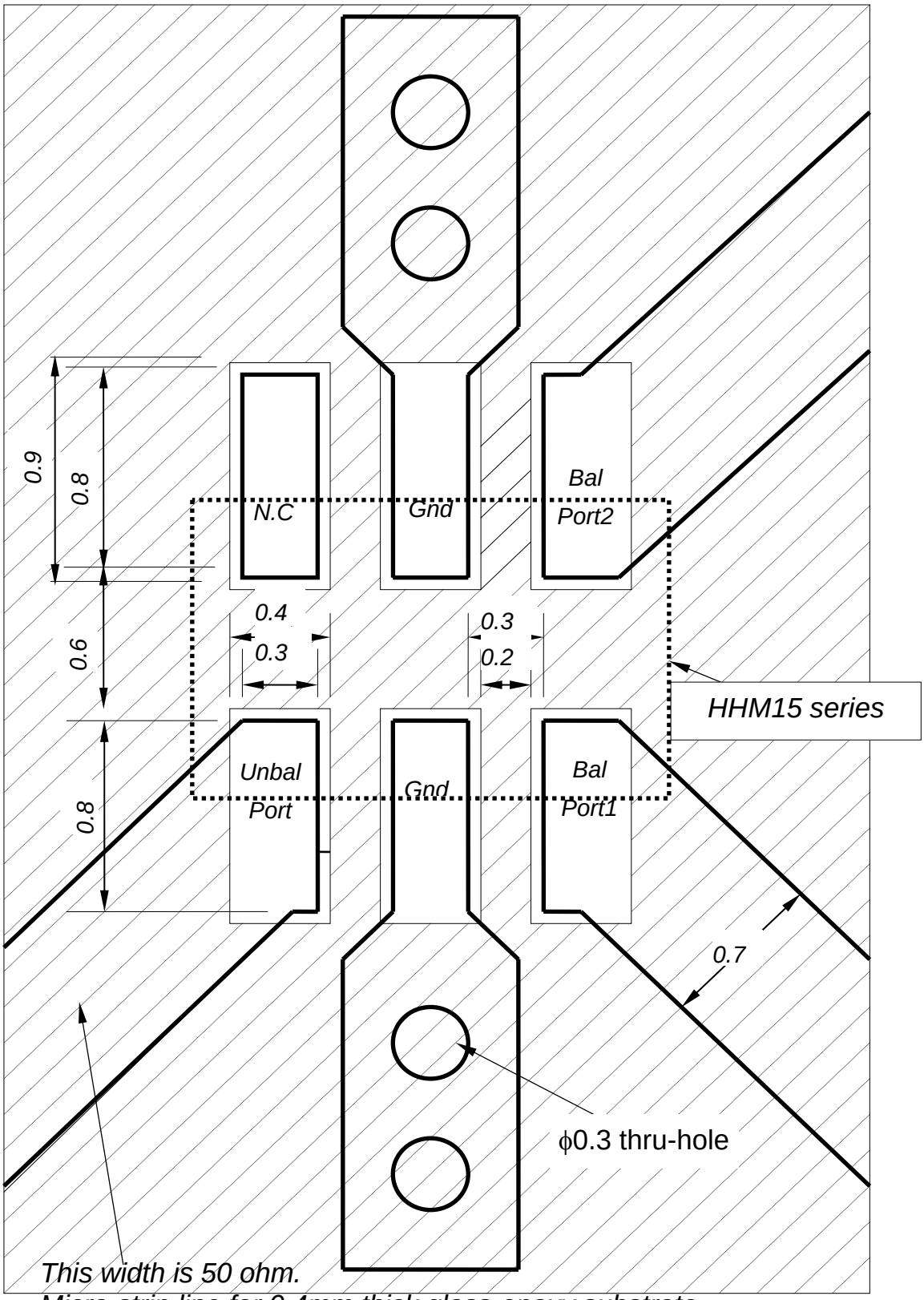


7. Test Circuit





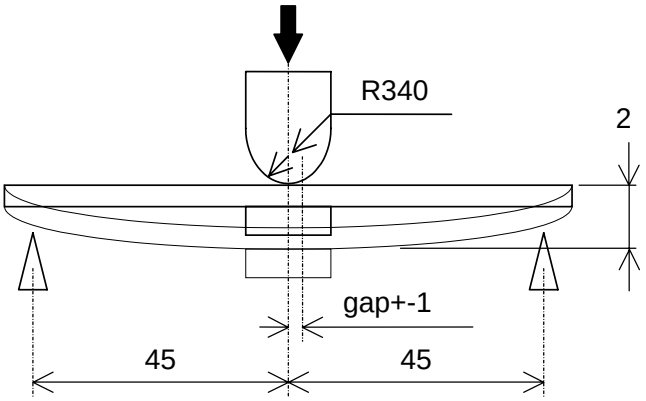
8. Recommended PCB Pattern

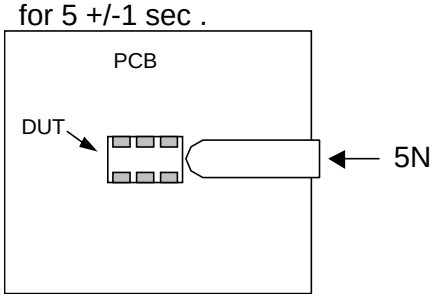


9. Environmental and quality proposal

The BALUN satisfies the electrical specification after the following tests.
(When measured after two hours in normal conditions)

Temperature characteristics:	All data initially taken at +25°C, then repeated at -40°C and again at +85°C.
Heat proof:	+85 °C+/-2 °C for 500 hours
Cold proof:	-40 °C +/-2 °C or 500 hours
Moisture proof:	+60 °C +/-2 °C, 90~95% R.H. for 500 hours
Heat shock:	-40 ~ +85 °C for 96 cycles each cycle being 30 min
Vibration:	10-500Hz vibration frequency with 1.52mmp-p amplitude for two hours in x,y,z directions
Mechanical shock:	1.Acceleration 1000m/s2 2.Direction X, Y, Z ,X',Y',Z',axes 3.Time 6ms duration and 3 times in each direction
Solderability	The dipped surface of the terminal shall be at least 75% covered with solder after dipped in solder bath of 235 ^{o}C+/-3 °C for 3+/-0.5 sec. Remark solder: Sn/Pb=60/40 Remark flux: Resin 25%, Alcohol 75%
Solder heat shock:	It shall be possible to hot air reflow the components twice with a temperature profile shown below.
Drop shock:	Dropped onto steel plate or concrete from 100cm height three times .
Bending test:	Solder specimen components on the test printed circuit board(L:100 x w:40 x t:0.8mm) in appended recommended PCB pattern Apply the load in direction of the arrow until bending reaches 2mm for 5+/-1 sec.

<table>
<tr><td></td><td> 

Unit:mm</td></tr>
<tr><td>Board adhesion
(Push test):</td><td>Solder specimen components on the test printed circuit board(L:100 x w:40 x t:0.8mm) in appended recommended PCB pattern Apply the load in direction of the arrow until 5N
for 5 +/-1 sec .
 
</td></tr>
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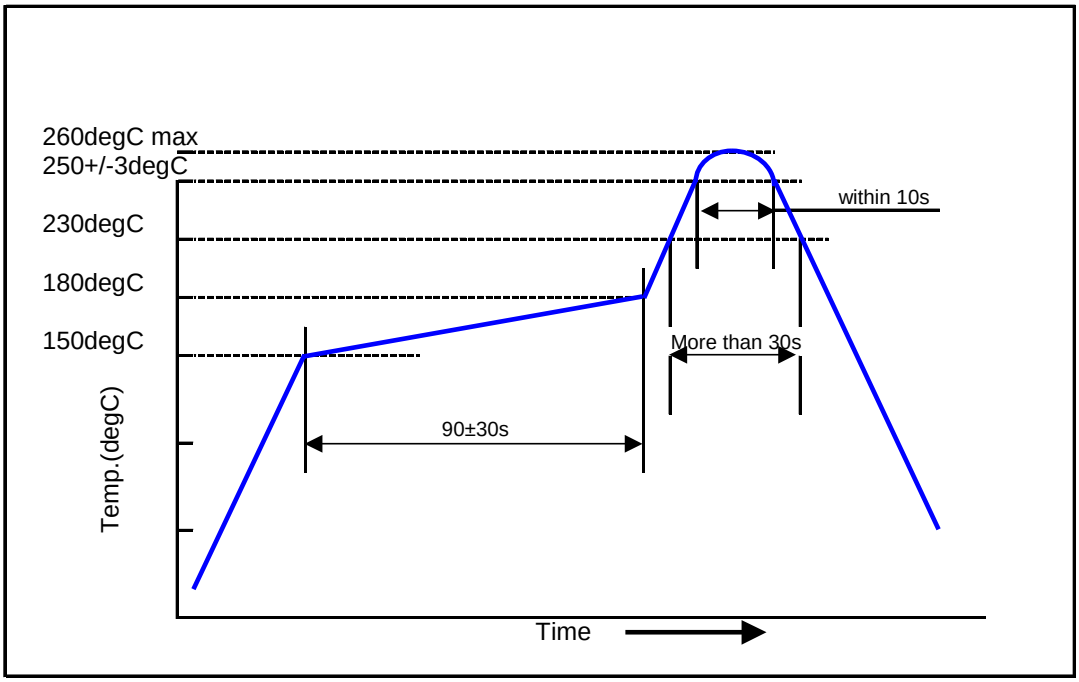
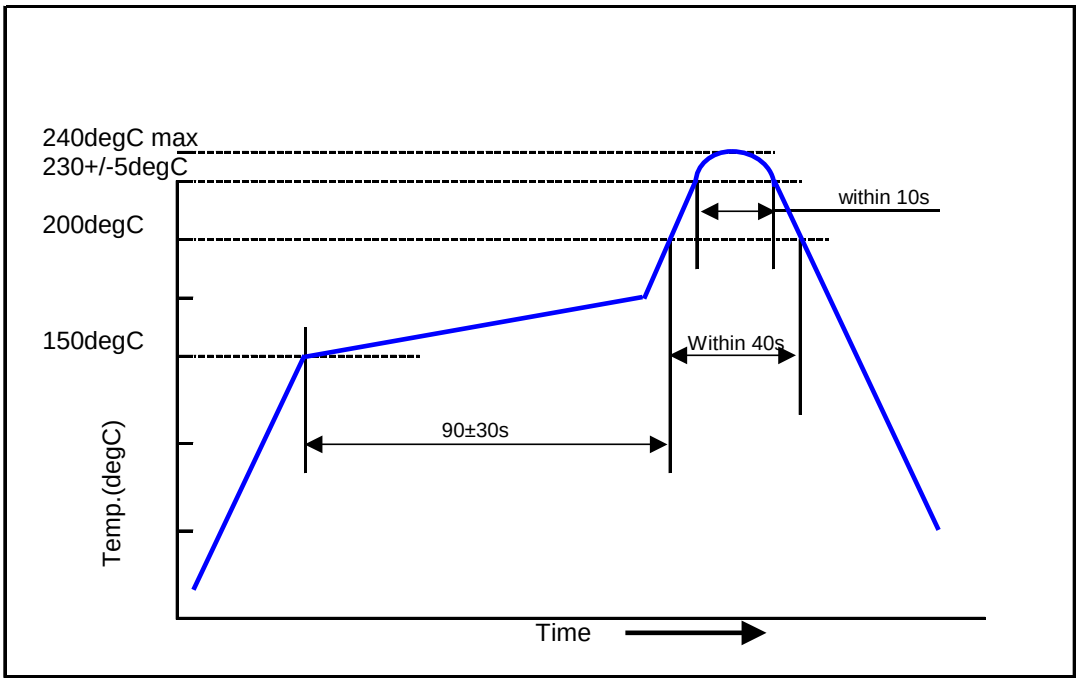
10. Recommended reflowing temperature profile

A. When using Pb free solder

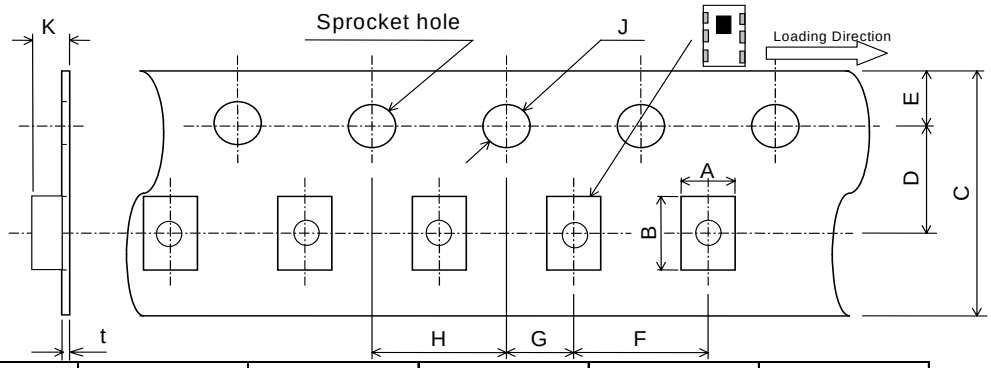


B.When using Sn-Pb eutectic solder



11. Packing

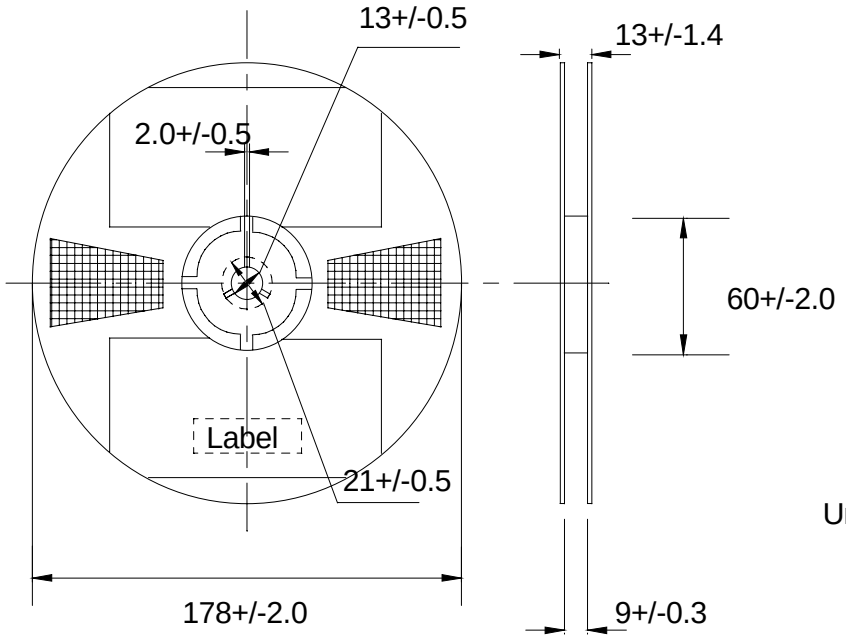
Carrier tape



A	B	C	D	E	F
1.5+/-0.2	2.2+/-0.2	8.0+/-0.3	3.5+/-0.05	1.75+/-0.1	4.0+/-0.1
G	H	J	K	t	
2.0+/-0.05	4.0+/-0.1	1.5+0.1/0	1.2 MAX	0.3 max	

Unit : mm

Reel dimensions



Unit: mm

Standard packaging quantities

2000pcs/reel

12. Other

This product is designed to be used with ordinary electronic equipment or devices, such as

audio visual equipment
office-automation equipment
communications devices
electrical appliances
electronic toys

If you want to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life, such as

medical instruments
aerospace machinery
military applications
nuclear-reactor controllers
fuel controllers
other safety devices

Please be sure to consult with our sales representative in advance.