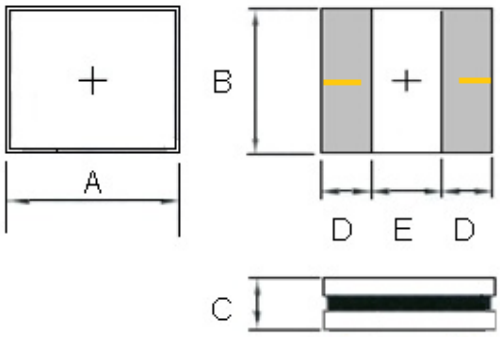
Version: 1.0

COIL SPECIFICATION

RoHS COMPLIANT

ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

PACKING DIMENSIONS (mm)



PHN252012	Dimensions
A	2.5 ± 0.3
B	2.0 ± 0.35
C	1.3 MAX
D	0.85 REF
E	0.80 REF

EXPLANATION OF PART NUMBERS

1	2	3	4	5	6	7	8	9	10	11
P	H	N	25	20	12	T	- 1	R	0	M
	①			②		③		④		⑤

1. Product Name
2. Dimensions
3. Material
4. Inductance Code
5. Inductance Tolerance (N = 30% , M = 20%)

ELECTRICAL CHARACTERISTICS

HUNGTRON Part Number	Inductance (uH)	Test Frequency (Hz)	DCR (Ω) typ.	DCR (Ω) Max.	I sat (A) typ.	I sat (A) Max.	I rms (A) typ	I rms (A) Max.
PHN252012T-R33□	0.33	1M	0.022	0.032	6.80	6.5	4.7	4.3
PHN252012T-R47□	0.47	1M	0.025	0.035	6.30	6	4.3	4
PHN252012T-1R0□	1	1M	0.047	0.055	4.80	4.5	3.5	3.2
PHN252012T-1R5□	1.5	1M	0.065	0.072	4.10	3.8	2.7	2.4
PHN252012T-2R2□	2.2	1M	0.09	0.108	3.30	3.1	2.4	2.3
PHN252012T-3R3□	3.3	1M	0.14	0.165	2.60	2.4	2.2	2
PHN252012T-4R7□	4.7	1M	0.2	0.3	2.20	2.10	2.00	1.90
PHN252012T-100□	10	1M	0.45	0.55	1.40	1.30	1.10	1.00

Storage temp. and humidity : -40 to +85℃ ,70%RH ma

Note：

- ●When ordering please specify tolerance and packaging codes.
- ●L:Agilent/HP4291B+Agilent/HP16197A, 1MHz/200mV
- ●RDC:Digital Milliohm Meter Agilent/HP4338B
- ●Isat & Irms : Microtest 6377, 1MHz/200mV
- ●Isat & Irms : Microtest 6377, 1MHz/200mV

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CHARACTERISTICS

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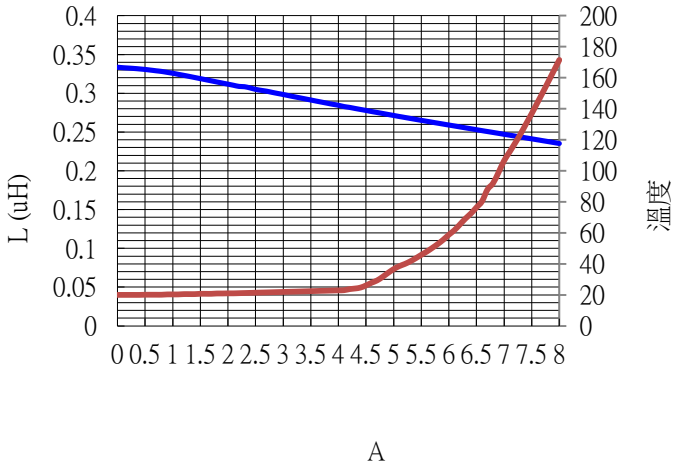
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

Note：

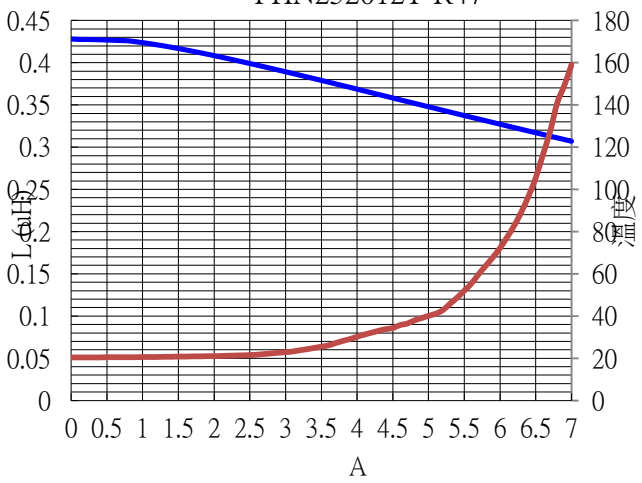
- ●Isat for Inductance drop30% from its value without current typical.
- ●Irms for a 40℃ rise above 25℃ ambient typical.
- ●If Use wave soldering is there will be some risk.(Crack、unwitting& Mark Shed
- ●Re-flow soldering temperatures below 240 degrees,there will be unwitting risk
- ●Operating Temperature Range -40℃ to +125℃(Including self-temperature ris
- ●When total area of exposed wire occurring to each sides is not greater than 75% of coating resin area, that is acceptable.

PERFORMANCE CURVES

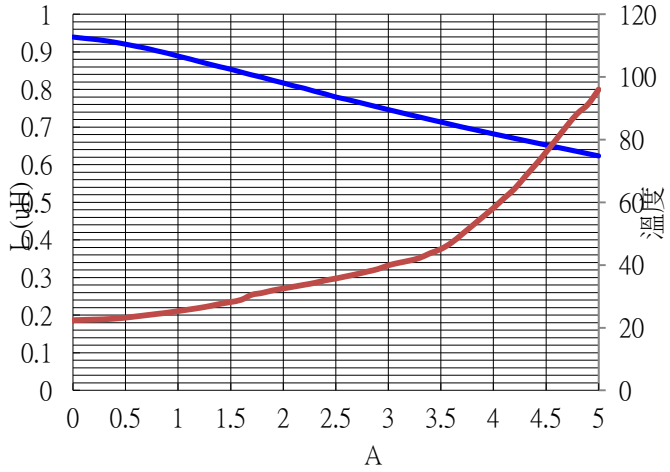
PHN252012T-R33



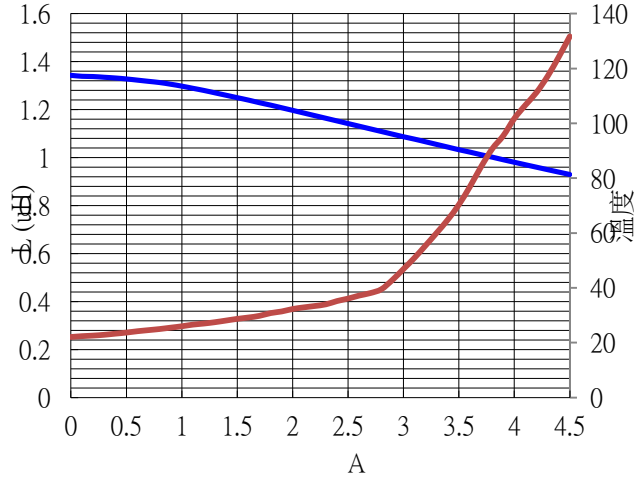
PHN252012T-R47



PHN252012T-1R0



PHN252012T-1R5



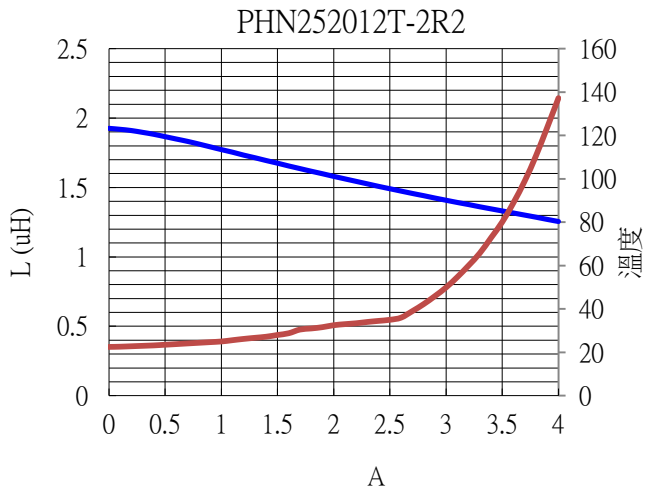
Version: 1.0

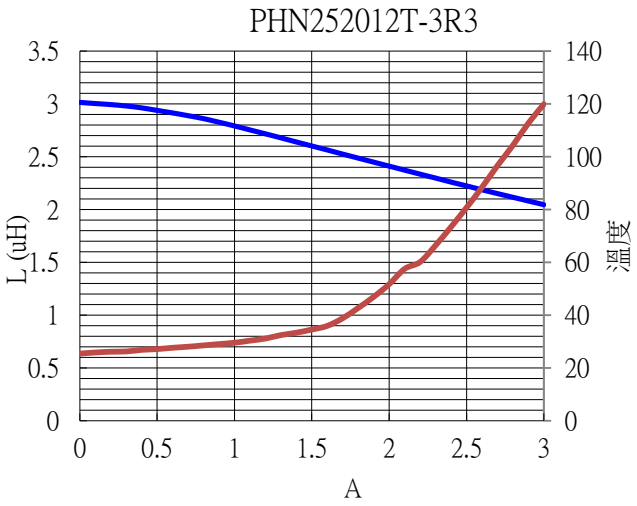
CHARACTERISTICS

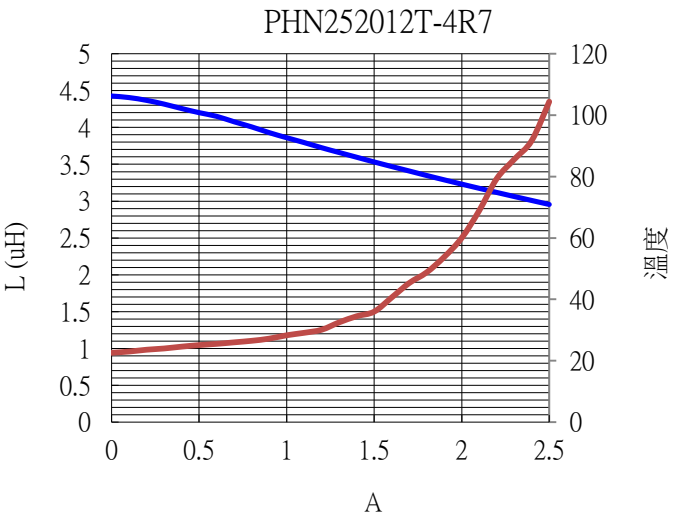
RoHS COMPLIANT

ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

PERFORMANCE CURVES







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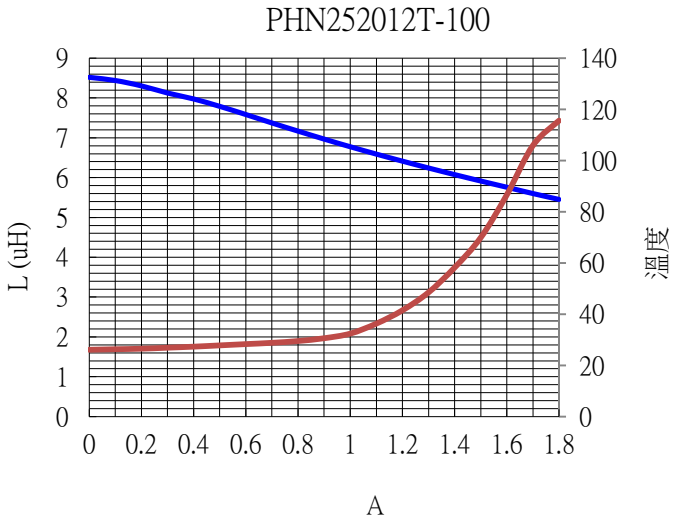
CHARACTERISTICS

RoHS COMPLIANT

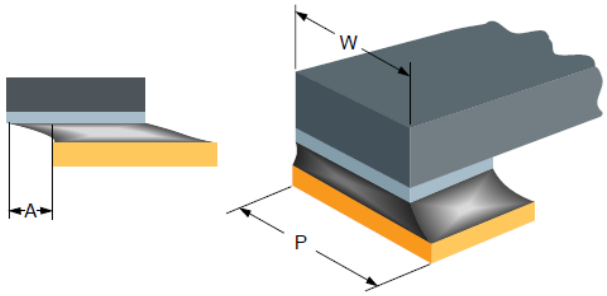
ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

PERFORMANCE CURVES



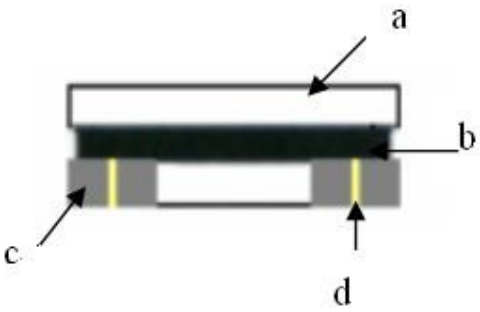
Overhang acceptance description

Side overhang (A) is less than or equal to 20% width ofcomponent termination area (W) or 20% width of land (P),



Material List

No.	Description	Specification
a.	Core	Metal Core
b.	Coating	Epoxy
c	Termination	Tin Pb Free
d	Wire	Enameled Copper Wire



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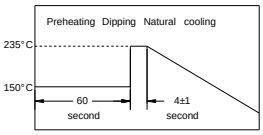
CHARACTERISTICS

RoHS COMPLIANT

ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

Reliability and Test Condition

Item	Performance	Test Condition
Operating Temperature	-40~+105℃(Including self-temperature rise)	
Electrical Performance Test		
Inductance L	Refer to standard electrical characteristic list	Agilent-4291, Agilent-4287 Agilent-4192, Agilent-4285
Q		
SRF		Agilent-4291
DC Resistance		Agilent-4338
Rated Current	Base on temp. rise & △L/L0A≦30%.	Saturation DC Current (Isat) will cause L0 to drop approximately △L(%).
Temperature Rise Test	ΔT 40℃Max	Heat Rated Current (Irms) Willcausethecoil temperature rise approximately △T(℃) without core loss. 1.Applied the allowed DC current. 2.Temperature measured by digitalsurfacethermometer
Mechanical Performance Test		
Resistance to Soldering Heat MIL-STD-202 METHOD 210	1. Inductors shall be no evidence of electrical and mechanical damage. 2. Inductance : within ±10% of initial value	Temp.: 260±5℃ Time: 10±1.0 Sec
Solderability Test ANSI/J-STD-002	More than 95% of terminal electrode should be covered with solder.	 After fluxing,component shall be dipped in a melted solder bath at 235±5℃ for 4±1seconds.

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CHARACTERISTICS

RoHS COMPLIANT

ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

Reliability and Test Condition

Item	Performance	Test Condition
Reliability Test		
Humidity Test MIL-STD-202 METHOD 103	1.Visual examination : No mechanical damage 2.Inductance : within±10% of initial value	1.Temperature : 40±2℃ 2.Humidity : 90 ~ 95% 3.Time : 500 ±8hrs 4.Measured at room temperature after placing for 2 to 3 hrs
Thermal Shock Test MIL-STD-202 METHOD 107		
High Temperature Life Test MIL-STD-202 METHOD 108		1.Temperature : 85±2℃ 2.Time : 500±8hrs 3.Measured at room temperature after placing for 2to3 hrs
Humidity Resistance Test MIL-STD-202 METHOD 103	Conditions for 1 cycle Step / Temperature(℃) / Times(min.) 1 / -55±2 / 30±3 2 / Room / Within5 2 / 85±5 / 30±3 Total:100 cycles Measured at room temperature after placing for 2 to 3 hrs	Temperature:40±2℃ Humidity:90~ 95% 3.Time:500±8hr. 4.Recovery:2 to 3hrs of recovery under the standard condition after the removal from test chamber.
Low temperature Storage Test JESD22-A119		1.Temperature : -40±2℃ 2.Time : 500±8hrs 3.Measured at room temperature after placing for 2to3 hrs
Random Vibration Test MIL-STD-202 Method 204	Appearance: Cracking, shipping and any other defects harmful to the characteristics should not be allowed. Inductance : within±10%	Frequency: 10-55-10Hz for 15 min. Amplitude: 1.52mm Directions and times: X, Y, Z directions for 15 min. This cycle shall be performed 12 times in each of three mutually perpendicular directions (Total 9hours).

CHARACTERISTICS

RoHS COMPLIANT

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PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

Soldering and Mounting

Soldering

Mildly activated rosin fluxes are preferred.terminations are suitable for re-flow soldering systems.
If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

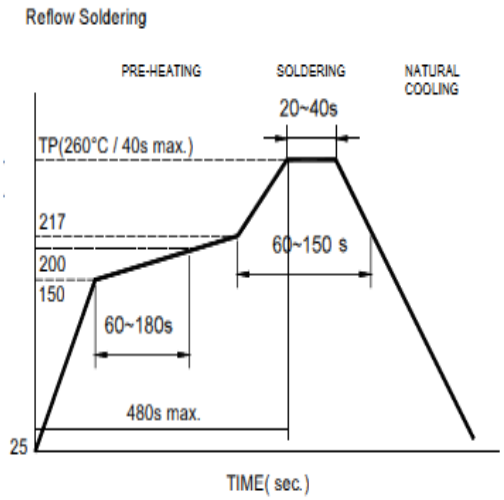
Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

Soldering Iron(Figure 2):

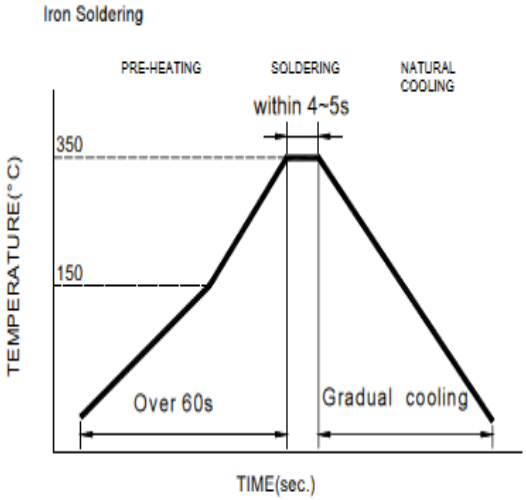
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150℃
- 355℃ tip temperature (max)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (max)
- Use a 20 watt soldering iron with tip diameter of 1.0mm



Reflow times: 3 times max.

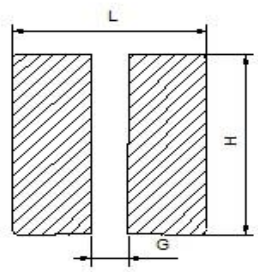
Fig.1



Iron Soldering times: 1 times max.

Fig.2

Recommended PC Board Pattern



L(mm)	G(mm)	H(mm)
2.7	0.8	2.2

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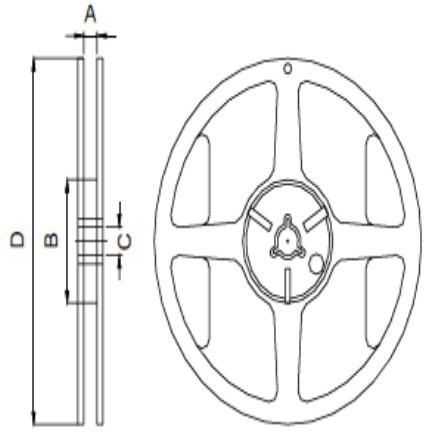
PACKING FOR SMD

RoHS COMPLIANT

ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

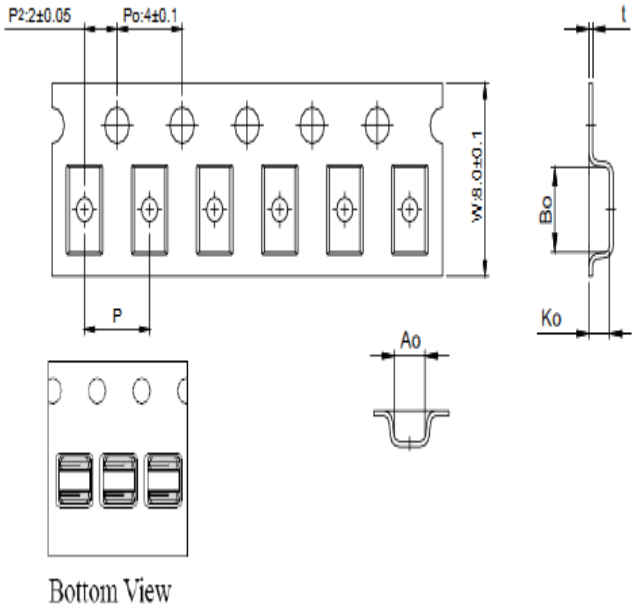
Packaging Information

Reel Dimension



7"x8mm

Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	8.4±1.0	50 min.	13±0.8	178±2



Bottom View

Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
PIN	252012	2.85±0.1	2.40±0.1	1.35±0.1	4.0±0.1	0.23±0.05

PACKING FOR SMD

RoHS COMPLIANT

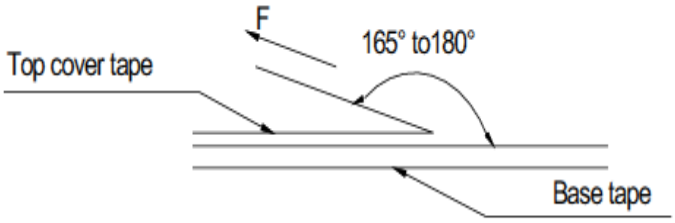
ITEM P/N	PHN252012T-SERIES	TEST INSTRUMENT	Agilent4291B / Agilent4338B
PRODUCT	Power Inductor	TEST FREQUENCY	1 MHz / 0.2V

Packaging Information

Packaging Quantity

Chip size	252012
Chip / Reel	2000

Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (℃)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

- Storage Conditions

  To maintain the solderability of terminal electrodes:

  1. products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

- Transportation

  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.