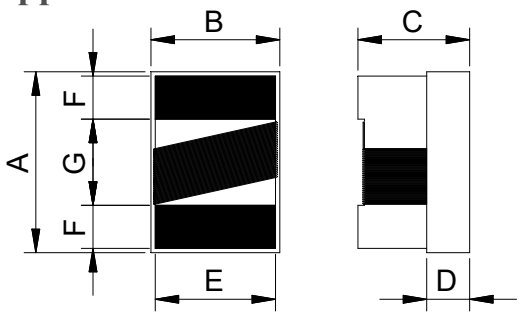
## Features

* RoHS Compliant
* Ceramic body and wire wound construction provide high SRFs.
* These ultra - compact inductors provided exceptional Q values, even at high frequencies.
* Their ceramic construction delivers the highest possible SRFs as well as excellent Q values.
* The non-magnetic coil form also assures the utmost in thermal stability,predictability and batch consistency.
* ECS series is standard parts for RF designers.

## Applications

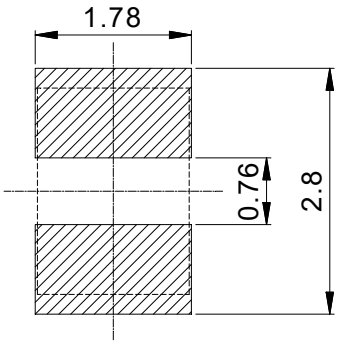
* cellular phone,GPS receiver,Base Station,Repeater,Wireless LAN/Mouse/Keyboarf/earphone,remote control, security system and other RF modules.

## Appearance and Dimensions

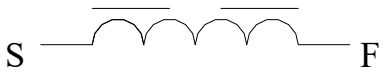



| Dimensions(mm) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Series | A | B | C | D | E | F | G |
| ECS0805 | 2.35max. | 1.73max. | 1.52max. | 0.71typ. | 1.27typ. | 0.51typ. | 1.02typ. |

## Land Pattern Dimensions




## Circuit Diagram




## Product Identification

ECS 0805 - 4N7 J - S
① ② ③ ④ ⑤

① Product Symbol
② Dimensions
③ Inductance Value (4N7:4.7nH; 47N:47nH; R47:470nH; 4R7:4700nH)
④ Inductance Tolerance (S:±0.3; G:±2%; J:±5%; K:±10%; M:±20%)
⑤ Intemal No

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https://www.lyetec.com E-mail：sales@lyetec.com

## Electrical Characteristics

| Part No. | Inductance | Tol. | Test Fre. | Q min. | Test Fre. | Self-resonant Frequency min. | DC Resistance max. | Heat Rating Current max. |
|---|---|---|---|---|---|---|---|---|
| Unit | nH | % | MHz | - | MHz | MHz | Ω | mA |
| Symbol | L | - | - | - | - | - | $R_{DC}$ | $I_{RMS}$ |
| ECS0805-2N2☐-S | 2.200 | ±10 | 250 | 50 | 1000 | 7900 | 0.06 | 800 |
| ECS0805-2N7☐-S | 2.700 | ±5 | 250 | 50 | 1000 | 7900 | 0.06 | 800 |
| ECS0805-3N0☐-S | 3.000 | ±5 | 250 | 40 | 1500 | 7900 | 0.06 | 800 |
| ECS0805-3N3☐-S | 3.300 | ±5 | 250 | 40 | 1500 | 7900 | 0.08 | 600 |
| ECS0805-3N6☐-S | 3.600 | ±5 | 250 | 20 | 1000 | 7900 | 0.20 | 200 |
| ECS0805-3N9☐-S | 3.900 | ±5 | 250 | 20 | 1000 | 7900 | 0.20 | 150 |
| ECS0805-4N7☐-S | 4.700 | ±5 | 250 | 35 | 1000 | 6200 | 0.08 | 600 |
| ECS0805-5N1☐-S | 5.100 | ±5 | 250 | 50 | 1000 | 6200 | 0.08 | 600 |
| ECS0805-5N6☐-S | 5.600 | ±5 | 250 | 65 | 1000 | 5900 | 0.08 | 600 |
| ECS0805-6N2☐-S | 6.200 | ±5 | 250 | 65 | 1000 | 5900 | 0.08 | 600 |
| ECS0805-6N8☐-S | 6.800 | ±5 | 250 | 50 | 1000 | 5600 | 0.11 | 600 |
| ECS0805-7N5☐-S | 7.500 | ±5 | 250 | 50 | 1000 | 4800 | 0.14 | 600 |
| ECS0805-8N2☐-S | 8.200 | ±5 | 250 | 50 | 1000 | 4400 | 0.12 | 600 |
| ECS0805-9N1☐-S | 9.100 | ±5 | 250 | 60 | 500.0 | 4300 | 0.10 | 600 |
| ECS0805-10N☐-S | 10.00 | ±5 | 250 | 60 | 500.0 | 4300 | 0.10 | 600 |
| ECS0805-12N☐-S | 12.00 | ±5 | 250 | 50 | 500.0 | 4000 | 0.15 | 600 |
| ECS0805-15N☐-S | 15.00 | ±5 | 250 | 50 | 500.0 | 3200 | 0.17 | 600 |
| ECS0805-16N☐-S | 16.00 | ±5 | 250 | 50 | 500.0 | 3200 | 0.17 | 600 |
| ECS0805-18N☐-S | 18.00 | ±5 | 250 | 50 | 500.0 | 3100 | 0.20 | 600 |
| ECS0805-20N☐-S | 20.00 | ±5 | 250 | 55 | 500.0 | 2600 | 0.22 | 500 |
| ECS0805-22N☐-S | 22.00 | ±5 | 250 | 55 | 500.0 | 2600 | 0.22 | 500 |
| ECS0805-23N☐-S | 23.00 | ±5 | 250 | 50 | 500.0 | 2400 | 0.22 | 500 |
| ECS0805-24N☐-S | 24.00 | ±5 | 250 | 50 | 500.0 | 2400 | 0.22 | 500 |
| ECS0805-25N☐-S | 25.00 | ±5 | 250 | 50 | 500.0 | 2450 | 0.22 | 500 |
| ECS0805-27N☐-S | 27.00 | ±5 | 250 | 55 | 500.0 | 2580 | 0.25 | 500 |
| ECS0805-30N☐-S | 30.00 | ±5 | 250 | 55 | 500.0 | 2400 | 0.25 | 500 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ECS0805-33N□-S | 33.00 | ±5 | 250 | 60 | 500.0 | 2150 | 0.27 | 500 |
| ECS0805-36N□-S | 36.00 | ±5 | 250 | 55 | 500.0 | 1900 | 0.27 | 500 |
| ECS0805-39N□-S | 39.00 | ±5 | 250 | 60 | 500.0 | 1850 | 0.29 | 500 |
| ECS0805-43N□-S | 43.00 | ±5 | 200 | 60 | 500.0 | 1800 | 0.34 | 500 |
| ECS0805-47N□-S | 47.00 | ±5 | 200 | 60 | 500.0 | 1700 | 0.31 | 500 |
| ECS0805-50N□-S | 50.00 | ±5 | 200 | 60 | 500.0 | 1650 | 0.34 | 500 |
| ECS0805-56N□-S | 56.00 | ±5 | 200 | 60 | 500.0 | 1600 | 0.34 | 500 |
| ECS0805-62N□-S | 62.00 | ±5 | 200 | 60 | 500.0 | 1450 | 0.36 | 500 |
| ECS0805-64N□-S | 64.00 | ±5 | 200 | 60 | 500.0 | 1500 | 0.38 | 500 |
| ECS0805-68N□-S | 68.00 | ±5 | 200 | 60 | 500.0 | 1500 | 0.38 | 500 |
| ECS0805-72N□-S | 72.00 | ±5 | 150 | 60 | 500.0 | 1400 | 0.38 | 500 |
| ECS0805-75N□-S | 75.00 | ±5 | 150 | 60 | 500.0 | 1400 | 0.40 | 450 |
| ECS0805-78N□-S | 78.00 | ±5 | 150 | 60 | 500.0 | 1400 | 0.40 | 450 |
| ECS0805-82N□-S | 82.00 | ±5 | 150 | 65 | 500.0 | 1330 | 0.42 | 400 |
| ECS0805-91N□-S | 91.00 | ±5 | 150 | 65 | 500.0 | 1330 | 0.48 | 400 |
| ECS0805-R10□-S | 100.0 | ±5 | 150 | 65 | 500.0 | 1250 | 0.46 | 400 |
| ECS0805-R11□-S | 110.0 | ±5 | 150 | 50 | 250.0 | 1100 | 0.48 | 400 |
| ECS0805-R12□-S | 120.0 | ±5 | 150 | 50 | 250.0 | 1100 | 0.51 | 400 |
| ECS0805-R13□-S | 130.0 | ±5 | 100 | 50 | 250.0 | 920.0 | 0.56 | 400 |
| ECS0805-R14□-S | 140.0 | ±5 | 100 | 50 | 250.0 | 920.0 | 0.56 | 400 |
| ECS0805-R15□-S | 150.0 | ±5 | 100 | 50 | 250.0 | 920.0 | 0.56 | 400 |
| ECS0805-R16□-S | 160.0 | ±5 | 100 | 50 | 250.0 | 920.0 | 0.60 | 400 |
| ECS0805-R18□-S | 180.0 | ±5 | 100 | 50 | 250.0 | 920.0 | 0.64 | 400 |
| ECS0805-R20□-S | 200.0 | ±5 | 100 | 50 | 250.0 | 860.0 | 0.68 | 400 |
| ECS0805-R21□-S | 210.0 | ±5 | 100 | 50 | 250.0 | 820.0 | 0.70 | 400 |
| ECS0805-R22□-S | 220.0 | ±5 | 100 | 50 | 250.0 | 820.0 | 0.70 | 400 |
| ECS0805-R24□-S | 240.0 | ±5 | 100 | 44 | 250.0 | 770.0 | 1.00 | 350 |
| ECS0805-R25□-S | 250.0 | ±5 | 100 | 45 | 250.0 | 750.0 | 1.20 | 350 |
| ECS0805-R27□-S | 270.0 | ±5 | 100 | 48 | 250.0 | 730.0 | 1.00 | 350 |
| ECS0805-R28□-S | 280.0 | ±5 | 100 | 48 | 250.0 | 550.0 | 1.35 | 350 |
| ECS0805-R29□-S | 290.0 | ±5 | 150 | 48 | 250.0 | 450.0 | 1.40 | 310 |
| ECS0805-R30□-S | 300.0 | ±5 | 150 | 48 | 250.0 | 450.0 | 1.40 | 310 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ECS0805-R33□-S | 330.0 | ±5 | 100 | 48 | 250.0 | 650.0 | 1.40 | 310 |
| ECS0805-R36□-S | 360.0 | ±5 | 100 | 48 | 250.0 | 630.0 | 1.45 | 300 |
| ECS0805-R39□-S | 390.0 | ±5 | 100 | 48 | 250.0 | 600.0 | 1.50 | 290 |
| ECS0805-R42□-S | 420.0 | ±5 | 50.0 | 33 | 100.0 | 425.0 | 1.70 | 250 |
| ECS0805-R43□-S | 430.0 | ±5 | 50.0 | 33 | 100.0 | 425.0 | 1.70 | 250 |
| ECS0805-R47□-S | 470.0 | ±5 | 50.0 | 33 | 100.0 | 375.0 | 1.76 | 250 |
| ECS0805-R56□-S | 560.0 | ±5 | 25.0 | 23 | 50.00 | 330.0 | 1.90 | 230 |
| ECS0805-R62□-S | 620.0 | ±5 | 25.0 | 23 | 50.00 | 320.0 | 2.20 | 210 |
| ECS0805-R68□-S | 680.0 | ±5 | 25.0 | 23 | 50.00 | 310.0 | 2.20 | 190 |
| ECS0805-R75□-S | 750.0 | ±5 | 25.0 | 23 | 50.00 | 310.0 | 2.30 | 180 |
| ECS0805-R82□-S | 820.0 | ±5 | 25.0 | 23 | 50.00 | 310.0 | 2.35 | 180 |
| ECS0805-R88□-S | 880.0 | ±5 | 25.0 | 23 | 50.00 | 310.0 | 2.35 | 180 |
| ECS0805-R91□-S | 910.0 | ±5 | 25.0 | 22 | 50.00 | 250.0 | 2.45 | 170 |
| ECS0805-1R0□-S | 1000 | ±5 | 25.0 | 20 | 50.00 | 220.0 | 2.50 | 170 |
| ECS0805-1R2□-S | 1200 | ±5 | 25.0 | 20 | 25.00 | 180.0 | 2.90 | 150 |
| ECS0805-1R5□-S | 1500 | ±5 | 25.0 | 20 | 25.00 | 160.0 | 3.30 | 150 |
| ECS0805-1R6□-S | 1600 | ±5 | 25.0 | 20 | 25.00 | 140.0 | 3.40 | 150 |
| ECS0805-1R8□-S | 1800 | ±5 | 25.0 | 20 | 25.00 | 130.0 | 3.50 | 120 |
| ECS0805-2R2□-S | 2200 | ±5 | 25.0 | 20 | 25.00 | 100.0 | 4.50 | 120 |
| ECS0805-2R7□-S | 2700 | ±5 | 25.0 | 18 | 25.00 | 80.0 | 4.80 | 100 |
| ECS0805-3R3□-S | 3300 | ±5 | 25.0 | 18 | 25.00 | 50.0 | 6.80 | 50.0 |
| ECS0805-4R7□-S | 4700 | ±5 | 25.0 | 18 | 25.00 | 40.0 | 7.00 | 30.0 |

Remark:

※1:All test data is referenced to 20°C ambient.

※2:Q:The power periodically exchanged between an inductor and a power source in an AC circuit.

※3:Self-resonant Frequency:The self-resonant frequency is the high-frequency critical point of practical passive components.

※4:DC Resistance:DC resistance at 20°C.

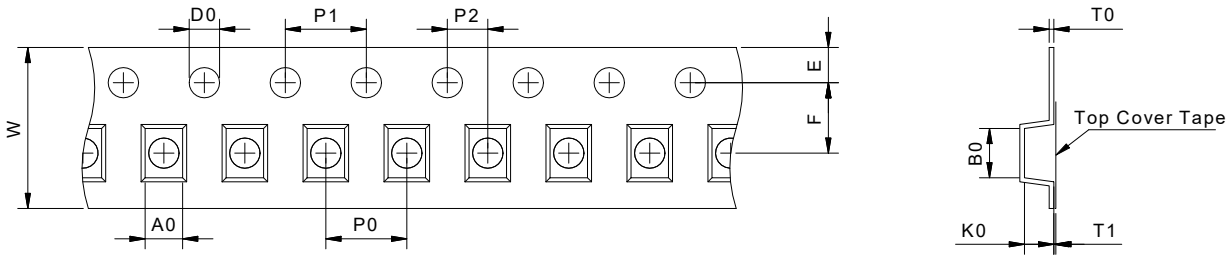
※5:Heat Rating Current: DC current that causes the temperature rise (△T) from 20°C ambient,

for max. Value, △T＜40°C.

※6:Specifications subject to change without notice. Please check our website for latest information.

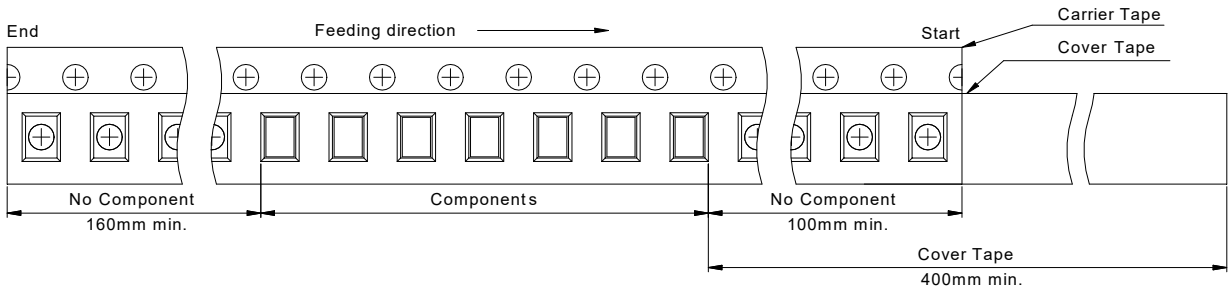
## Packing specification

Carrier tape dimensions (mm)



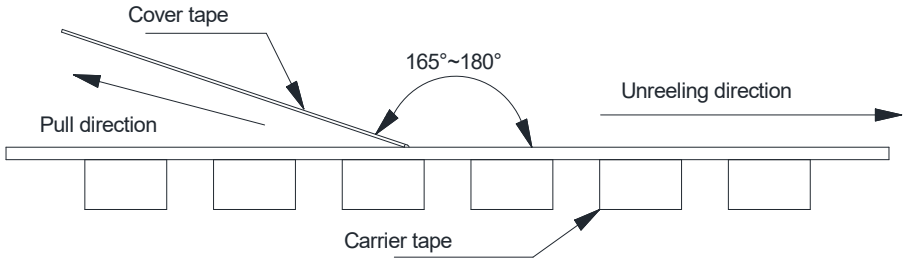

| ITEM | W | P0 | E | F | T0 | T1 | A0 | B0 | K0 | D0 | P1 | P2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size(mm) | 8.0 | 4.0 | 1.75 | 3.50 | 0.23 | 0.10 | 1.85 | 2.45 | 1.45 | 1.50 | 4.00 | 2.00 |
| Tolerance | ±0.30 | ±0.10 | ±0.10 | ±0.10 | ref. | max. | typ. | typ. | typ. | ±0.10 | ±0.10 | ±0.10 |

Taping dimensions (mm)

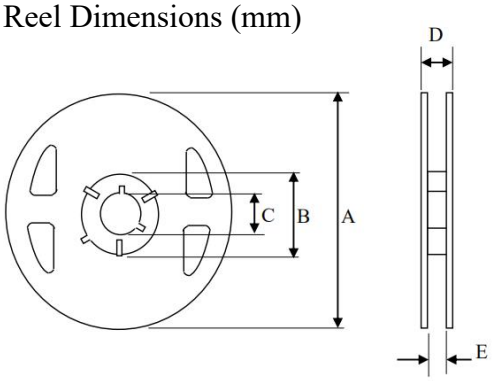



Cover Tape Peel Off Condition

Cover tape peel force shall be 10g to 130g.



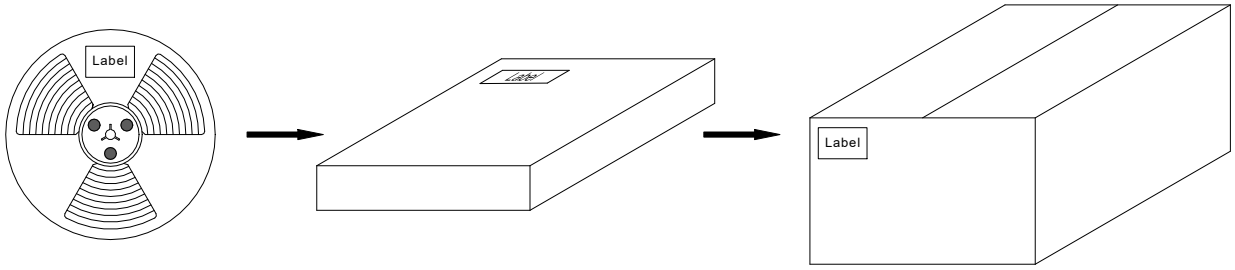
Reel Dimensions (mm)




A : 180 mm
B : 60 mm
C : 13.5 mm
D : 15.5 mm
E : 9.0 mm

Packing Quantity

| Product Series | Quantity/Reel | Inner Carton Quantity | Outer Carton Quantity |
|---|---|---|---|
| ECS0805 | 2000pcs | (2000X6)=12000pcs | (12000X3)=36000pcs |



## Recommended Soldering Conditions

Product can be applied to flow and reflow soldering.

⑴ Flux, Solder

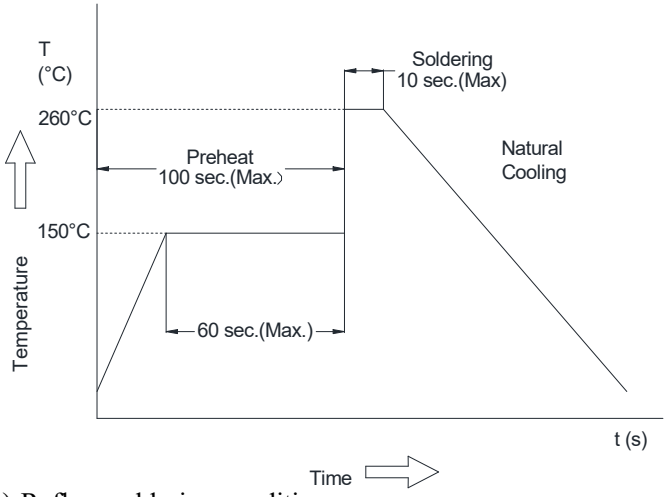
① Use rosin-based flux. Don't use highly acidic flux with halide content exceeding 0.2wt% (chlorine conversion value).

② Use Sn solder.

⑵ Flow soldering conditions

① Pre-heating should be in such a way that the temperature difference between solder and product surface is limited to 150℃ max. Cooling into solvent after soldering also should be in such a way that temperature difference is limited to 100℃ max. Unwrought pre-heating may cause cracks on the product, resulting in the deterioration of products quality.

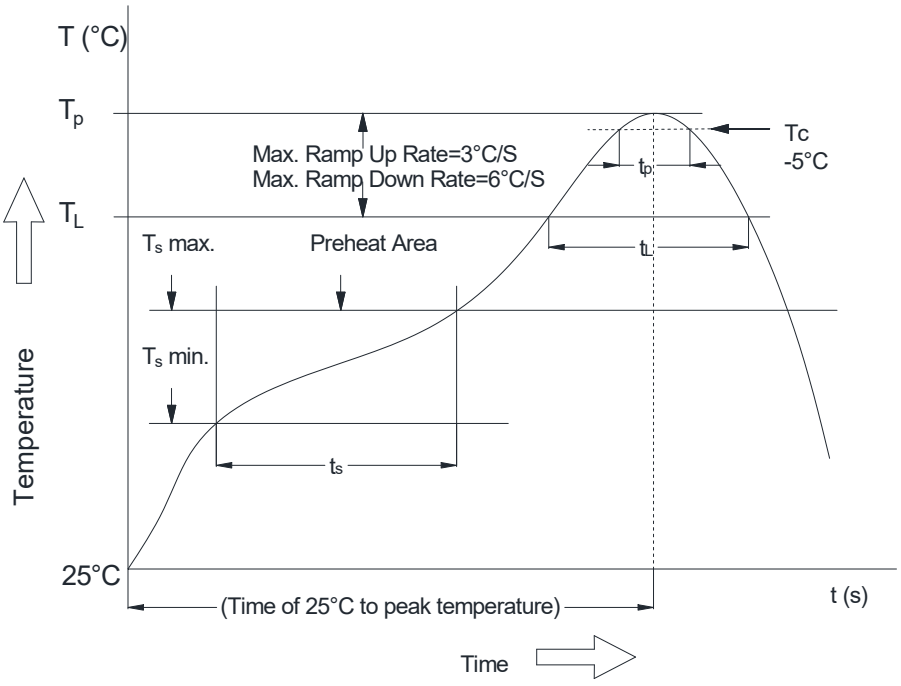
② Standard soldering profile.




| | |
|---|---|
| **Pre-heating** | 150℃,1 minute min |
| **Peak** | 260℃,10 seconds max |

(3) Reflow soldering conditions

Classification Reflow Profile for SMT components:



Classification Reflow Soldering Profile:

| Profile Feature | | Lead-Free Assembly |
|---|---|---|
| **Average Ramp-Up Rate ( Ts max. to Tp )** | | 3℃/second max. |
| **Preheat** | – **Temperature Min (Ts min.)**<br>– **Temperature Max (Ts max.)**<br>– **Time (Ts min to Ts max.)** | 150℃<br>200℃<br>60-120 seconds |
| **Time maintained above** | – **Temperature ($T_L$)**<br>– **Time ($t_L$)** | 217℃<br>60-150 seconds |
| **Peak/Classification Temperature (Tp)**<br>**Peak/Classification Time (Tp)** | | see table below<br>3-4 seconds |
| **Time within 5 °C of actual Peak Temperature ($t_p$)** | | 20-30 seconds |
| **Ramp-Down Rate** | | 6°C/second max. |
| **Time 25 °C to Peak Temperature** | | 8 minutes max. |

Note 1: All temperatures refer to topside of the package, measured on the package body surface.

2: Refer to IPC/ JEDEC J-STD-020E

Package Classification Reflow Temperature:

| Properties | Volume mm³ <350 | Volume mm³ 350-2000 | Volume mm³ >2000 |
|---|---|---|---|
| **PB-Free Assembly \| Package Thickness < 1.6 mm** | 260°C | 260°C | 260°C |
| **PB-Free Assembly \| Package Thickness 1.6mm-2.5 mm** | 260°C | 250°C | 245°C |
| **PB-Free Assembly \| Package Thickness ≥2.5 mm** | 250°C | 245°C | 245°C |

Refer to IPC/ JEDEC J-STD-020E

⑷ The method on Re-work with using the iron:

The following conditions must be strictly followed when using a soldering iron

| | |
|---|---|
| **Pre-heating** | 150℃, 1 minute |
| **Tip temperature** | 280℃ max |
| **Soldering iron output** | 20w max |
| **End of soldering iron** | φ1mm max |
| **Soldering time** | 3 seconds max |

## Products Storage

(1) Storage period

Products which inspected in LYEC over 12 months ago should be examined and used, which can be confirmed with inspection No. marked on the container. Solderability should be checked if this period is exceeded.

(2) Storage conditions

Products should be storage in the warehouse on the following conditions:

Temperature: Less than 40℃

Humidity : Less than 75% relative and humidity

No rapid change on temperature and humidity

(3) Don't keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of electrode, resulting in poor solderability.

(4) Products should be storage on the palette for the prevention of the influence from humidity, dust and so on.

(5) Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.

(6) Products should be storage under the airtight packaged condition.