

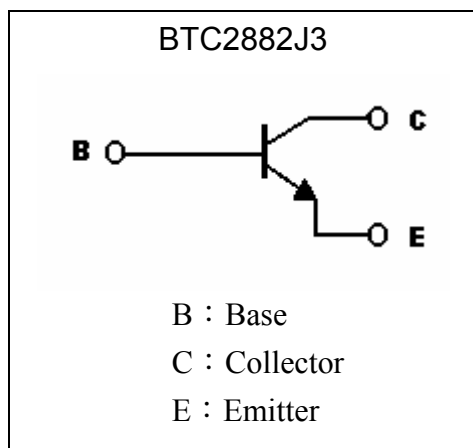
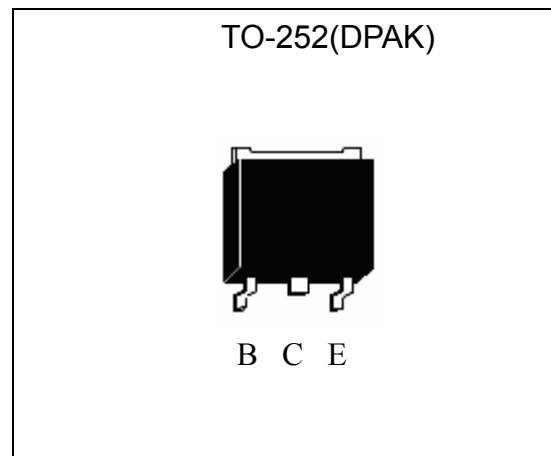
General Purpose NPN Epitaxial Planar Transistor

BTC2882J3

| | |
|------------------|--------------|
| BV_{CEO} | 200V |
| I_C | 1A |
| $R_{CESAT(MAX)}$ | 0.6 Ω |

Features

- High breakdown voltage, $BV_{CEO} \geq 200V$
- Large continuous collector current capability
- Low collector saturation voltage
- Pb-free lead plating and halogen-free package

Symbol

Outline

Absolute Maximum Ratings ($T_a=25^\circ C$)

| Parameter | Symbol | Limits | Unit |
|--------------------------------------|-----------|----------|------------|
| Collector-Base Voltage | V_{CB0} | 250 | V |
| Collector-Emitter Voltage | V_{CEO} | 200 | V |
| Emitter-Base Voltage | V_{EBO} | 7 | V |
| Collector Current | I_C | 1 | A |
| Base Current | I_B | 200 | mA |
| Power Dissipation @ $T_A=25^\circ C$ | P_D | 1 | W |
| Power Dissipation @ $T_C=25^\circ C$ | | 10 | W |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55~+150 | $^\circ C$ |

Thermal Data

| Parameter | Symbol | Value | Unit |
|--|--------------|-------|---------------|
| Thermal Resistance, Junction-to-case, max | $R_{th,j-c}$ | 12.5 | $^{\circ}C/W$ |
| Thermal Resistance, Junction-to-ambient, max | $R_{th,j-a}$ | 125 | $^{\circ}C/W$ |

Characteristics (Ta=25°C)

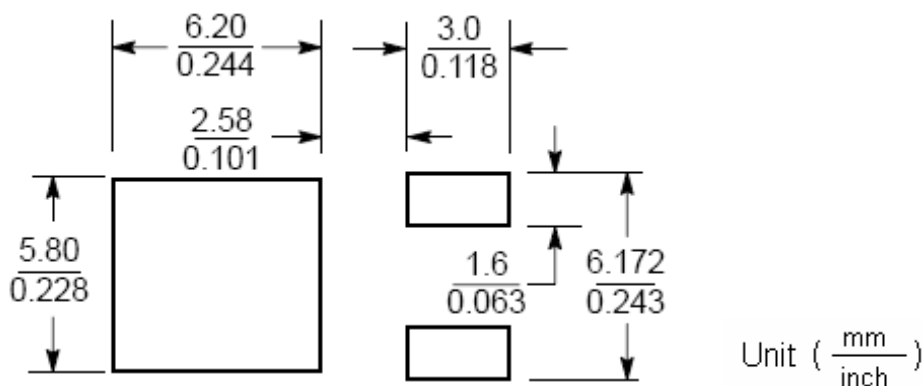
| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------------|------|------|------|------|------------------------------|
| BV_{CBO} | 250 | - | - | V | $I_C=10\mu A$ |
| BV_{CEO} | 200 | - | - | V | $I_C=10mA$ |
| BV_{EBO} | 7 | - | - | V | $I_E=10\mu A$ |
| I_{CBO} | - | - | 100 | nA | $V_{CB}=200V$ |
| I_{EBO} | - | - | 100 | nA | $V_{EB}=6V$ |
| * $V_{CE(sat)}$ | - | 0.2 | 0.3 | V | $I_C=500mA, I_B=50mA$ |
| * $V_{CE(sat)}$ | - | 0.3 | 0.5 | V | $I_C=700mA, I_B=35mA$ |
| * $V_{BE(sat)}$ | - | 0.93 | 1 | V | $I_C=500mA, I_B=50mA$ |
| * $V_{BE(on)}$ | - | 0.68 | 0.8 | V | $V_{CE}=2V, I_C=100mA$ |
| * $h_{FE} 1$ | 160 | - | - | - | $V_{CE}=2V, I_C=50mA$ |
| * $h_{FE} 2$ | 160 | - | 400 | - | $V_{CE}=2V, I_C=100mA$ |
| * $h_{FE} 3$ | 120 | - | - | - | $V_{CE}=2V, I_C=200mA$ |
| * $h_{FE} 4$ | 50 | - | - | - | $V_{CE}=5V, I_C=700mA$ |
| f_T | - | 120 | - | MHz | $V_{CE}=5V, I_C=100mA$ |
| Cob | - | - | 30 | pF | $V_{CB}=10V, I_E=0A, f=1MHz$ |

*Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

Ordering Information

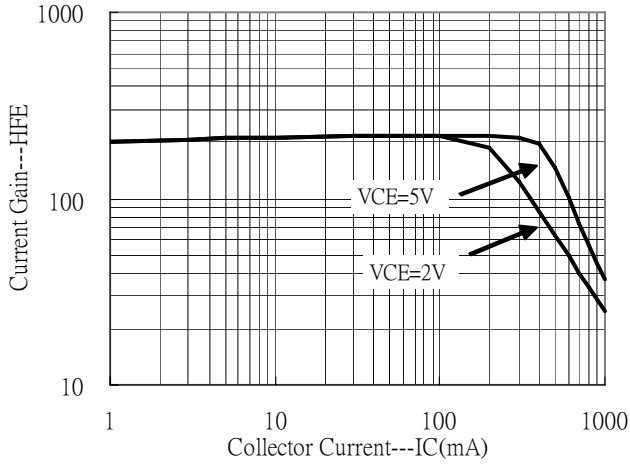
| Device | Package | Shipping |
|------------------|---|------------------------|
| BTC2882J3-0-T3-G | TO-252 (Pb-free lead plating and halogen-free package) | 2500 pcs / Tape & Reel |

Recommended soldering footprint

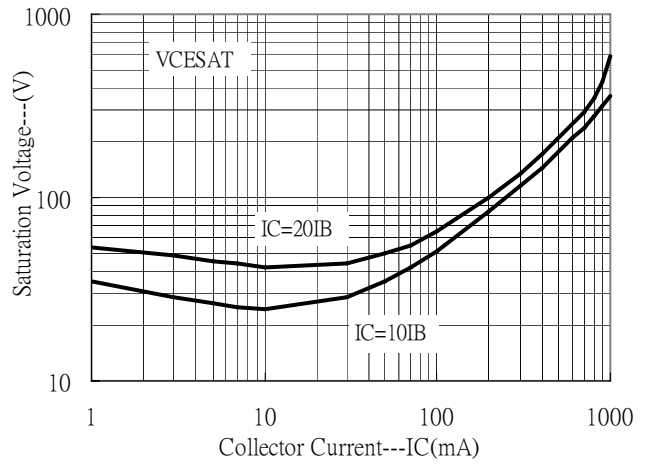


Typical Characteristics

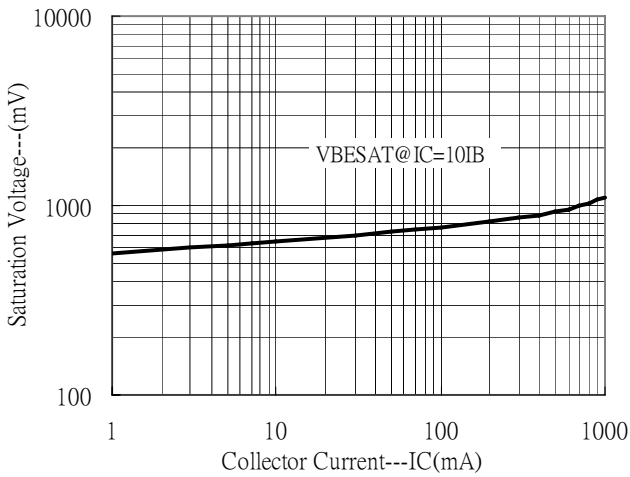
Current Gain vs Collector Current



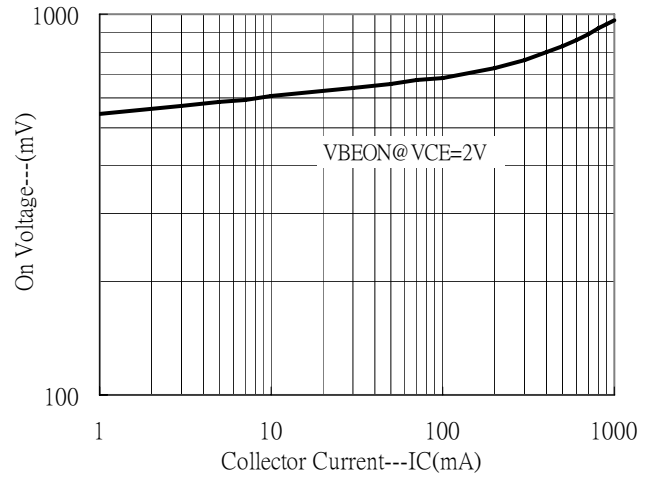
Saturation Voltage vs Collector Current



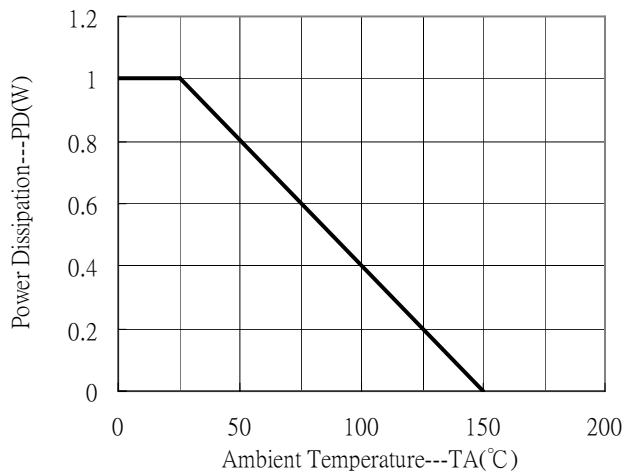
Saturation Voltage vs Collector Current



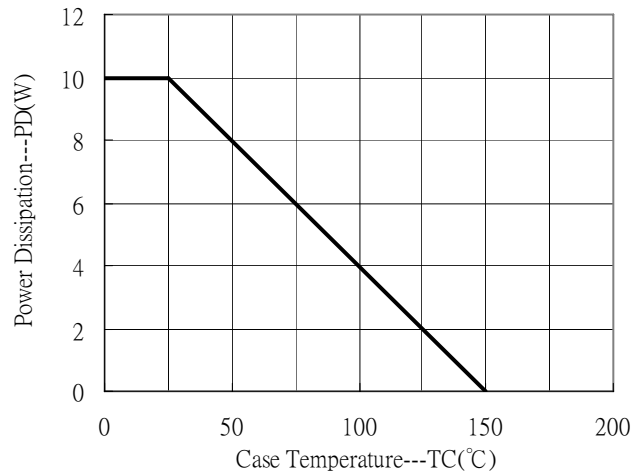
On Voltage vs Collector Current



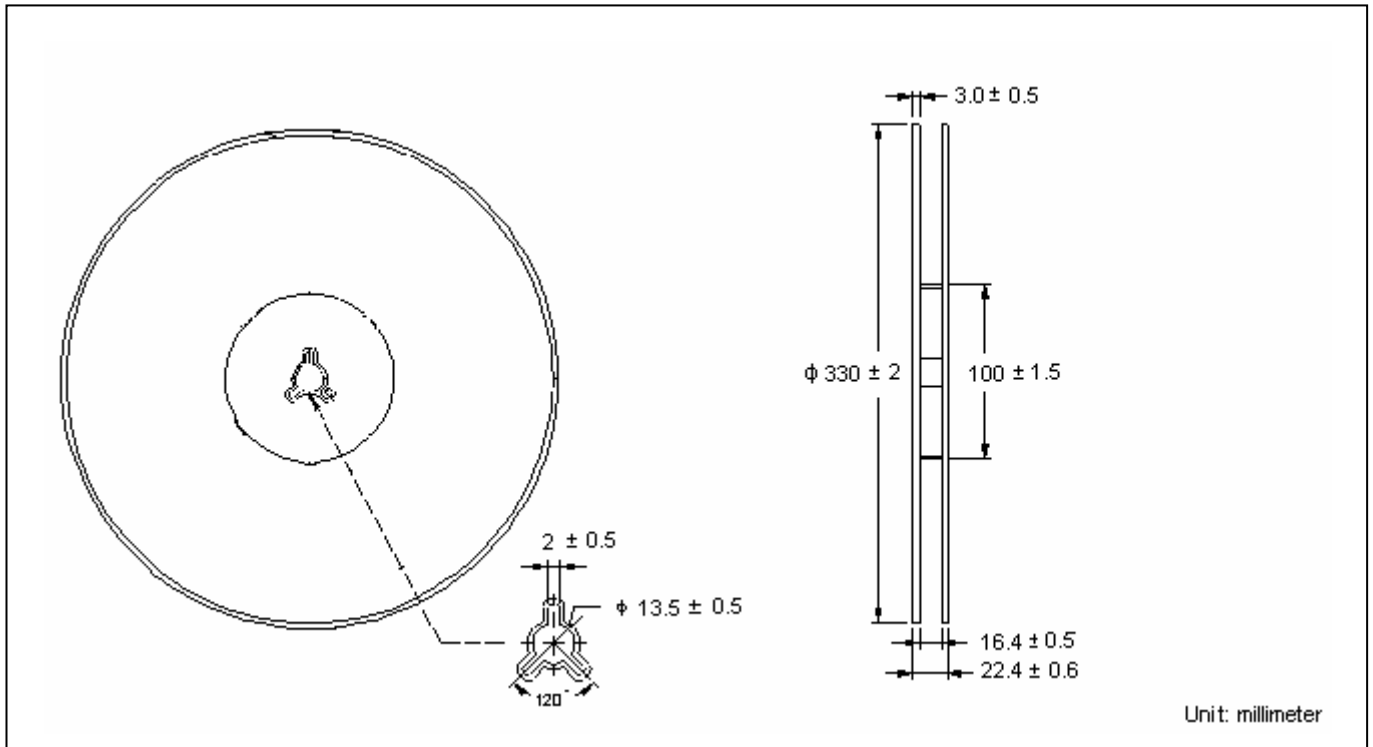
Power Derating Curve



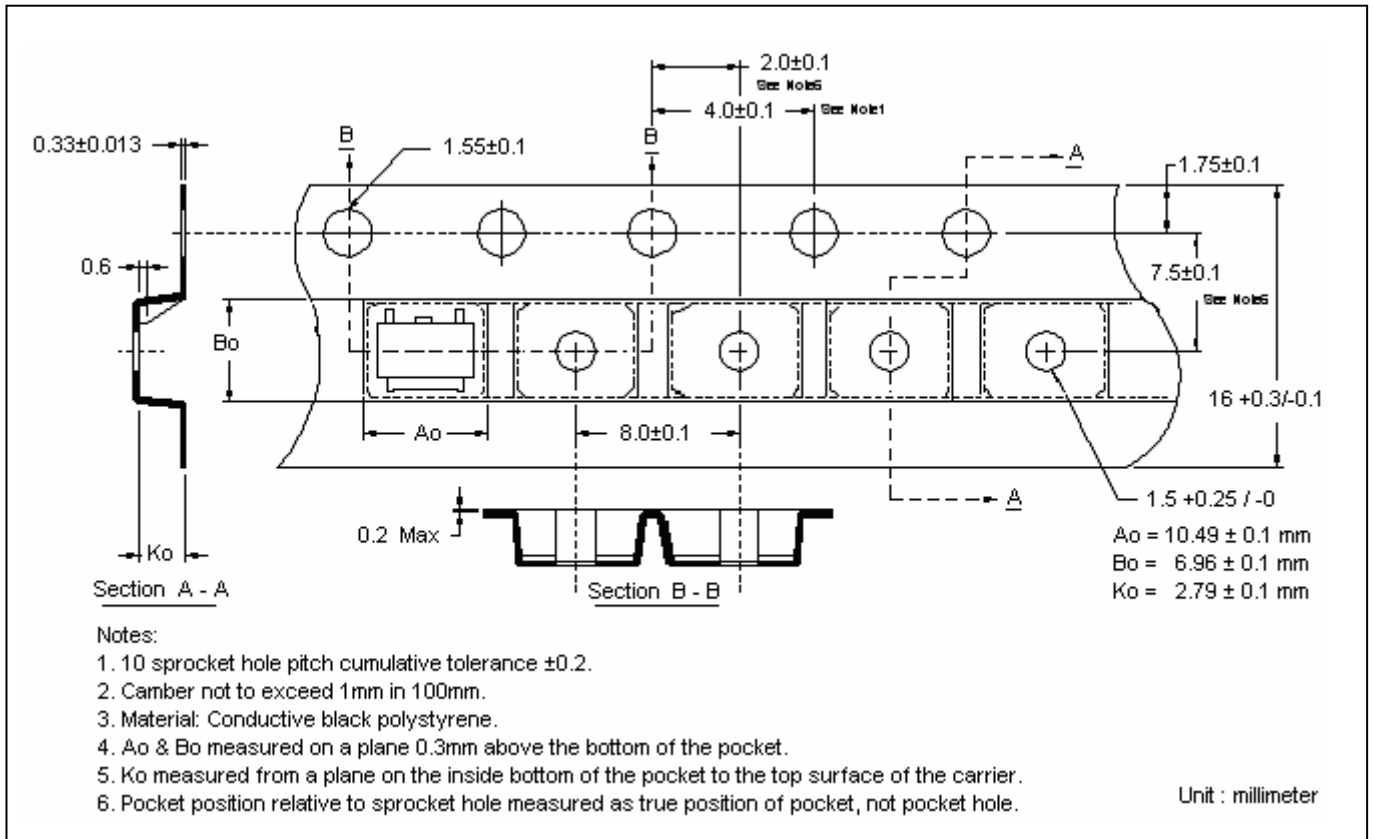
Power Derating Curve



Reel Dimension



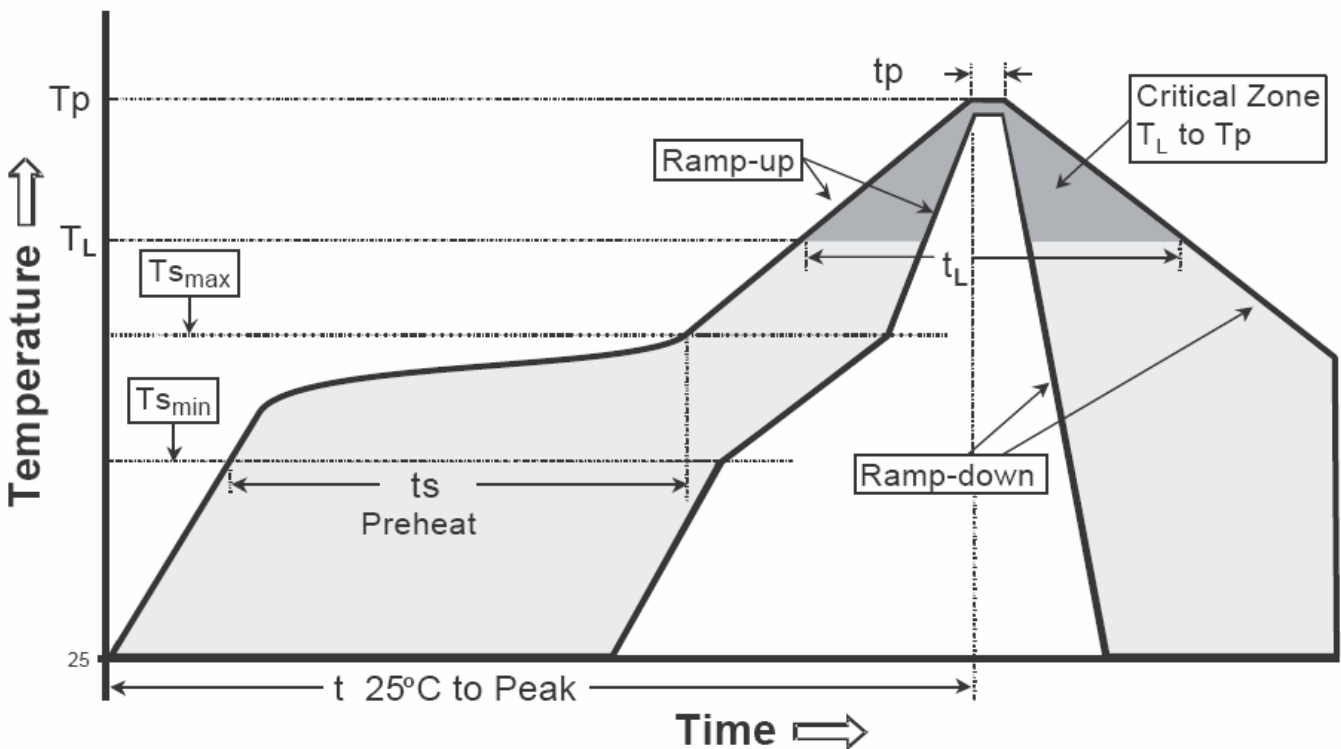
Carrier Tape Dimension



Recommended wave soldering condition

| | | |
|-----------------|------------------|-----------------|
| Product | Peak Temperature | Soldering Time |
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

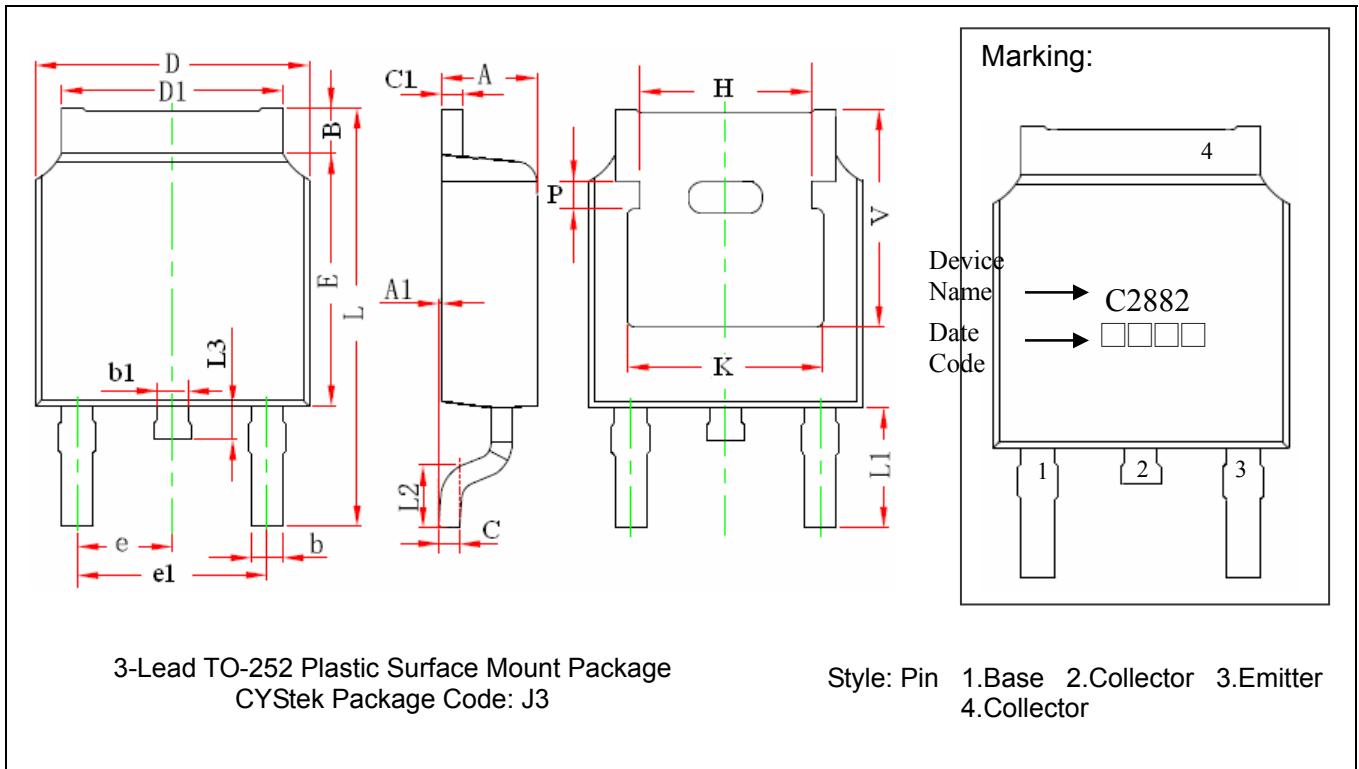
Recommended temperature profile for IR reflow



| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|--|-------------------------|------------------|
| Average ramp-up rate (Tsmmax to Tp) | 3°C/second max. | 3°C/second max. |
| Preheat | | |
| -Temperature Min(Ts min) | 100°C | 150°C |
| -Temperature Max(Ts max) | 150°C | 200°C |
| -Time(ts min to ts max) | 60-120 seconds | 60-180 seconds |
| Time maintained above: | | |
| -Temperature (Tl) | 183°C | 217°C |
| - Time (tl) | 60-150 seconds | 60-150 seconds |
| Peak Temperature(Tp) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

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

TO-252 Dimension



| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|--------|-------|-------------|-------|-----|--------|-------|-------------|--------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.087 | 0.094 | 2.200 | 2.400 | e | 0.086 | 0.094 | 2.186 | 2.386 |
| A1 | 0.000 | 0.005 | 0.000 | 0.127 | e1 | 0.172 | 0.188 | 4.372 | 4.772 |
| B | 0.039 | 0.048 | 0.990 | 1.210 | H | 0.163 | REF | 4.140 | REF |
| b | 0.026 | 0.034 | 0.660 | 0.860 | K | 0.190 | REF | 4.830 | REF |
| b1 | 0.026 | 0.034 | 0.660 | 0.860 | L | 0.386 | 0.409 | 9.800 | 10.400 |
| C | 0.018 | 0.023 | 0.460 | 0.580 | L1 | 0.114 | REF | 2.900 | REF |
| C1 | 0.018 | 0.023 | 0.460 | 0.580 | L2 | 0.055 | 0.067 | 1.400 | 1.700 |
| D | 0.256 | 0.264 | 6.500 | 6.700 | L3 | 0.024 | 0.039 | 0.600 | 1.000 |
| D1 | 0.201 | 0.215 | 5.100 | 5.460 | P | 0.030 | REF | 0.750 | REF |
| E | 0.236 | 0.244 | 6.000 | 6.200 | V | 0.211 | REF | 5.350 | REF |

Notes: 1.Controlling dimension: millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead : Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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