

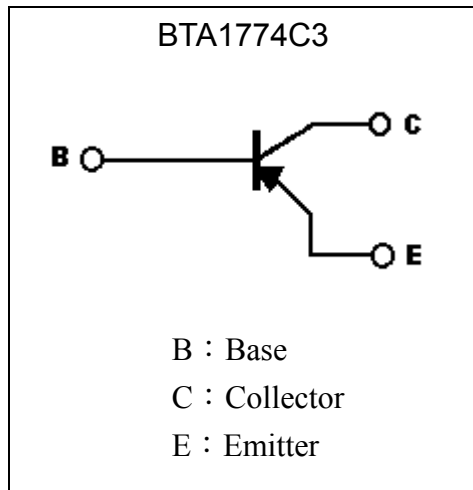
General Purpose PNP Epitaxial Planar Transistor

BTA1774C3

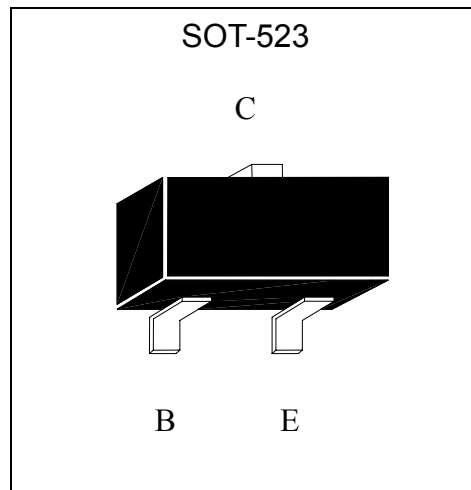
Description

- The BTA1774C3 is designed for use in driver stage of AF amplifier and general purpose amplification.
- High HFE and excellent linearity
- Complementary to BTC4617C3.
- Pb-free lead plating and halogen-free package

Symbol

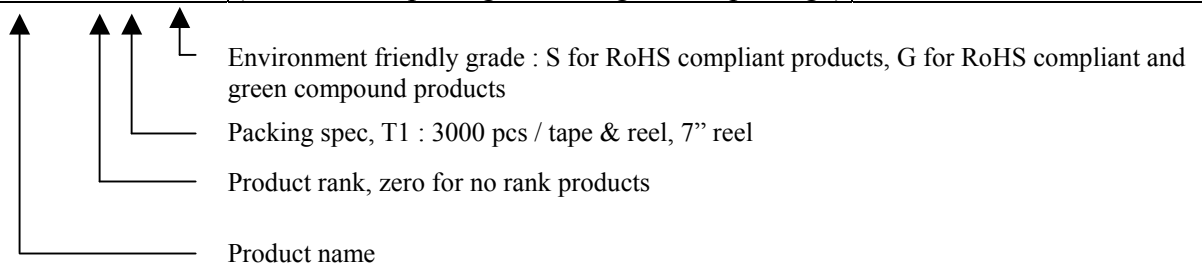


Outline



Ordering Information

| Device | Package | Shipping |
|------------------|--|------------------------|
| BTA1774C3-0-T1-G | SOT-523 (Pb-free lead plating and halogen-free package) | 3000 pcs / Tape & Reel |



**Absolute Maximum Ratings** (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|---|------------------|----------|------|
| Collector-Base Voltage | V _{CB0} | -60 | V |
| Collector-Emitter Voltage | V _{CEO} | -50 | V |
| Emitter-Base Voltage | V _{EB0} | -6 | V |
| Collector Current | I _C | -150 | mA |
| Power Dissipation | P _d | 150 | mW |
| Thermal Resistance, Junction to Ambient | R _{θJA} | 833.3 | °C/W |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature | T _{stg} | -55~+150 | °C |

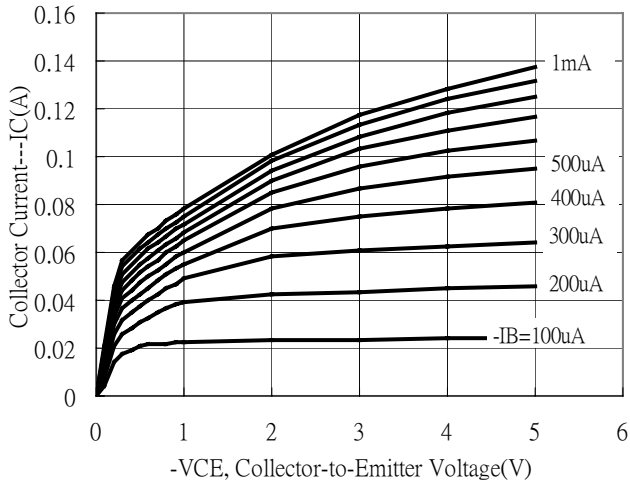
Characteristics (Ta=25°C)

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-----------------------|------|------|------|------|--|
| BV _{CB0} | -60 | - | - | V | I _C =-50μA |
| BV _{CEO} | -50 | - | - | V | I _C =-1mA |
| BV _{EB0} | -6 | - | - | V | I _E =-50μA |
| I _{CB0} | - | - | -0.1 | μA | V _{CB} =-60V |
| I _{EB0} | - | - | -0.1 | μA | V _{EB} =-6V |
| *V _{CE(sat)} | - | - | -0.5 | V | I _C =-50mA, I _B =-5mA |
| h _{FE} | 180 | - | 560 | - | V _{CE} =-6V, I _C =-1mA |
| f _T | - | 140 | - | MHz | V _{CE} =-12V, I _C =-2mA, f=30MHz |
| C _{ob} | - | 4 | 5 | pF | V _{CB} =-12V, I _E =0, f=1MHz |

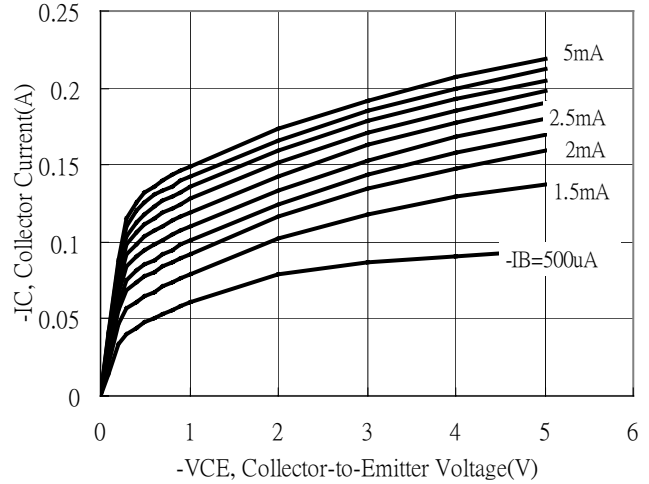
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Typical Characteristics

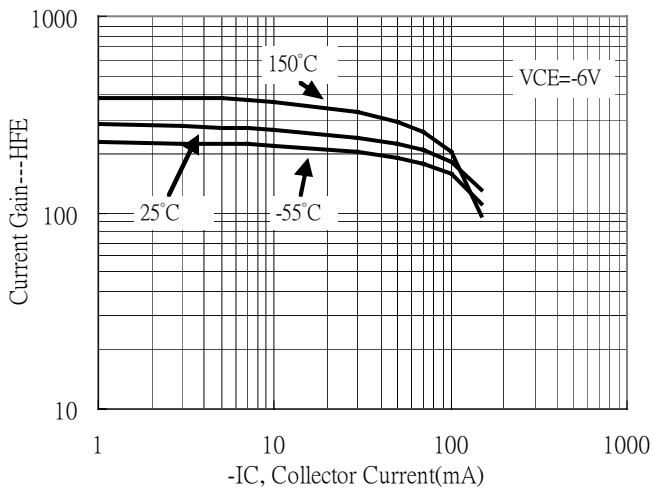
Emitter Grounded Output Characteristics



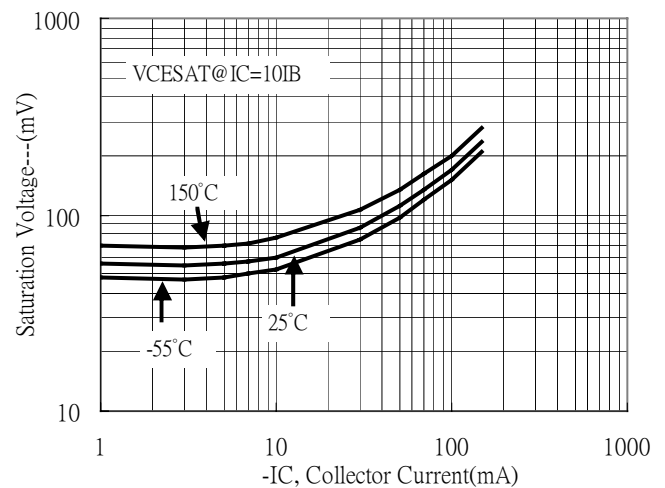
Emitter Grounded Output Characteristics



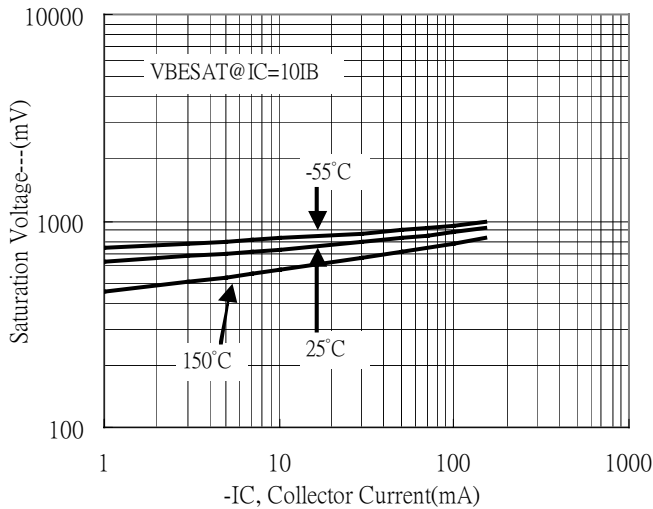
Current Gain vs Collector Current



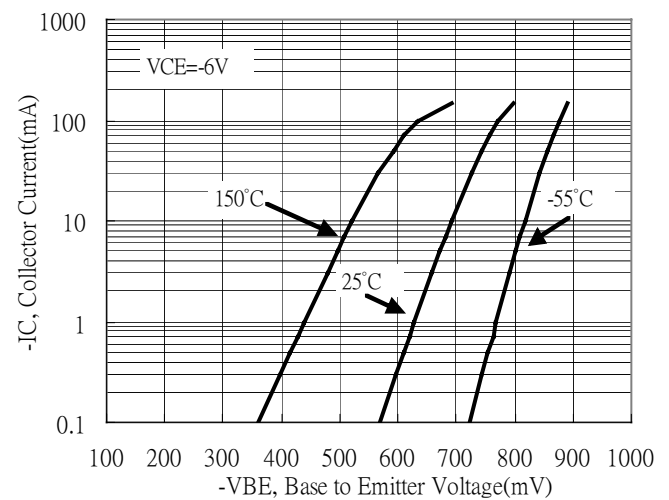
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current

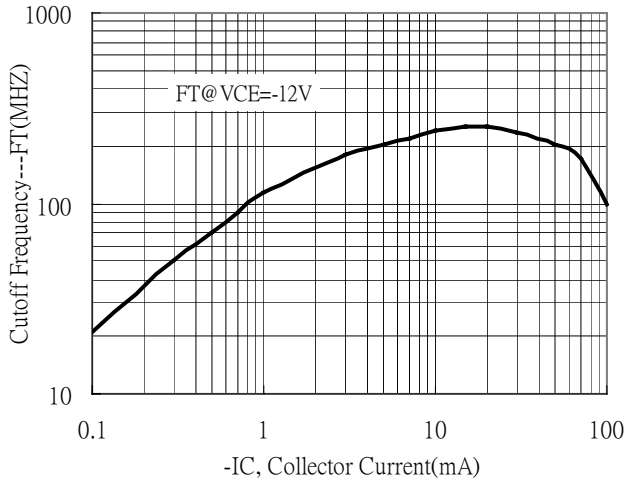


On Voltage vs Collector Current

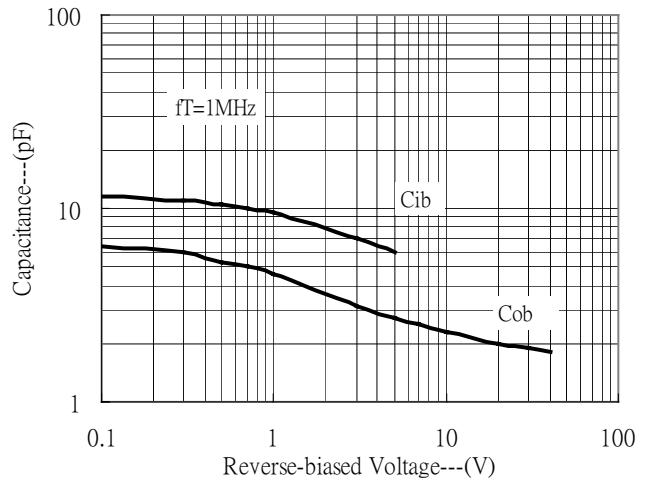


Typical Characteristics

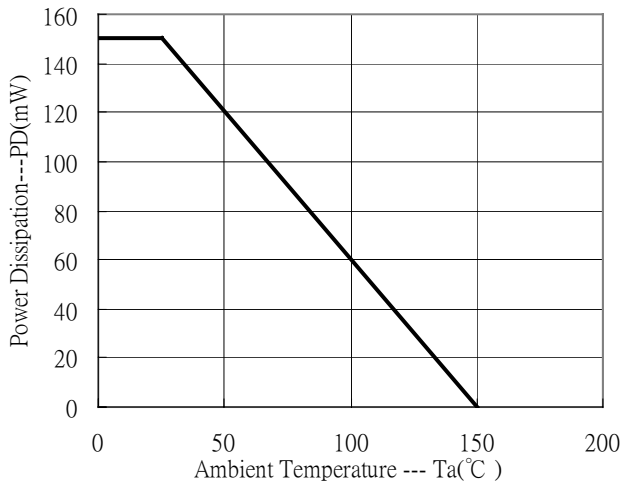
Cutoff Frequency vs Collector Current



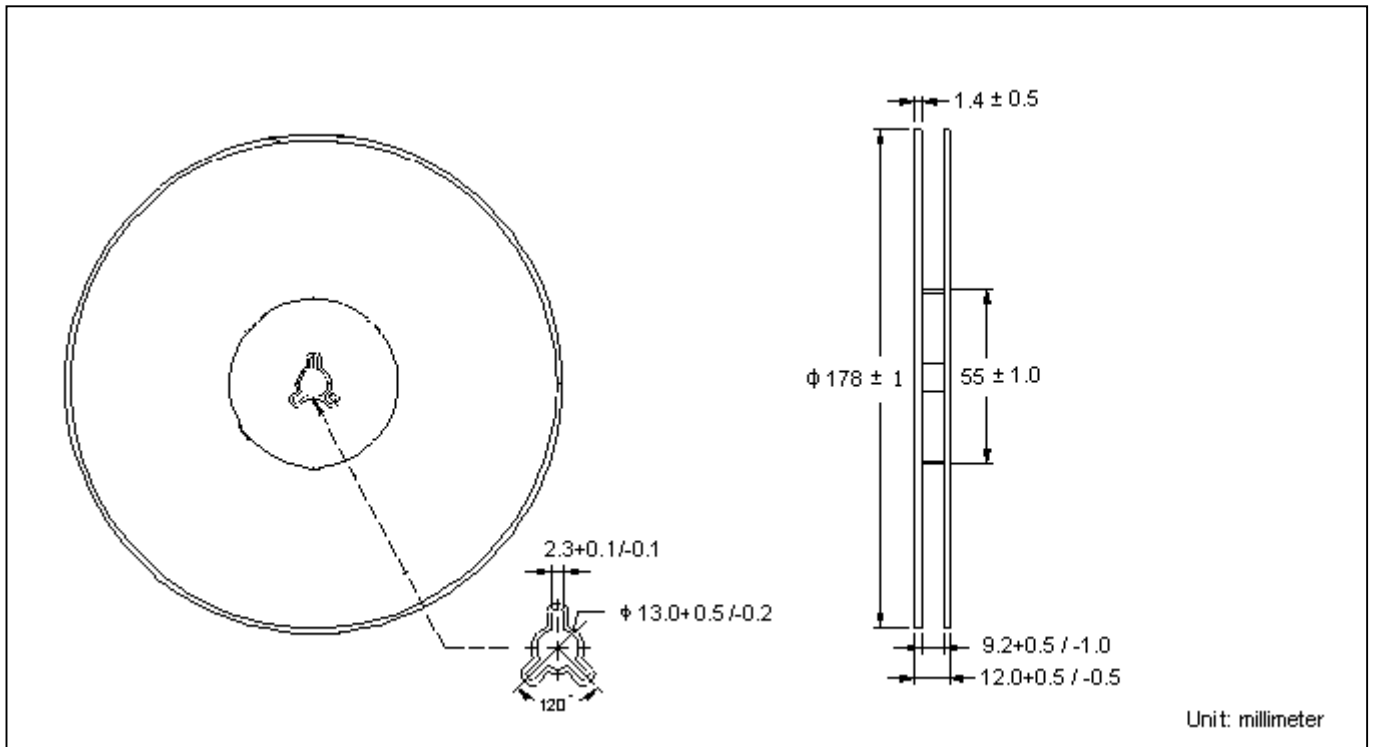
Capacitance Characteristics



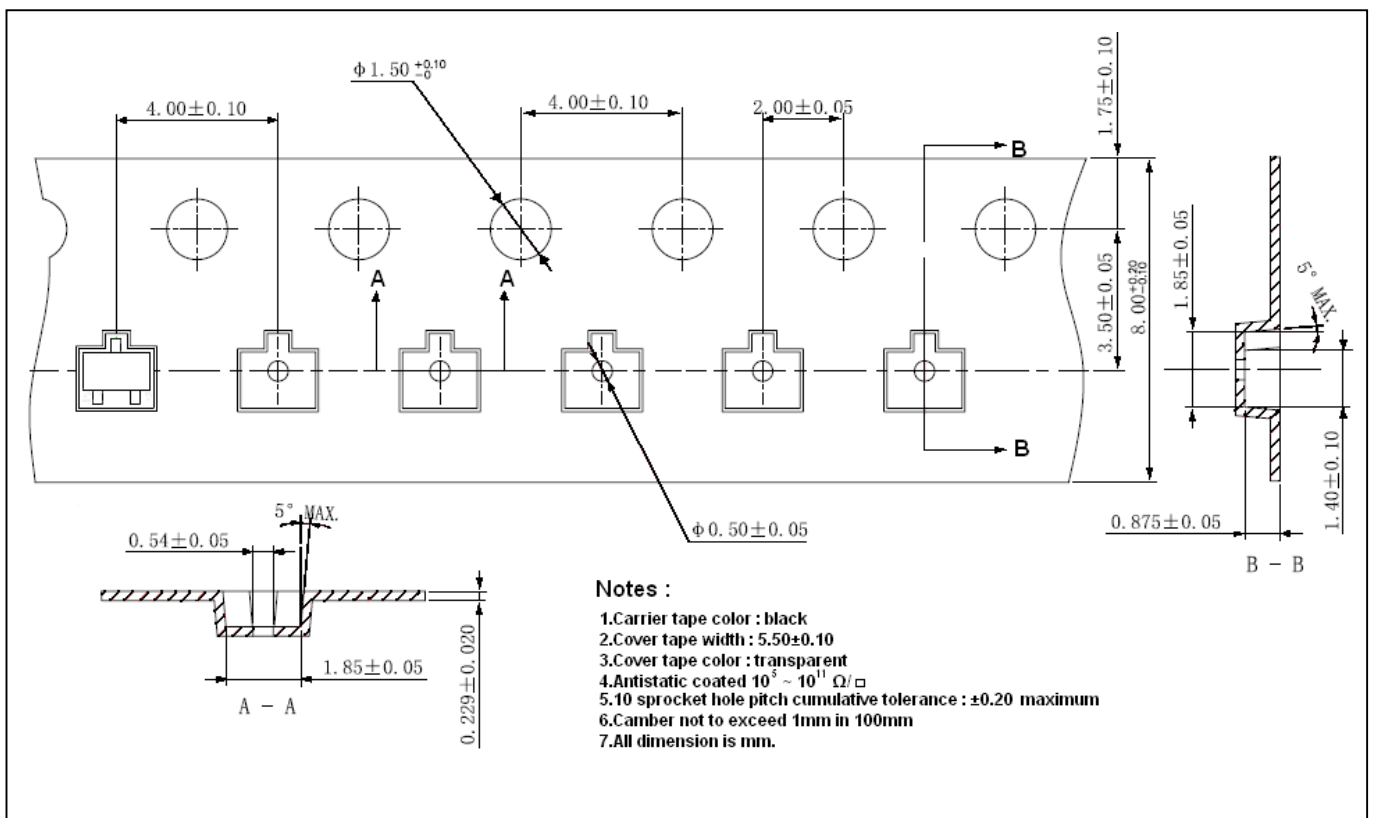
Power Derating Curve



Reel Dimension

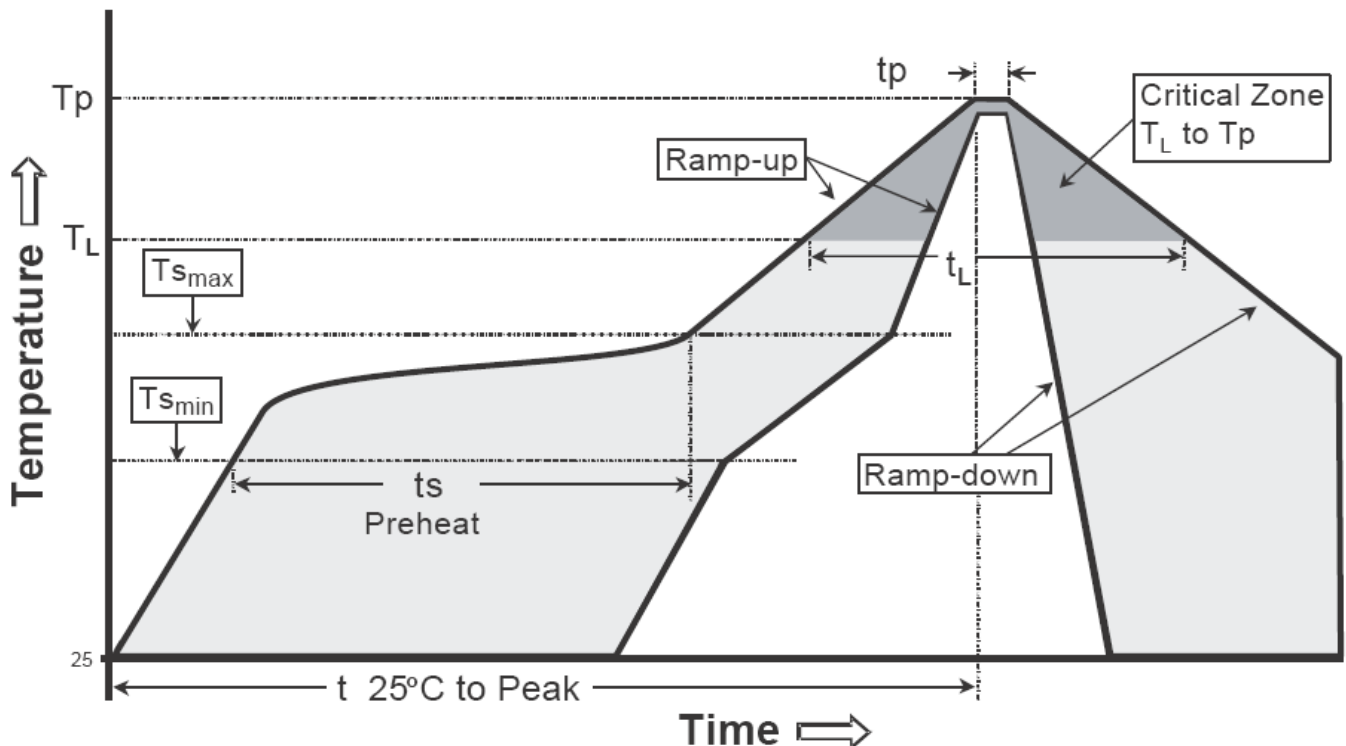


Carrier Tape Dimension



Recommended wave soldering condition

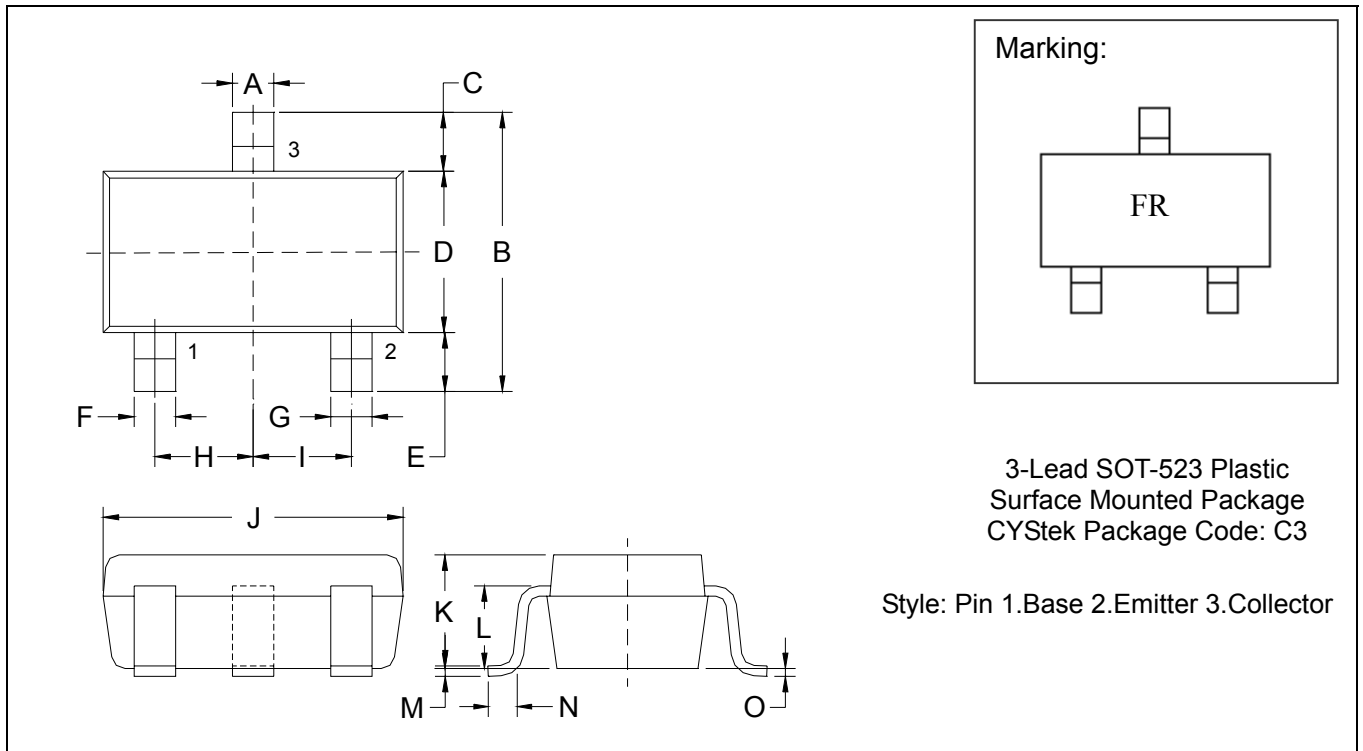
| | | |
|-----------------|------------------|-----------------|
| Product | Peak Temperature | Soldering Time |
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

Recommended temperature profile for IR reflow


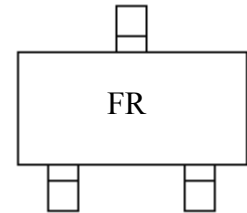
| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|-------------------------|------------------|
| Average ramp-up rate (T _{smax} to T _p) | 3°C/second max. | 3°C/second max. |
| Preheat | | |
| -Temperature Min(T _{s min}) | 100°C | 150°C |
| -Temperature Max(T _{s max}) | 150°C | 200°C |
| -Time(t _{s min} to t _{s max}) | 60-120 seconds | 60-180 seconds |
| Time maintained above: | | |
| -Temperature (T _L) | 183°C | 217°C |
| - Time (t _L) | 60-150 seconds | 60-150 seconds |
| Peak Temperature(T _P) | 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.

SOT-523 Dimension (C forming)



Marking:



3-Lead SOT-523 Plastic
 Surface Mounted Package
 CYStek Package Code: C3

Style: Pin 1.Base 2.Emitter 3.Collector

*: Typical

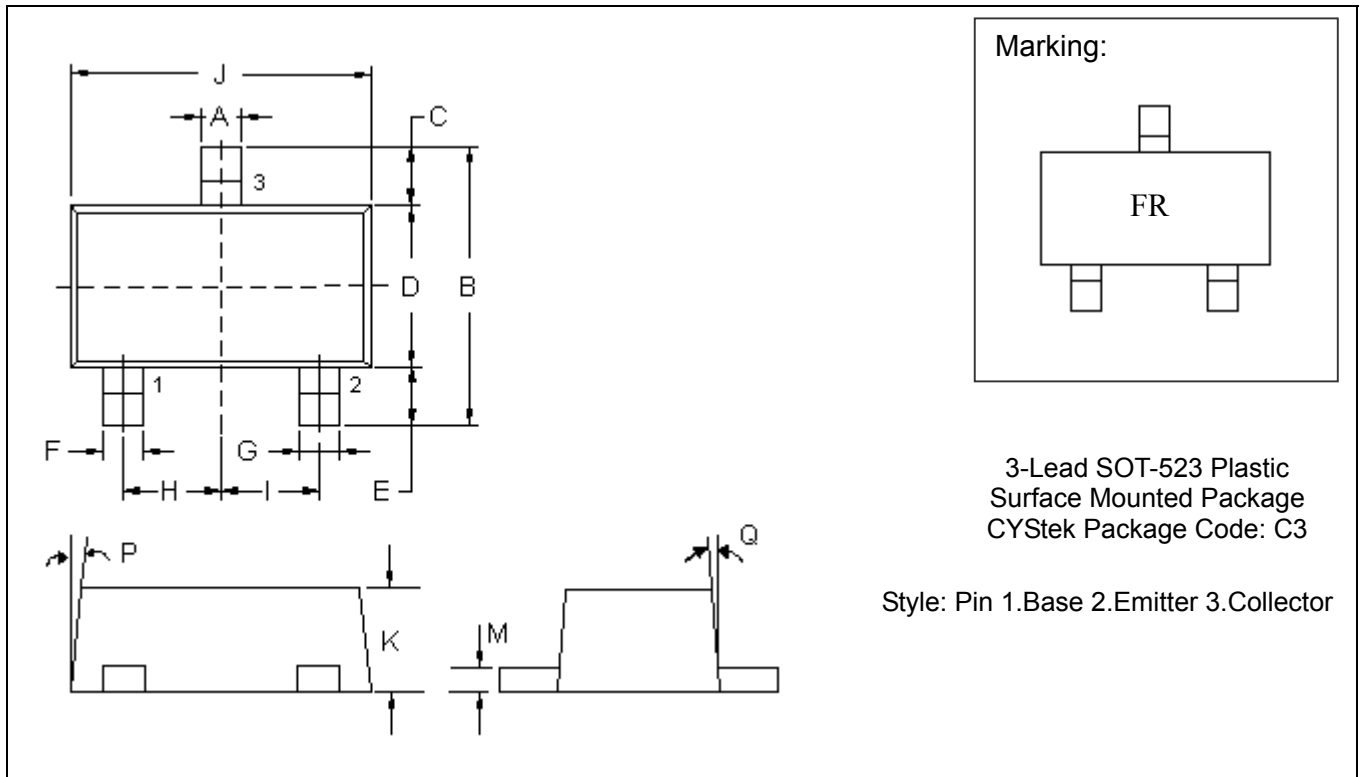
| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|---------|--------|-------------|------|-----|---------|--------|-------------|------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.0079 | 0.0157 | 0.20 | 0.40 | I | *0.0197 | - | *0.50 | - |
| B | 0.0591 | 0.0669 | 1.50 | 1.70 | J | 0.0610 | 0.0650 | 1.55 | 1.65 |
| C | 0.0118 | 0.0197 | 0.30 | 0.50 | K | 0.0276 | 0.0315 | 0.70 | 0.80 |
| D | 0.0295 | 0.0335 | 0.75 | 0.85 | L | 0.0224 | 0.0248 | 0.57 | 0.63 |
| E | 0.0118 | 0.0197 | 0.30 | 0.50 | M | 0.0020 | 0.0059 | 0.05 | 0.15 |
| F | 0.0039 | 0.0118 | 0.10 | 0.30 | N | 0.0039 | 0.0118 | 0.10 | 0.30 |
| G | 0.0039 | 0.0118 | 0.10 | 0.30 | O | 0 | 0.0031 | 0 | 0.08 |
| H | *0.0197 | - | *0.50 | - | | | | | |

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

SOT-523 Dimension (L forming)



*: Typical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|---------|--------|-------------|------|-----|---------|--------|-------------|------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.0091 | 0.0130 | 0.23 | 0.33 | I | *0.0197 | | *0.50 | |
| B | 0.0531 | 0.0768 | 1.35 | 1.95 | J | 0.0591 | 0.0669 | 1.50 | 1.70 |
| C | 0.0118 | 0.0197 | 0.30 | 0.50 | K | 0.0236 | 0.0315 | 0.60 | 0.80 |
| D | 0.0295 | 0.0374 | 0.75 | 0.95 | M | 0.0039 | 0.0079 | 0.10 | 0.20 |
| E | 0.0118 | 0.0197 | 0.30 | 0.50 | P | - | 10° | - | 10° |
| F | 0.0091 | 0.0130 | 0.23 | 0.33 | Q | - | 10° | - | 10° |
| G | 0.0091 | 0.0130 | 0.23 | 0.33 | | | | | |
| H | *0.0197 | | *0.50 | | | | | | |

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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