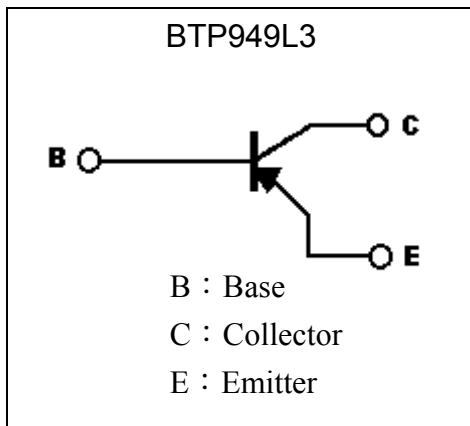
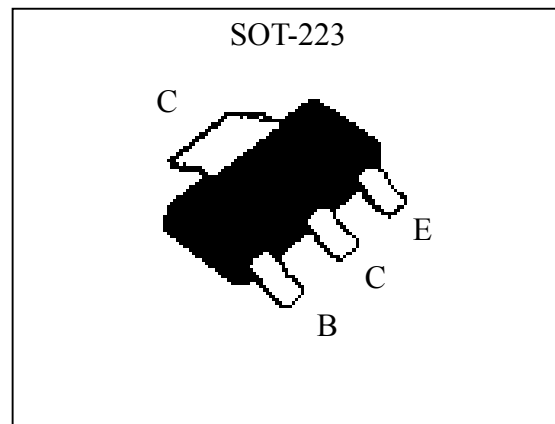


PNP Epitaxial Planar Power Transistor

BTP949L3

Features

- Extremely low equivalent on-resistance, $R_{CE(sat)} = 75m\Omega(max) @ I_C = -3A, I_B = -0.1A$
- 6A continuous current(up to 20A peak)
- Excellent current gain linearity
- Pb-free package

Symbol

Outline

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

| Parameter | Symbol | Limits | Unit |
|----------------------------------------|-----------|--------------|------------|
| Collector-Base Voltage | V_{CBO} | -50 | V |
| Collector-Emitter Voltage | V_{CEO} | -30 | V |
| Emitter-Base Voltage | V_{EBO} | -6 | V |
| Collector Current (DC) | I_C | -5.5 | A |
| Collector Current (Pulse) | I_{CP} | -20 (Note 1) | |
| Power Dissipation @ $T_A = 25^\circ C$ | P_{tot} | 3 (Note 2) | W |
| Junction Temperature | T_j | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | -55~+150 | $^\circ C$ |

Note : 1. Single Pulse , $P_w \leq 380\mu s$, Duty $\leq 2\%$.

2. The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 4 square inch minimum.

**Characteristics (Ta=25°C)**

| Symbol | Min. | Typ. | Max. | Unit | Test Conditions |
|-------------------------|------|------|-------|------|-----------------------------------------------------------------------------------|
| *BV _{CEO} | -30 | - | - | V | I _C =-10mA, I _B =0 |
| BV _{CBO} | -50 | - | - | V | I _C =-100μA, I _E =0 |
| BV _{CER} | -50 | - | - | V | I _C =-1μA, R _{BE} ≤1kΩ |
| BV _{EBO} | -6 | - | - | V | I _E =-100μA, I _C =0 |
| I _{CER} | - | - | -50 | μA | V _{CE} =-40V, R _{BE} ≤1kΩ |
| I _{CBO} | - | - | -50 | nA | V _{CB} =-40V, I _B =0 |
| I _{EBO} | - | - | -10 | nA | V _{EB} =-6V, I _C =0 |
| *V _{CE(sat)} 1 | - | -60 | -75 | mV | I _C =-500mA, I _B =-20mA |
| *V _{CE(sat)} 2 | - | -100 | -140 | mV | I _C =-1A, I _B =-20mA |
| *V _{CE(sat)} 3 | - | -190 | -270 | mV | I _C =-2A, I _B =-200mA |
| *V _{CE(sat)} 4 | - | -380 | -440 | mV | I _C =-5.5A, I _B =-500mA |
| *V _{BE(sat)} | - | -1.1 | -1.25 | V | I _C =-5.5A, I _B =-500mA |
| *V _{BE(on)} | - | - | -1.06 | V | V _{CE} =-1V, I _C =-5.5A |
| *h _{FE} 1 | 100 | 200 | - | - | V _{CE} =-1V, I _C =-10mA |
| *h _{FE} 2 | 100 | 200 | 300 | - | V _{CE} =-1V, I _C =-1A |
| *h _{FE} 3 | 60 | 80 | - | - | V _{CE} =-1V, I _C =-5A |
| *h _{FE} 4 | - | 10 | - | - | V _{CE} =-2V, I _C =-20A |
| f _T | - | 100 | - | MHz | V _{CE} =-10V, I _C =-100mA, f=50MHz |
| C _{ob} | - | 122 | - | pF | V _{CB} =-10V, f=1MHz |
| t _{on} | - | 120 | - | ns | V _{CC} =-10V, I _C =10I _{B1} =-10I _{B2} =4A, |
| t _{off} | - | 130 | - | ns | R _L =2.5Ω |

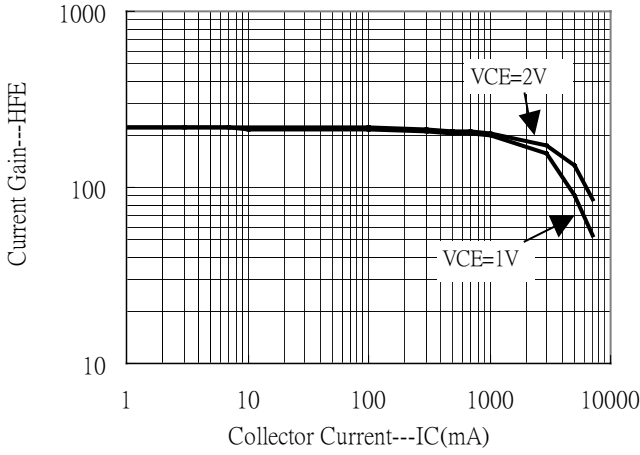
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

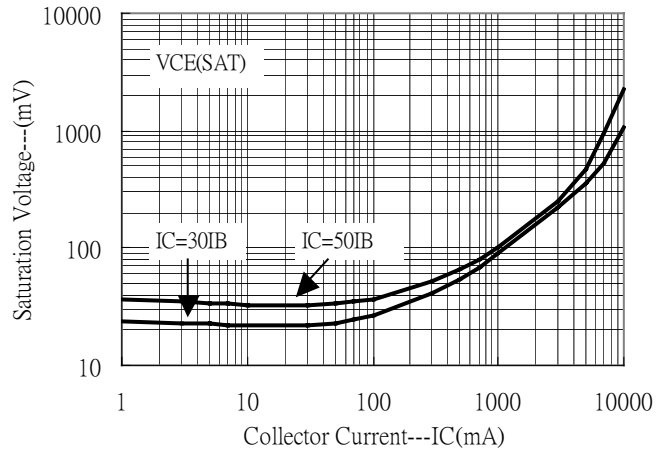
| Device | Package | Shipping | Marking |
|----------|----------------------|------------------------|---------|
| BTN949L3 | SOT-223 (Pb-free) | 1000 pcs / Tape & Reel | P949 |

Characteristic Curves

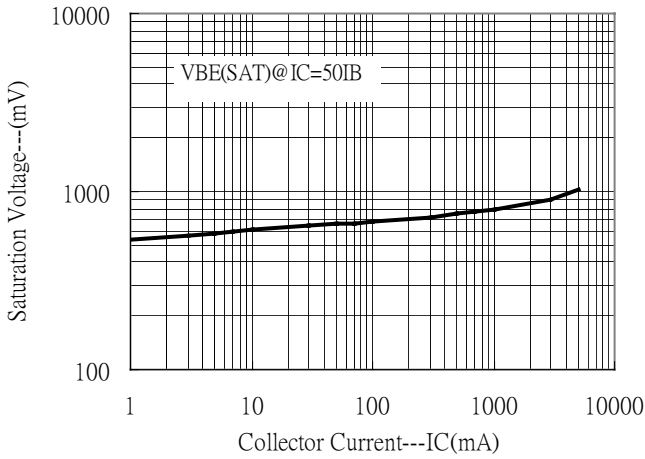
Current Gain vs Collector Current



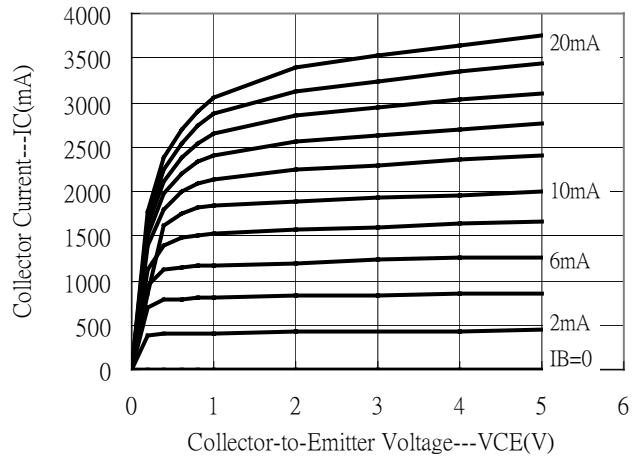
Saturation Voltage vs Collector Current



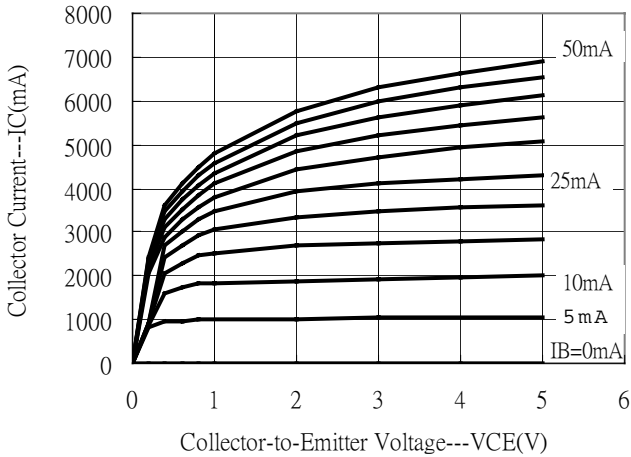
Saturation Voltage vs Collector Current



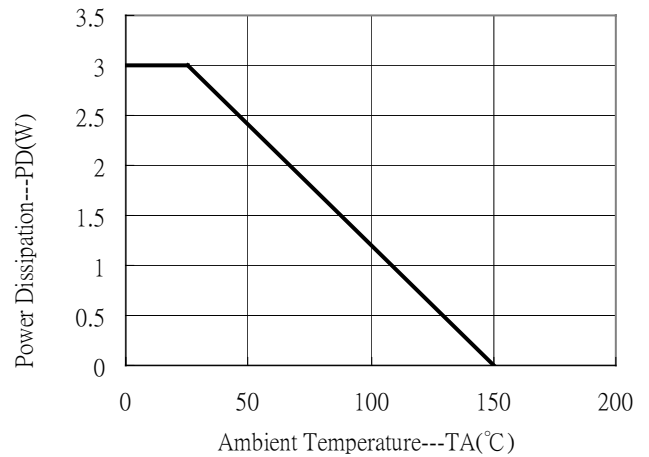
Grounded Emitter Output Characteristics



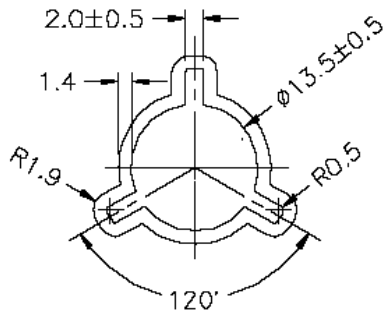
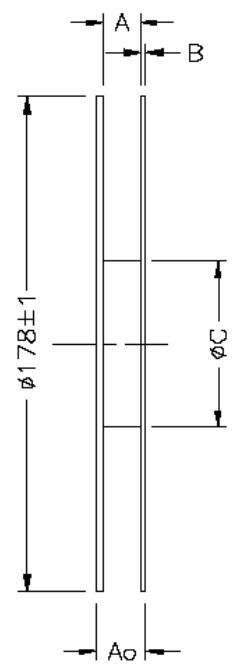
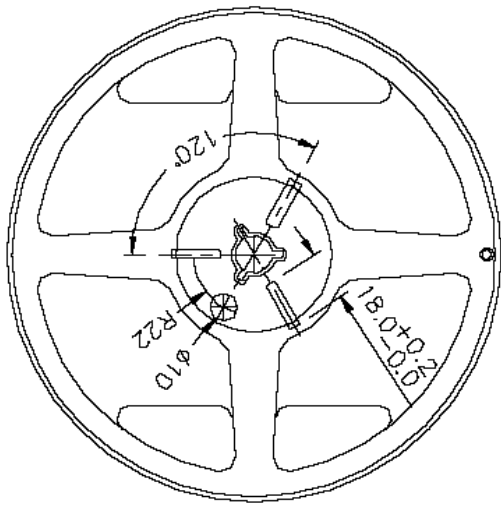
Grounded Emitter Output Characteristics



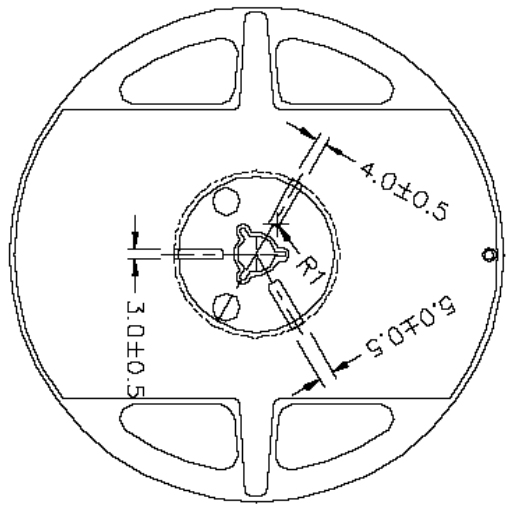
Power Derating Curve



Reel Dimension



| Width of carrier tape | 8 | 12 | 16 |
|-----------------------|------|------|------|
| $A \pm 0.05$ | 9.0 | 13.0 | 17.0 |
| $A_0 \pm 0.05$ | 12.0 | 16.0 | 20.0 |
| B | 1.5 | 1.5 | 1.5 |
| $\phi C \pm 0$ | 60 | 60 | 60 |

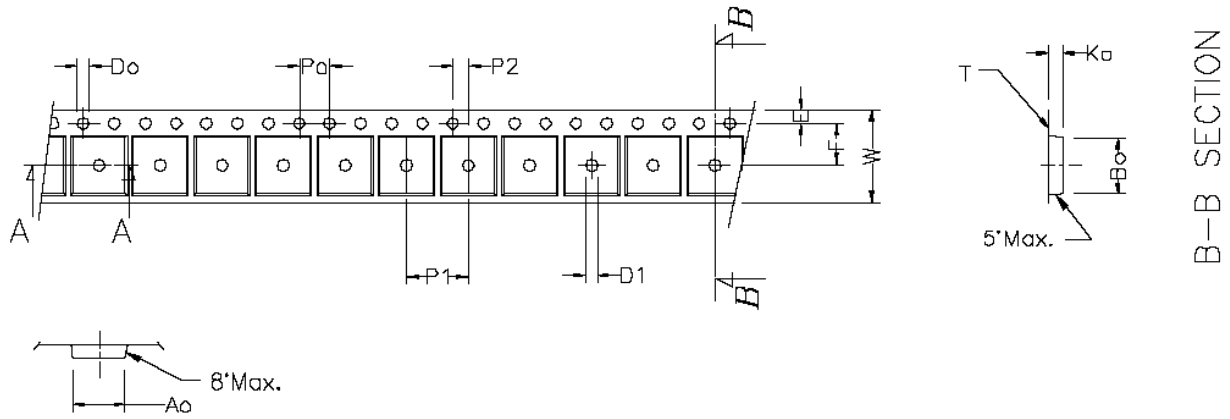


NOTE :

1. Material : Anti-static polystyrene.
2. Surface resistivity 10 Ω m/square

UNIT : millimeter

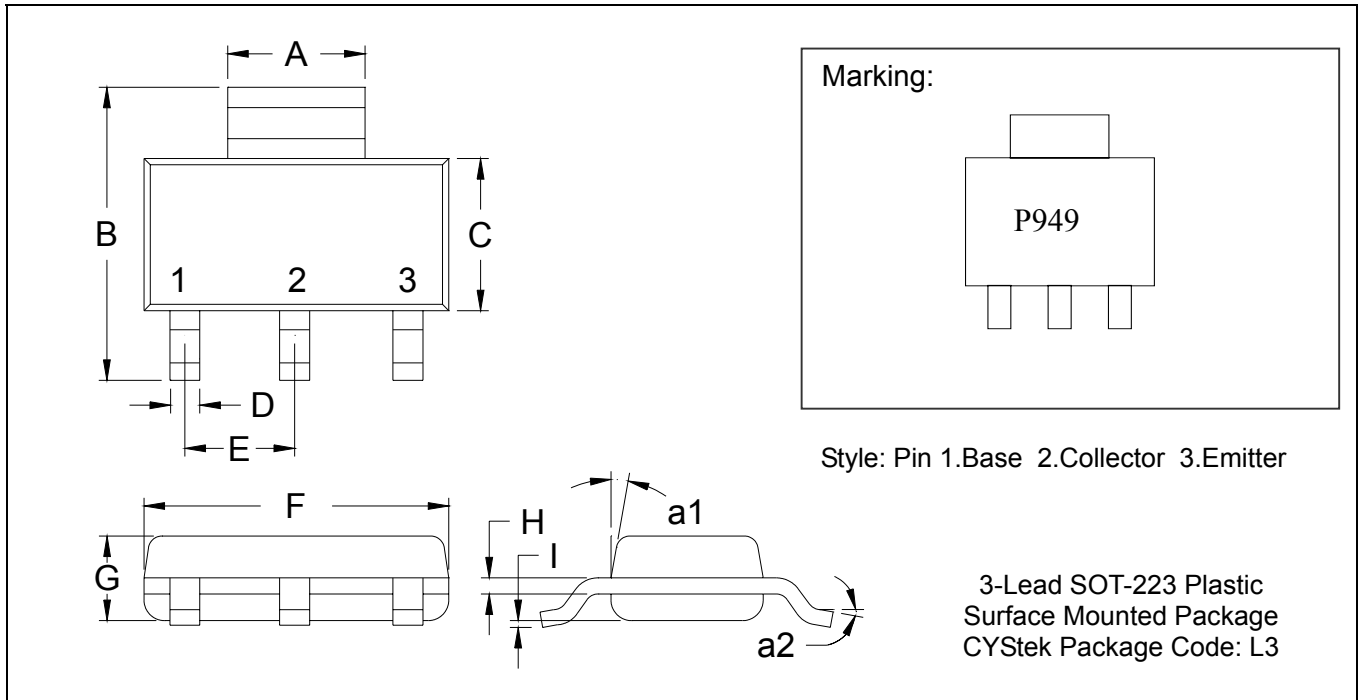
Carrier Tape Dimension



A-A SECTION

| | | | | | | | |
|--------|----------------|----------------|----------------|----------------|----------------------|----------------|------------------|
| symbol | A_o | B_o | K_o | P_o | P_1 | P_2 | T |
| Spec | 6.83 ± 0.1 | 7.42 ± 0.1 | 1.88 ± 0.1 | 4.0 ± 0.1 | 8.0 ± 0.10 | 2.0 ± 0.05 | 0.292 ± 0.02 |
| symbol | E | F | D_o | D_1 | W | $10P_o$ | |
| Spec | 1.75 ± 0.1 | 5.5 ± 0.05 | 1.60 ± 0.1 | 1.5 ± 0.25 | $12.0^{+0.3}_{-0.1}$ | 40.0 ± 0.2 | |

SOT-223 Dimension



*: Typical

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|-----|---------|--------|-------------|------|-----|--------|--------|-------------|------|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | 0.1142 | 0.1220 | 2.90 | 3.10 | G | 0.0551 | 0.0709 | 1.40 | 1.80 |
| B | 0.2638 | 0.2874 | 6.70 | 7.30 | H | 0.0098 | 0.0138 | 0.25 | 0.35 |
| C | 0.1299 | 0.1457 | 3.30 | 3.70 | I | 0.0008 | 0.0039 | 0.02 | 0.10 |
| D | 0.0236 | 0.0315 | 0.60 | 0.80 | a1 | *13° | - | *13° | - |
| E | *0.0906 | - | *2.30 | - | a2 | 0° | 10° | 0° | 10° |
| F | 0.2480 | 0.2638 | 6.30 | 6.70 | | | | | |

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: 42 Alloy; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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