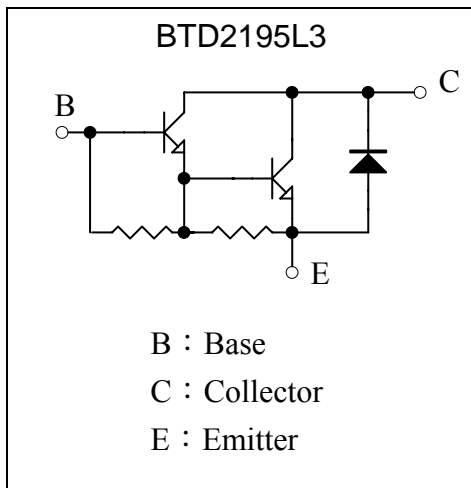
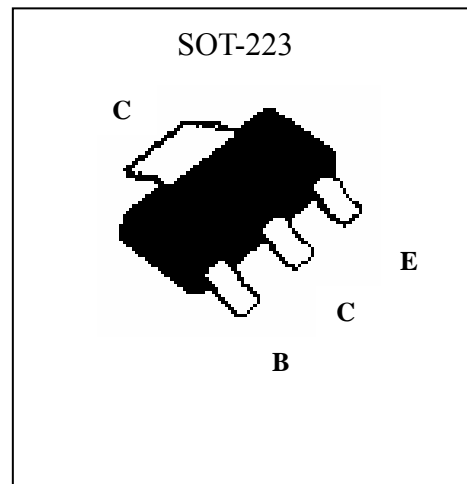


**NPN Epitaxial Planar Transistor**

# BTD2195L3

**Description**

The BTD2195L3 is a NPN Darlington transistor, designed for use in general purpose amplifier and low speed switching application. Pb-free package process is adopted.

**Equivalent Circuit**

**Outline**

**Absolute Maximum Ratings** ( $T_a=25^\circ\text{C}$ )

| Parameter                                  | Symbol          | Limits   | Unit               |
|--|-----------------|----------|--------------------|
| Collector-Base Voltage                     | $V_{CB0}$       | 130      | V                  |
| Collector-Emitter Voltage                  | $V_{CE0}$       | 120      | V                  |
| Emitter-Base Voltage                       | $V_{EB0}$       | 5        | V                  |
| Collector Current (DC)                     | $I_C$           | 4        | A                  |
| Collector Current (Pulse)                  | $I_{CP}$        | 6 (Note) | A                  |
| Power Dissipation @ $T_C=25^\circ\text{C}$ | $P_d$           | 5        | W                  |
| Thermal Resistance, Junction to Case       | $R_{\theta JC}$ | 25       | $^\circ\text{C/W}$ |
| Junction Temperature                       | $T_j$           | 150      | $^\circ\text{C}$   |
| Storage Temperature                        | $T_{stg}$       | -55~+150 | $^\circ\text{C}$   |

Note : Single Pulse  $P_w \leq 350\mu\text{s}$ , Duty  $\leq 2\%$ .

**Characteristics (Ta=25°C)**

| Symbol                | Min. | Typ. | Max. | Unit | Test Conditions                                  |
|-----------------------|------|------|------|------|--|
| BV <sub>CEO</sub>     | 120  | -    | -    | V    | I <sub>C</sub> =1mA, I <sub>B</sub> =0           |
| BV <sub>CBO</sub>     | 140  | -    | -    | V    | I <sub>C</sub> =100μA, I <sub>E</sub> =0         |
| I <sub>CBO</sub>      | -    | -    | 100  | μA   | V <sub>CB</sub> =100V, I <sub>E</sub> =0         |
| I <sub>CEO</sub>      | -    | -    | 100  | μA   | V <sub>CE</sub> =100V, I <sub>E</sub> =0         |
| I <sub>EBO</sub>      | -    | -    | 2    | mA   | V <sub>EB</sub> =5V, I <sub>C</sub> =0           |
| *V <sub>CE(sat)</sub> | -    | -    | 2.5  | V    | I <sub>C</sub> =2A, I <sub>B</sub> =2mA          |
| *V <sub>BE(on)</sub>  |      |      | 2.3  | V    | V <sub>CE</sub> =4V, I <sub>C</sub> =2A          |
| *h <sub>FE1</sub>     | 1000 | -    | -    | -    | V <sub>CE</sub> =4V, I <sub>C</sub> =1A          |
| *h <sub>FE2</sub>     | 500  | -    | -    | -    | V <sub>CE</sub> =4V, I <sub>C</sub> =2A          |
| Cob                   | -    |      | 200  | pF   | V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz |

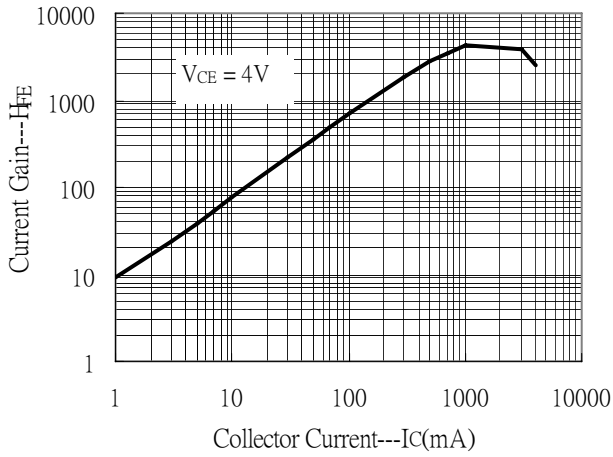
\*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

**Ordering Information**

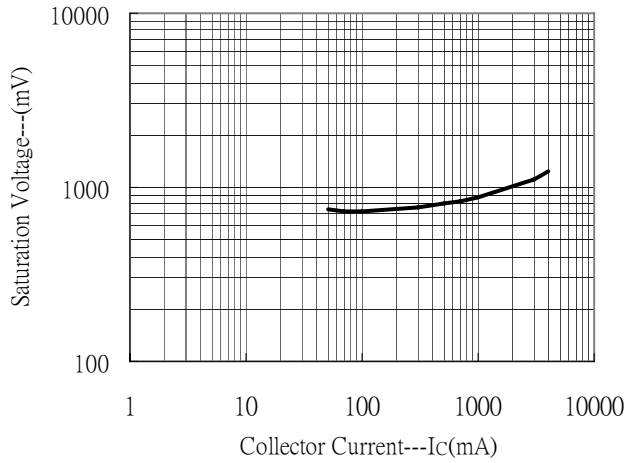
| Device    | Package              | Shipping               | Marking |
|-----------|----------------------|------------------------|---------|
| BTD2195L3 | SOT-223<br>(Pb-free) | 2500 pcs / Tape & Reel | DP      |

## Characteristic Curves

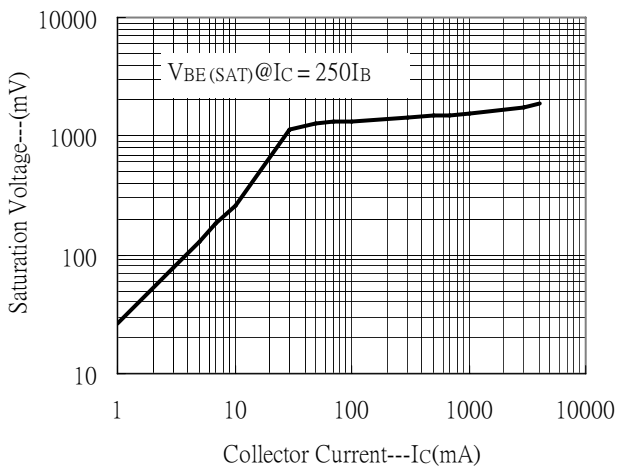
Current Gain vs Collector Current



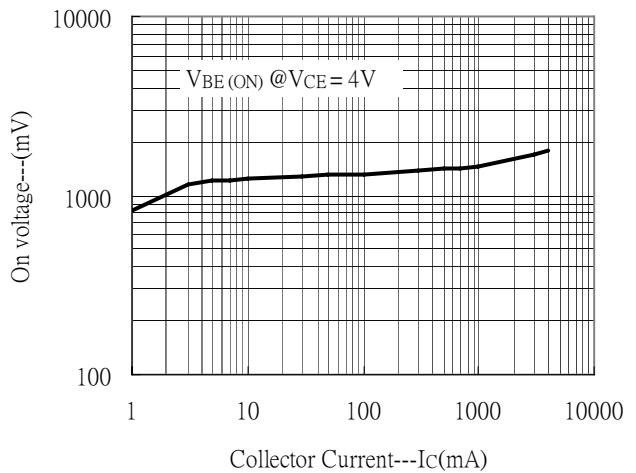
Saturation Voltage vs Collector Current



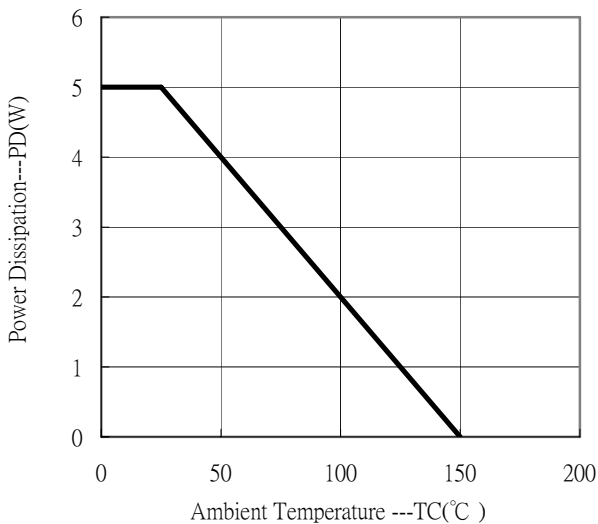
Saturation Voltage vs Collector Current



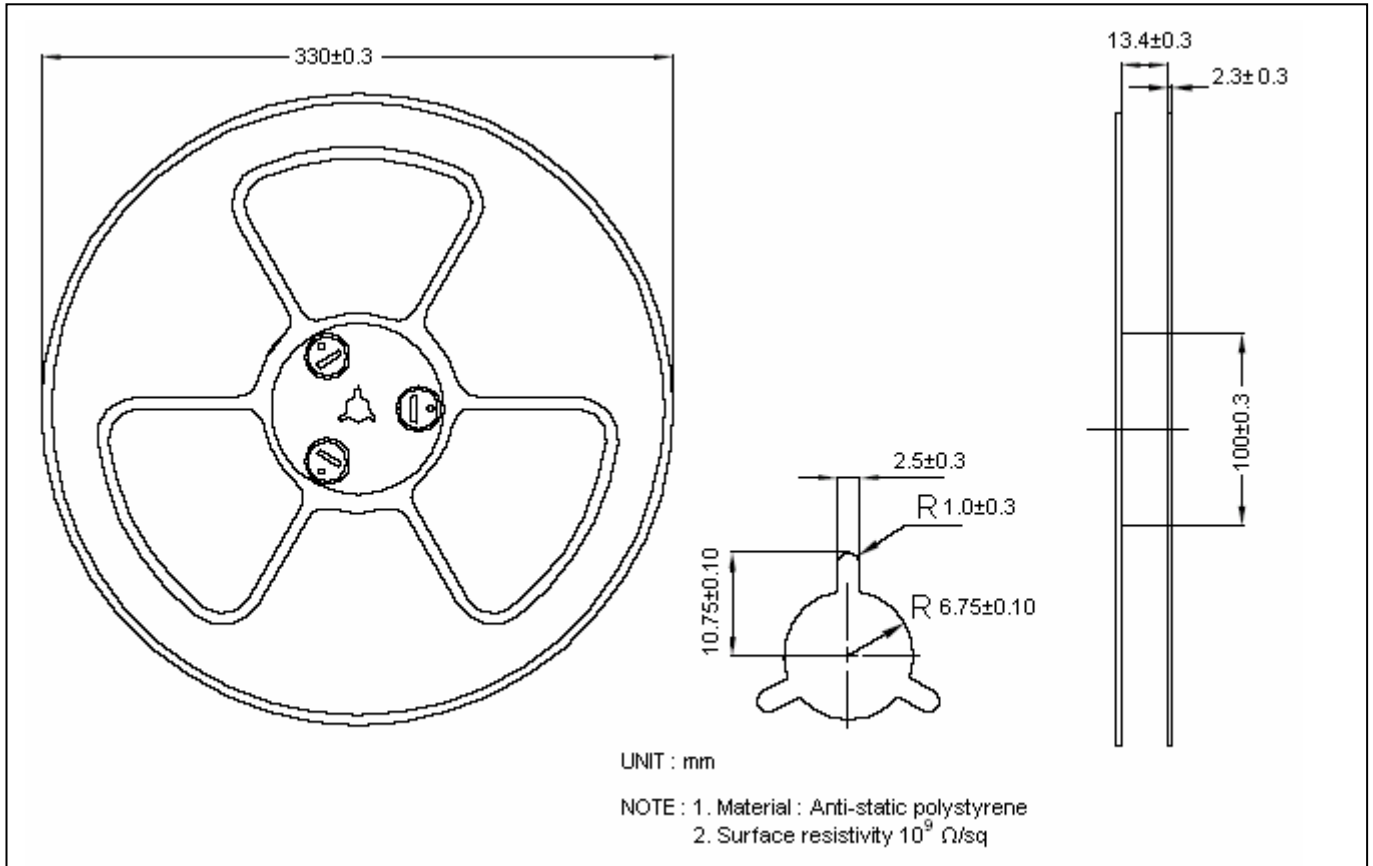
On voltage vs Collector Current



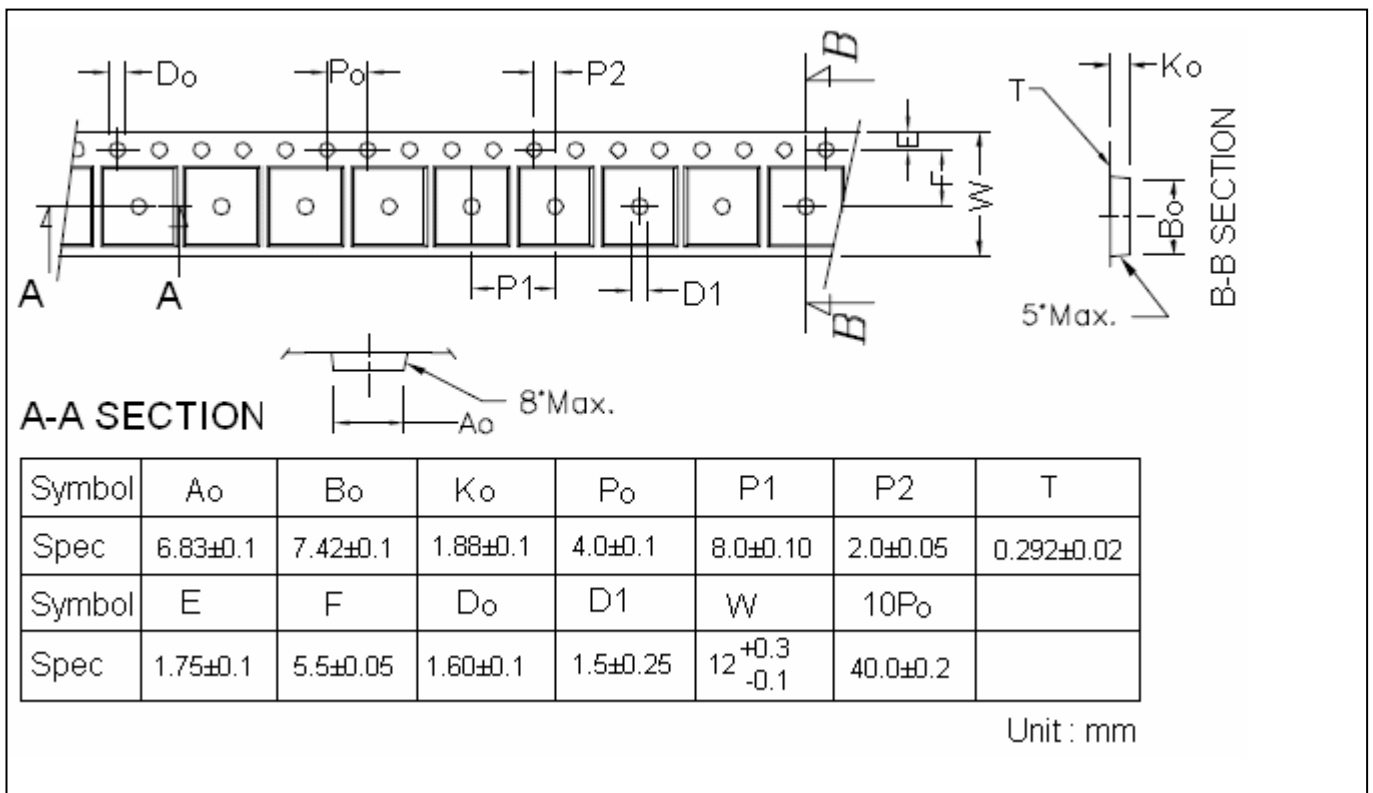
Power Derating Curve



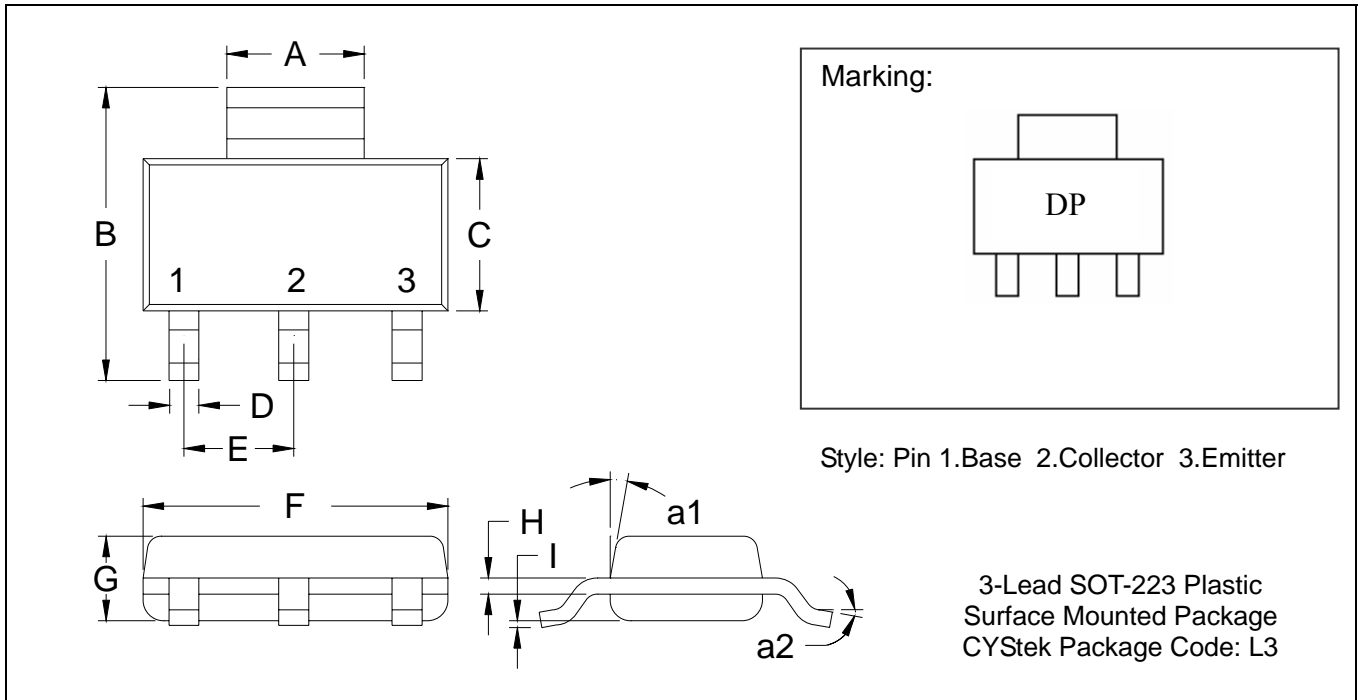
**Reel Dimension**



**Carrier Tape Dimension**



**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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