

# 2SD1541

## Silicon NPN Triple-Diffused Junction Mesa Type

### Horizontal Deflection Output

#### ■ Features

- Damper diode built-in
- High breakdown voltage and high reliability by glass passivation
- High speed switching
- Wide area of safety operation (ASO)
- "Full Pack" package for simplified mounting on a heat sink with one screw

#### ■ Absolute Maximum Ratings (T<sub>c</sub>=25°C)

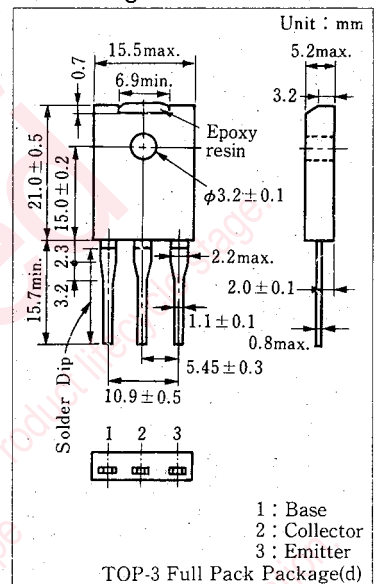
| Item                        | Symbol            | Value      | Unit |
|-----------------------------|-------------------|------------|------|
| Collector-base voltage      | V <sub>CB0</sub>  | 1500       | V    |
| Collector-emitter voltage   | V <sub>CES</sub>  | 1500       | V    |
| Emitter-base voltage        | V <sub>EBO</sub>  | 5          | V    |
| Collector current           | I <sub>C</sub>    | 3          | A    |
| Peak collector current      | I <sub>CP</sub> * | 10         | A    |
| Peak base current           | I <sub>BP</sub>   | 3.5        | A    |
| Reverse peak base current   | I <sub>BP</sub>   | -2.5       | A    |
| Collector power dissipation | P <sub>C</sub>    | 50         | W    |
| Junction temperature        | T <sub>j</sub>    | 130        | °C   |
| Storage temperature         | T <sub>stg</sub>  | -55 ~ +130 | °C   |

\* Non repetitive peak value

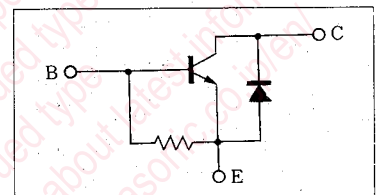
#### ■ Electrical Characteristics (T<sub>c</sub>=25°C)

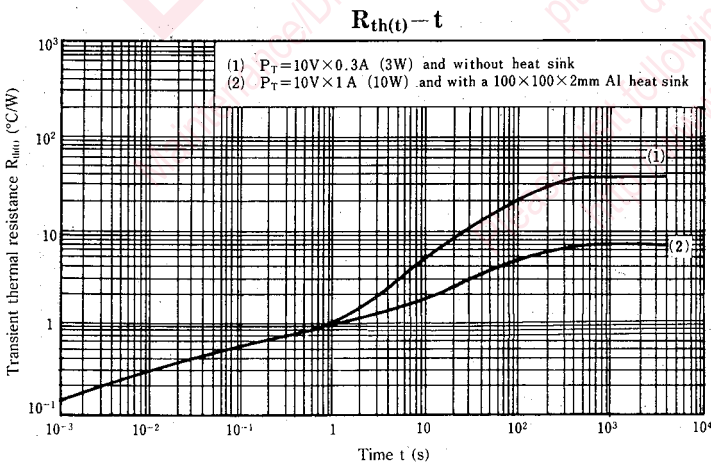
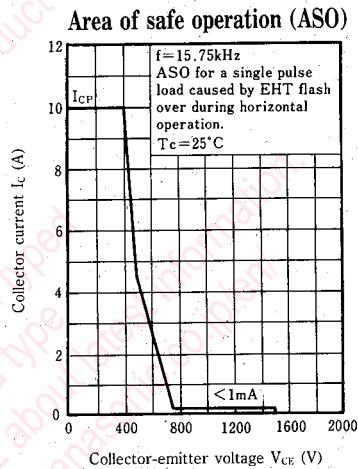
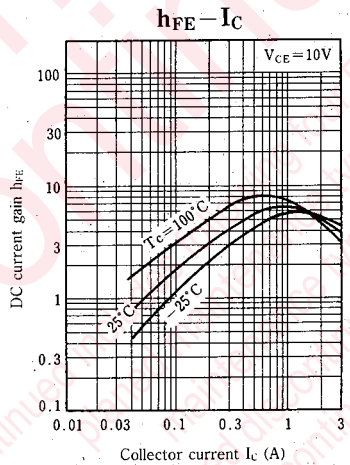
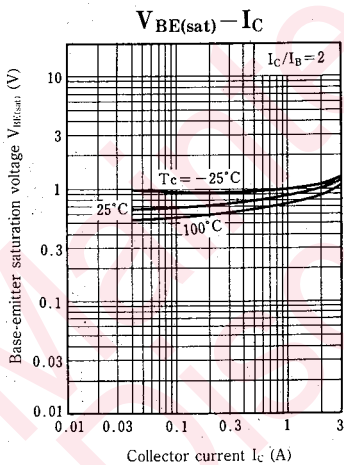
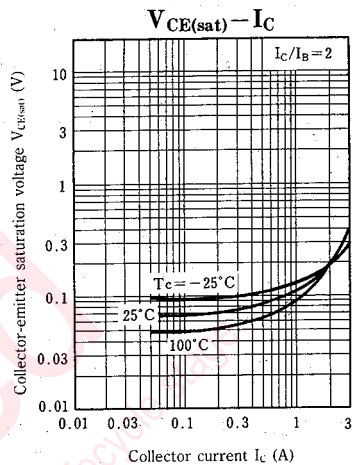
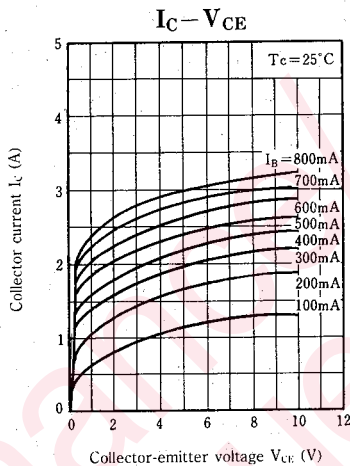
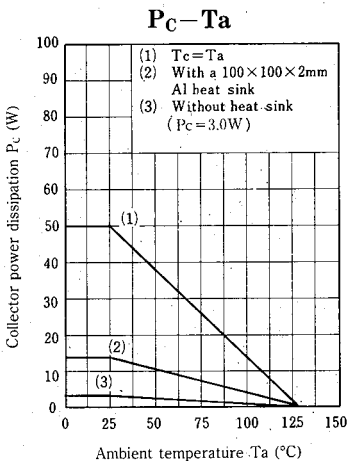
| Item                                 | Symbol               | Condition  | min. | typ. | max. | Unit |
|--------------------------------------|----------------------|--|------|------|------|------|
| Collector cutoff current             | I <sub>CBO</sub>     | V <sub>CB</sub> =750 V, I <sub>E</sub> =0            |      |      | 50   | μA   |
|                                      |                      | V <sub>CB</sub> =1500 V, I <sub>E</sub> =0           |      |      | 1    | mA   |
| Emitter-base voltage                 | V <sub>EBO</sub>     | I <sub>E</sub> =500 mA, I <sub>C</sub> =0            | 5    |      |      | V    |
| DC current gain                      | h <sub>FE</sub>      | V <sub>CE</sub> =10 V, I <sub>C</sub> =2 A           | 4    |      | 12   |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =2 A, I <sub>B</sub> =0.75 A          |      |      | 5    | V    |
| Base-emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> =2 A, I <sub>B</sub> =0.75 A          |      |      | 1.5  | V    |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A, f=0.5MHz |      | 2    |      | MHz  |
| Fall time                            | t <sub>f</sub>       | I <sub>C</sub> =2 A, I <sub>Bend</sub> =0.75 A       |      |      | 0.75 | μs   |
| Storage time                         | t <sub>stg</sub>     | I <sub>leak</sub> =5 μH                              | 3    |      | 7    | μs   |
| Diode forward voltage                | V <sub>F</sub>       | I <sub>C</sub> =-4 A, I <sub>B</sub> =0              |      |      | -2.2 | V    |

#### ■ Package Dimensions



#### ■ Inner Circuit





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