

2SC3507

Silicon NPN triple diffusion planar type

For high breakdown voltage high-speed switching

■ Features

- High-speed switching
- High collector-base voltage (Emitter open) V_{CBO}
- Satisfactory linearity of forward current transfer ratio h_{FE}
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25^\circ C$

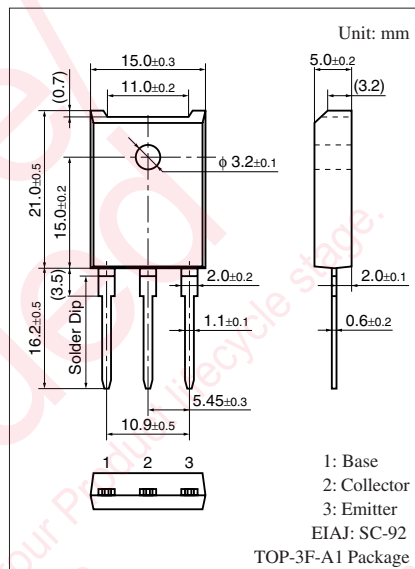
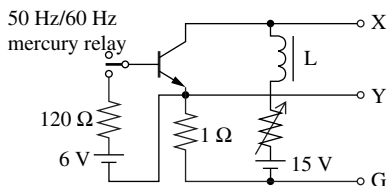
| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|--------------------|------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 1 000 | V |
| Collector-emitter voltage (E-B short) | V_{CES} | 1 000 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 800 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 7 | V |
| Collector current | I_C | 5 | A |
| Base current | I_B | 3 | A |
| Peak collector current | I_{CP} | 10 | A |
| Collector power dissipation | P_C | 80 | W |
| | | $T_a = 25^\circ C$ | |
| Junction temperature | T_j | 150 | $^\circ C$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ C$ |

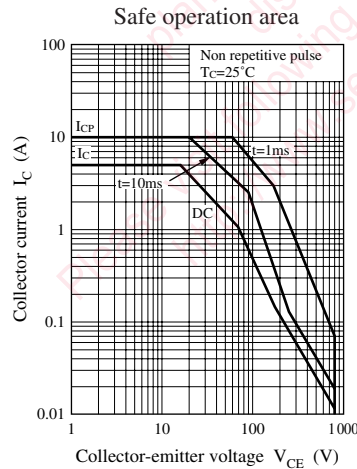
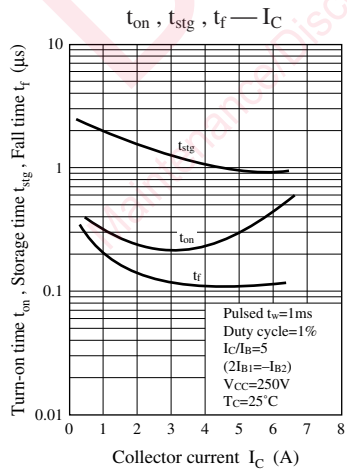
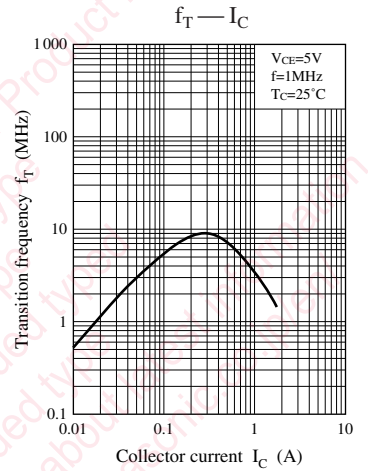
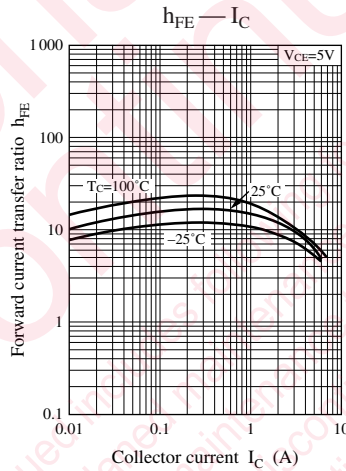
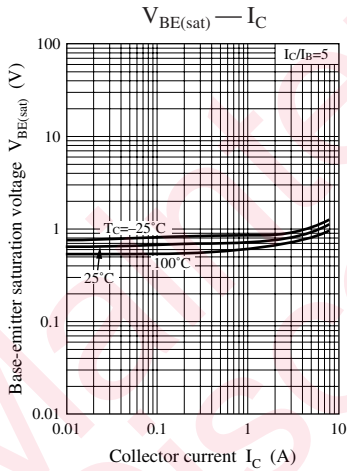
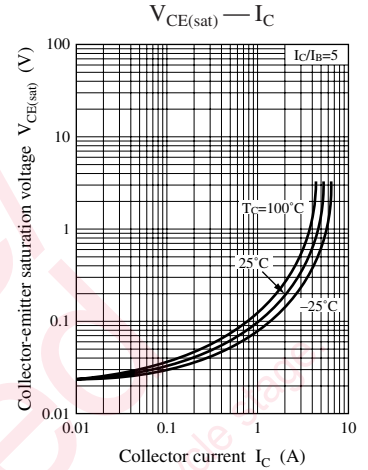
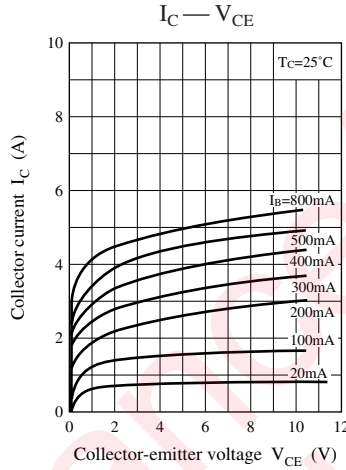
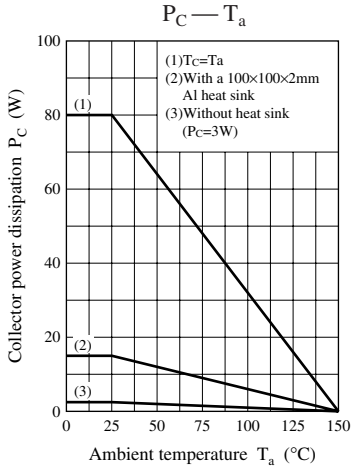
■ Electrical Characteristics $T_C = 25^\circ C \pm 3^\circ C$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|----------------|--|-----|-----|-----|---------|
| Collector-emitter sustaining voltage * | $V_{CEO(SUS)}$ | $I_C = 0.5 A, L = 50 mH$ | 800 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 1 000 V, I_E = 0$ | | | 50 | μA |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = 7 V, I_C = 0$ | | | 50 | μA |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 5 V, I_C = 3 A$ | 6 | | | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 3 A, I_B = 0.6 A$ | | | 1.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 3 A, I_B = 0.6 A$ | | | 1.5 | V |
| Transition frequency | f_T | $V_{CE} = 5 V, I_C = 0.5 A, f = 1 MHz$ | | 6 | | MHz |
| Turn-on time | t_{on} | $I_C = 3 A$ | | | 1.0 | μs |
| Storage time | t_{stg} | $I_{B1} = 0.6 A, I_{B2} = -1.2 A$ | | | 2.5 | μs |
| Fall time | t_f | $V_{CC} = 250 V$ | | | 0.5 | μs |

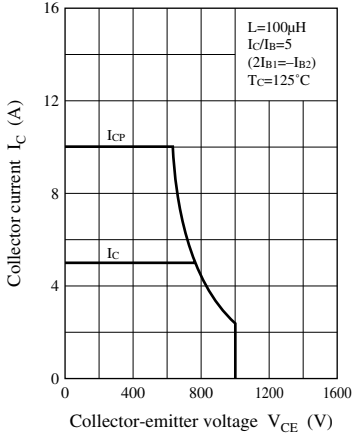
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: $V_{CEO(SUS)}$ test circuit

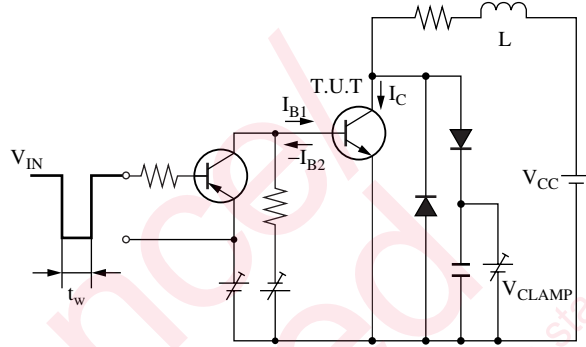




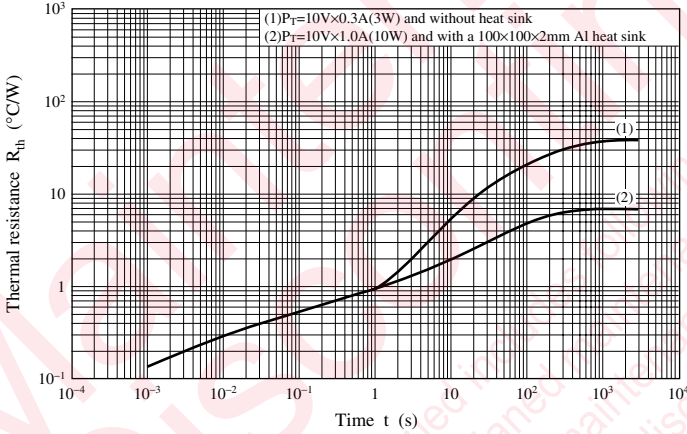
Safe operation area (Reserve bias)



Safe operation area (Reserve bias) measurement circuit



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