

TOSHIBA Transistor Silicon NPN Triple Diffused Type

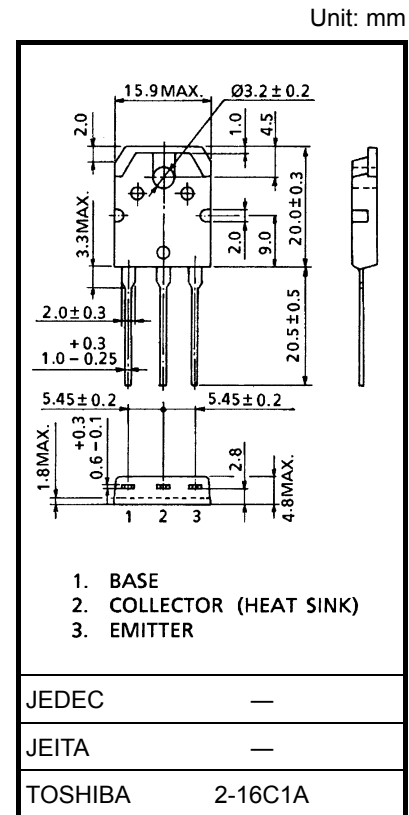
2SC5354

High-Speed and High-Voltage Switching Applications
 Switching Regulator Applications
 High-Speed DC-DC Converter Applications

- Excellent switching times: $t_r = 0.7 \mu s$ (max)
 $t_f = 0.5 \mu s$ (max) ($I_C = 2 A$)
- High breakdown voltage: $V_{CEO} = 800 V$

Absolute Maximum Ratings (Tc = 25°C)

| Characteristics | Symbol | Rating | Unit |
|--|-----------|------------|------|
| Collector-base voltage | V_{CBO} | 900 | V |
| Collector-emitter voltage | V_{CEO} | 800 | V |
| Emitter-base voltage | V_{EBO} | 7 | V |
| Collector current | DC | I_C | 5 |
| | Pulse | I_{CP} | 8 |
| Base current | I_B | 2 | A |
| Collector power dissipation (Tc = 25°C) | P_C | 100 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature range | T_{stg} | -55 to 150 | °C |



Weight: 4.7 g (typ.)

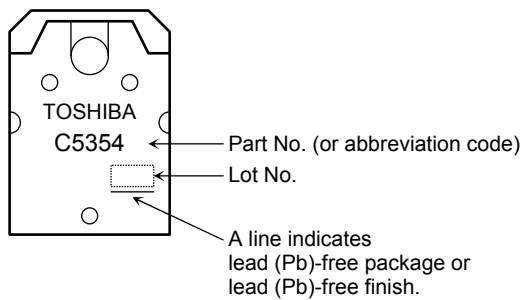
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics (Tc = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------|----------------|---|---|------|-----|---------------|
| Collector cut-off current | | I_{CBO} | $V_{CB} = 800 \text{ V}, I_E = 0$ | — | — | 100 | μA |
| Emitter cut-off current | | I_{EBO} | $V_{EB} = 7 \text{ V}, I_C = 0$ | — | — | 1 | mA |
| Collector-base breakdown voltage | | $V_{(BR) CBO}$ | $I_C = 1 \text{ mA}, I_E = 0$ | 900 | — | — | V |
| Collector-emitter breakdown voltage | | $V_{(BR) CEO}$ | $I_C = 10 \text{ mA}, I_B = 0$ | 800 | — | — | V |
| DC current gain | | $h_{FE} (1)$ | $V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$ | 10 | — | — | |
| | | $h_{FE} (2)$ | $V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$ | 15 | — | — | |
| Collector-emitter saturation voltage | | $V_{CE (sat)}$ | $I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$ | — | — | 1.0 | V |
| Base-emitter saturation voltage | | $V_{BE (sat)}$ | $I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$ | — | — | 1.3 | V |
| Switching time | Rise time | t_r | <p>$V_{CC} \approx -360 \text{ V}$ $20 \mu\text{s}$ $I_C = 2 \text{ A}$ I_{B1} I_{B2} 180Ω Input Output</p> | — | — | 0.7 | μs |
| | Storage time | t_{stg} | | — | — | 4.0 | |
| | Fall time | t_f | | $I_{B1} = 0.25 \text{ A}, I_{B2} = -0.75 \text{ A},$ duty cycle $\leq 1\%$ | — | — | |

Marking



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