

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

2SD2129

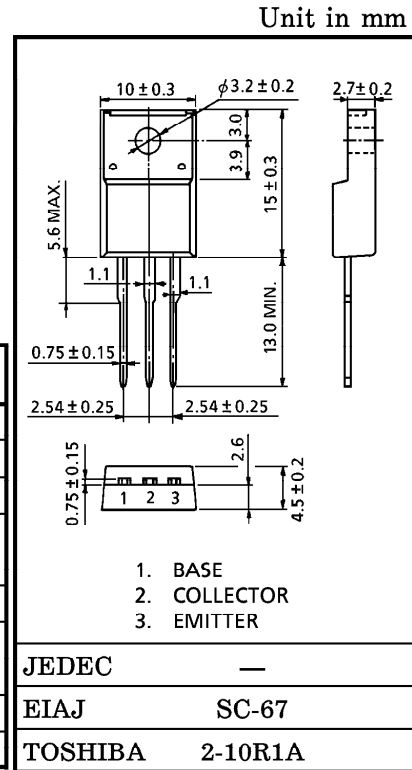
HIGH POWER SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

- High DC Current Gain : $h_{FE} = 2000$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = 1.5V$ (Max.)

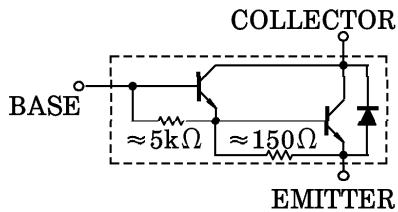
MAXIMUM RATINGS ($T_a = 25^\circ C$)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|--------------------|-----------|-----------|------------|
| Collector-Base Voltage | | V_{CBO} | 100 | V |
| Collector-Emitter Voltage | | V_{CEO} | 100 | V |
| Emitter-Base Voltage | | V_{EBO} | 7 | V |
| Collector Current | DC | I_C | 3 | A |
| | Pulse | I_{CP} | 5 | |
| Base Current | | I_B | 0.5 | A |
| Collector Power Dissipation | $T_a = 25^\circ C$ | P_C | 2.0 | W |
| | $T_c = 25^\circ C$ | | 20 | |
| Junction Temperature | | T_j | 150 | $^\circ C$ |
| Storage Temperature Range | | T_{stg} | -55 ~ 150 | $^\circ C$ |



Weight : 1.7g (Typ.)

EQUIVALENT CIRCUIT



961001EAA2

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- The information contained herein is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|--------------|---------------------------|--|------|------|-------|------|
| Collector Cut-off Current | | ICBO | V _{CB} = 100V, I _E = 0 | — | — | 100 | μA |
| Emitter Cut-off Current | | I _{EBO} | V _{EB} = 6V, I _C = 0 | — | — | 2.5 | mA |
| Collector-Emitter Breakdown Voltage | | V _{(BR) CEO} | I _C = 30mA, I _B = 0 | 100 | — | — | V |
| DC Current Gain | | h _{FE} (1) | V _{CE} = 3V, I _C = 1.5A | 2000 | — | 15000 | |
| | | h _{FE} (2) | V _{CE} = 3V, I _C = 3A | 1000 | — | — | |
| Collector-Emitter Saturation Voltage | | V _{CE (sat)} (1) | I _C = 1.5A, I _B = 3mA | — | — | 1.5 | V |
| | | V _{CE (sat)} (2) | I _C = 3A, I _B = 12mA | — | — | 2.0 | |
| Base-Emitter Saturation Voltage | | V _{BE (sat)} | I _C = 1.5A, I _B = 3mA | — | — | 2.0 | V |
| Switching Time | Turn-on Time | t _{on} | <p>IN-PUT 20 μs I_{B1} I_{B2} OUTPUT 20 Ω V_{CC} = 30V I_{B1} = -I_{B2} = 3mA, DUTY CYCLE ≤ 1%</p> | — | 1.0 | — | μs |
| | Storage Time | t _{stg} | | — | 5.0 | — | |
| | Fall Time | t _f | | — | 2.0 | — | |

