

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (DARLINGTON)

2SB1617

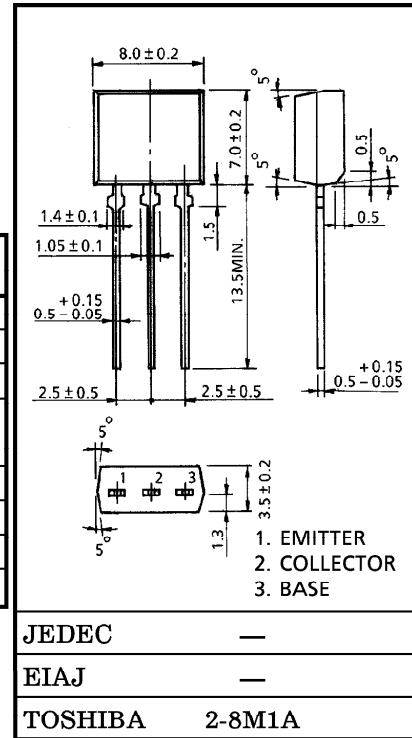
MICRO MOTOR DRIVE, HAMMER DRIVE APPLICATIONS
 POWER SWITCHING APPLICATIONS
 POWER AMPLIFIER APPLICATION

Unit in mm

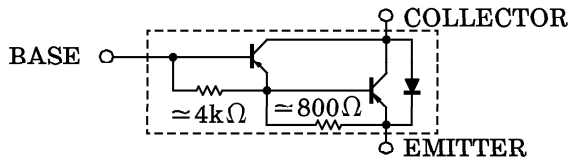
- High DC Current Gain : $h_{FE} = 2000$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = -1.5V$ (Max.)

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} | -8 | V |
| Collector Current | DC | I_C | -2 | A |
| | Pulse | I_{CP} | -3 | |
| Base Current | | I_B | -0.5 | A |
| Collector Power Dissipation | | P_C | 1.3 | W |
| Junction Temperature | | T_j | 150 | $^\circ C$ |
| Storage Temperature Range | | T_{stg} | -55~150 | $^\circ C$ |



EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|-------------------|---------------|------------------------------------|---|------|------|---------|
| Collector Cut-off Current | | I_{CBO} | $V_{CB} = -80V, I_E = 0$ | — | — | -10 | μA |
| Emitter Cut-off Current | | I_{EBO} | $V_{EB} = -8V, I_C = 0$ | — | — | -4 | mA |
| Collector-Emitter Breakdown Voltage | | $V_{(BR)CEO}$ | $I_C = -10mA, I_B = 0$ | -100 | — | — | V |
| DC Current Gain | | h_{FE} | $V_{CE} = -2V, I_C = -1A$ | 2000 | — | — | |
| Saturation Voltage | Collector-Emitter | $V_{CE(sat)}$ | $I_C = -1A, I_B = -1mA$ | — | — | -1.5 | V |
| | Base-Emitter | $V_{BE(sat)}$ | $I_C = -1A, I_B = -1mA$ | — | — | -2.0 | |
| Transition Frequency | | f_T | $V_{CE} = -2V, I_C = -0.5A$ | — | 50 | — | MHz |
| Collector Output Capacitance | | C_{ob} | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | — | 27 | — | pF |
| Switching Time | Turn-on Time | t_{on} | | — | 0.4 | — | μs |
| | Storage Time | t_{stg} | | — | 2.0 | — | |
| | Fall Time | t_f | | $-I_{B1} = I_{B2} = 1mA,$ $DUTY CYCLE \leq 1%$ | — | 0.4 | |

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