

TOSHIBA FIELD EFFECT TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SC5143

HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

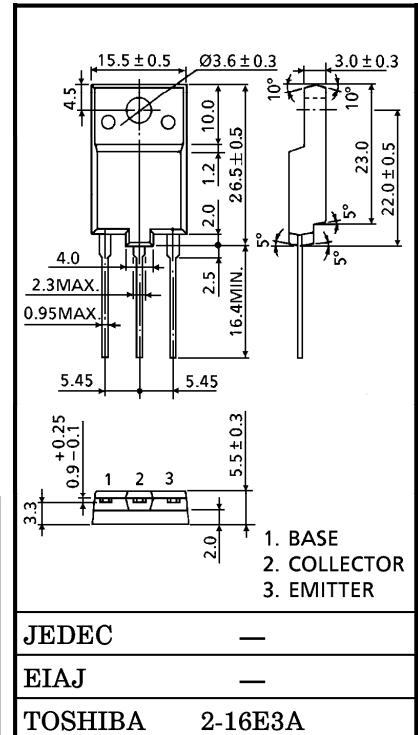
HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : $V_{CB0} = 1700\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed : $t_f = 0.2\ \mu\text{s (Typ.)}$
- Built-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

MAXIMUM RATINGS (Ta = 25°C)

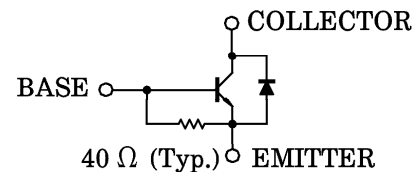
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|-----------|----------|------|
| Collector-Base Voltage | V_{CB0} | 1700 | V |
| Collector-Emitter Voltage | V_{CEO} | 700 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | DC | I_C | 10 |
| | Pulse | I_{CP} | 20 |
| Base Current | I_B | 5 | A |
| Collector Power Dissipation (Tc = 25°C) | P_C | 50 | W |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_{stg} | -55~150 | °C |

Unit in mm



Weight : 5.5 g (Typ.)

EQUIVALENT CIRCUIT



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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 | | I_{CBO} | $V_{CB} = 1700\text{ V}, I_E = 0$ | — | — | 1 | mA |
| Emitter Cut-off Current | | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | 83 | — | 250 | mA |
| Emitter-Base Breakdown Voltage | | V_{EBO} | $I_E = 400\text{ mA}, I_C = 0$ | 5 | — | — | V |
| DC Current Gain | | $h_{FE}(1)$ | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$ | 8 | — | 25 | |
| | | $h_{FE}(2)$ | $V_{CE} = 5\text{ V}, I_C = 6\text{ A}$ | 4 | — | 8.5 | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C = 6\text{ A}, I_B = 1.5\text{ A}$ | — | — | 3 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | $I_C = 6\text{ A}, I_B = 1.5\text{ A}$ | — | 0.9 | 1.2 | V |
| Forward Voltage (Damper Diode) | | $-V_F$ | $I_F = 6\text{ A}$ | — | 1.45 | 1.8 | V |
| Transition Frequency | | f_T | $V_{CE} = 10\text{ V}, I_E = 0.1\text{ A}$ | — | 2 | — | MHz |
| Collector Output Capacitance | | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 185 | — | pF |
| Switching Time | Storage Time | t_{stg} | $I_{CP} = 5\text{ A}, I_{B1}(\text{end}) = 1.0\text{ A}$ | — | 4 | 6 | μs |
| | Fall Time | t_f | $f_H = 31.5\text{ kHz}$ | — | 0.2 | 0.5 | |

