TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

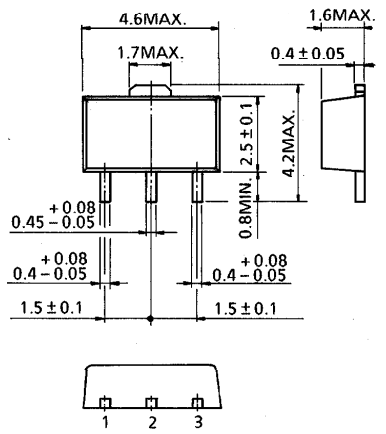
# 2SC2873

POWER AMPLIFIER APPLICATIONS

POWER SWITCHING APPLICATIONS

- Low Saturation Voltage : $V_{CE\ (sat)}$ = 0.5V (Max.) ($I_C$ = 1A)
- High Speed Switching Time : $t_{stg}$ = 1.0μs (Typ.)
- $P_C$ = 1~2W (Mounted on Ceramic Substrate)
- Small Flat Package
- Complementary to 2SA1213

Unit in mm




1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

| | |
|---|---|
| JEDEC | — |
| EIAJ | SC-62 |
| TOSHIBA | 2-5K1A |

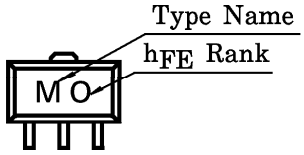
Weight : 0.05g

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 50 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 50 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 2 | A |
| Base Current | $I_B$ | 0.4 | A |
| Collector Power Dissipation | $P_C$ | 500 | mW |
| Collector Power Dissipation | $P_C$ (Note) | 1000 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~150 | °C |

(Note) : Mounted on ceramic substrate (250mm²×0.8t)

MARKING

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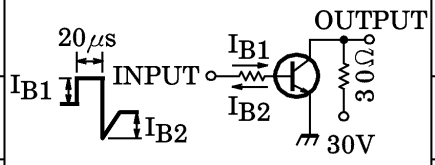
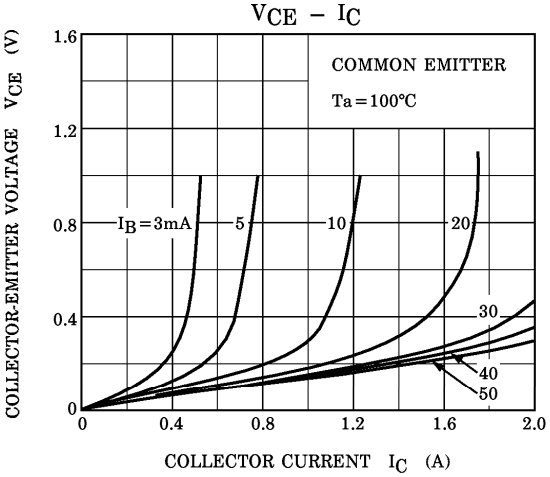
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

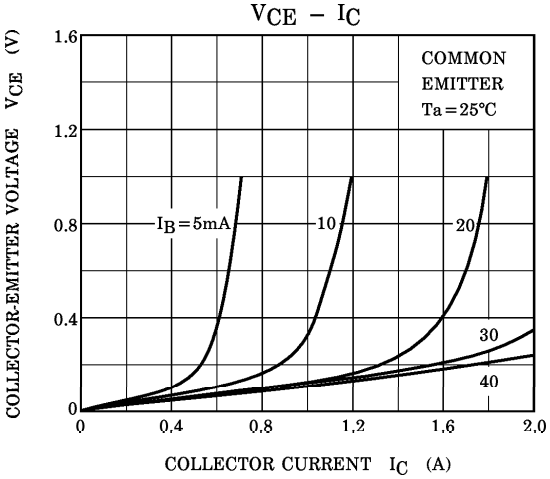
| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|
| Collector Cut-off Current | | $I_{CBO}$ | $V_{CB}$ = 50V, $I_E$ = 0 | — | — | 0.1 | μA |
| Emitter Cut-off Current | | $I_{EBO}$ | $V_{EB}$ = 5V, $I_C$ = 0 | — | — | 0.1 | μA |
| Collector-Emitter Breakdown Voltage | | $V_{(BR)\,CEO}$ | $I_C$ = 10mA, $I_B$ = 0 | 50 | — | — | V |
| DC Current Gain | | $h_{FE\,(1)}$ (Note) | $V_{CE}$ = 2V, $I_C$ = 0.5A | 70 | — | 240 | |
| | | $h_{FE\,(2)}$ | $V_{CE}$ = 2V, $I_C$ = 2.0A | 20 | — | — | |
| Collector-Emitter Saturation Voltage | | $V_{CE\,(sat)}$ | $I_C$ = 1A, $I_B$ = 0.05A | — | — | 0.5 | V |
| Base-Emitter Saturation Voltage | | $V_{BE\,(sat)}$ | $I_C$ = 1A, $I_B$ = 0.05A | — | — | 1.2 | V |
| Transition Frequency | | $f_T$ | $V_{CE}$ = 2V, $I_C$ = 0.5A | — | 120 | — | MHz |
| Collector Output Capacitance | | $C_{ob}$ | $V_{CB}$ = 10V, $I_E$ = 0, f = 1MHz | — | 30 | — | pF |
| Switching Time | Turn-on Time | $t_{on}$ |  | — | 0.1 | — | μs |
| | Storage Time | $t_{stg}$ | | — | 1.0 | — | |
| | Fall Time | $t_f$ | $I_{B1} = -I_{B2} = 0.05A$, DUTY CYCLE ≦ 1% | — | 0.1 | — | |

(Note) : $h_{FE\,(1)}$ Classification O : 70~140, Y : 120~240

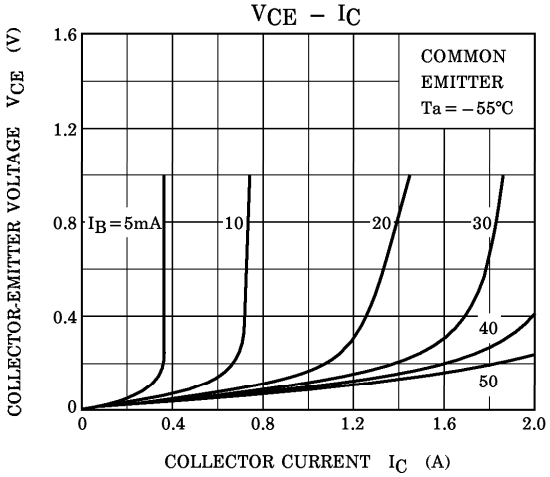
$V_{CE}$ – $I_C$



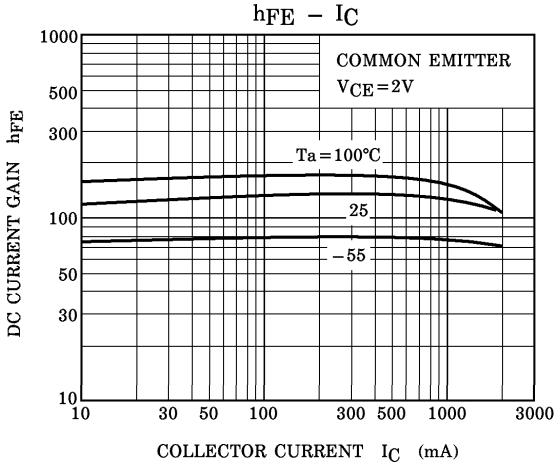

$V_{CE}$ – $I_C$



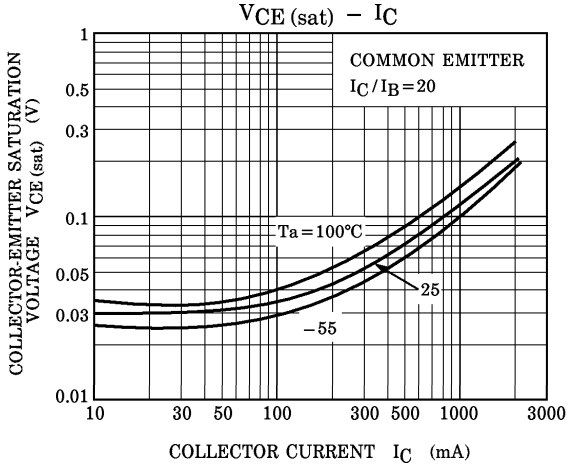

$V_{CE}$ – $I_C$



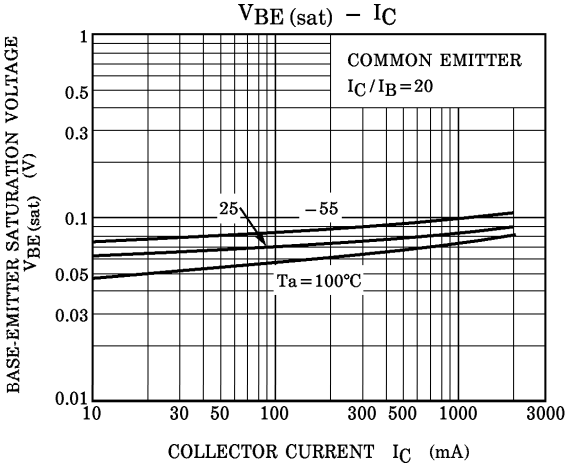

$h_{FE}$ – $I_C$



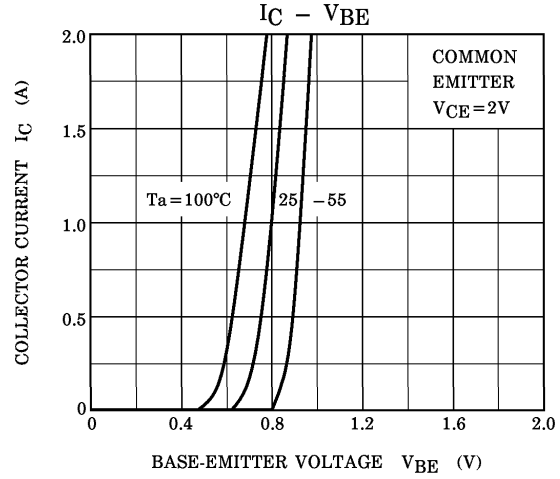

$V_{CE\,(sat)}$ – $I_C$



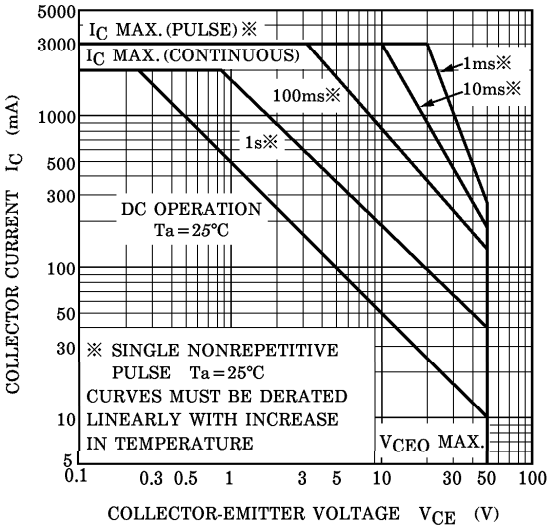

$V_{BE\,(sat)}$ – $I_C$



$I_C$ – $V_{BE}$




SAFE OPERATING AREA




$P_C$ – Ta