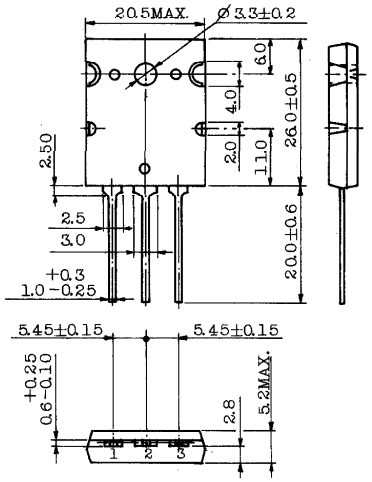
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (DARLINGTON POWER TRANSISTOR)

# 2SB1556

Unit in mm

○ POWER AMPLIFIER APPLICATIONS

- High Breakdown Voltage : $V_{CEO} = -140V$ (Min.)
- Complementary to 2SD2385



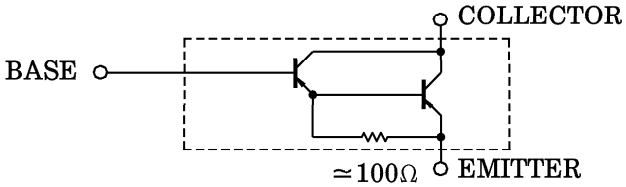

1. Base
2. Collector (Fin)
3. Emitter

| | |
|---|---|
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 2-21F1A |

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | −140 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | −140 | V |
| Emitter-Base Voltage | $V_{EBO}$ | −5 | V |
| Collector Current | $I_C$ | −8 | A |
| Base Current | $I_B$ | −0.1 | A |
| Collector Power Dissipation (Tc = 25°C) | $P_C$ | 120 | W |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~150 | °C |

EQUIVALENT CIRCUIT




ELECTRICAL CHARACTERISTIC (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB} = -140V$, $I_E = 0$ | — | — | −5.0 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB} = -5V$, $I_C = 0$ | — | — | −5.0 | μA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -50mA$, $I_B = 0$ | −140 | — | — | V |
| DC Current Gain | $h_{FE}$ (1) (Note) | $V_{CE} = -5V$, $I_C = -7A$ | 5000 | — | 30000 | — |
| | $h_{FE}$ (2) | $V_{CE} = -5V$, $I_C = -12A$ | 2000 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -7A$, $I_B = -7mA$ | — | — | −2.5 | V |
| Base-Emitter Voltage | $V_{BE}$ | $V_{CE} = -5V$, $I_C = -7A$ | — | — | −3.0 | V |
| Transition Frequency | $f_T$ | $V_{CE} = -5V$, $I_C = -1A$ | — | 30 | — | MHz |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB} = -10V$, $I_E = 0$, f = 1MHz | — | 170 | — | pF |

Note : $h_{FE}$ (1) Classification A : 5000~12000, B : 9000~18000, C : 15000~30000

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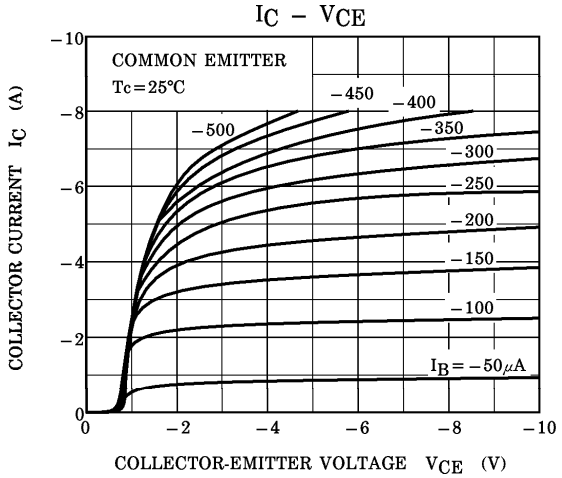
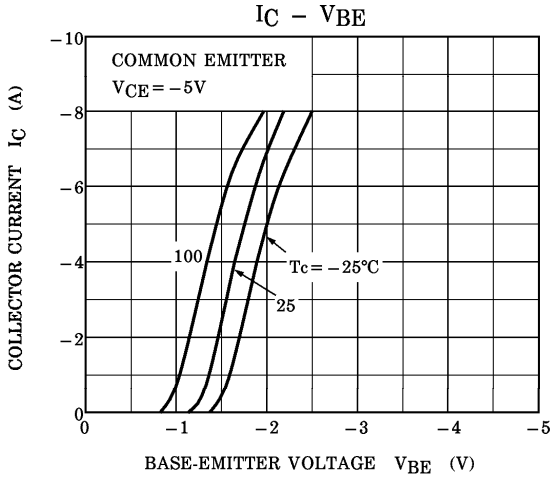
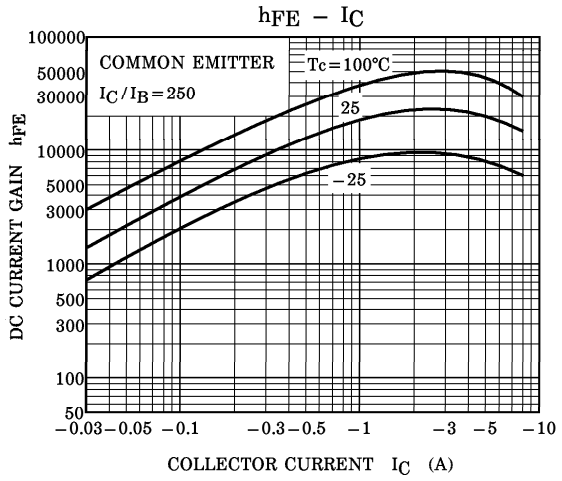
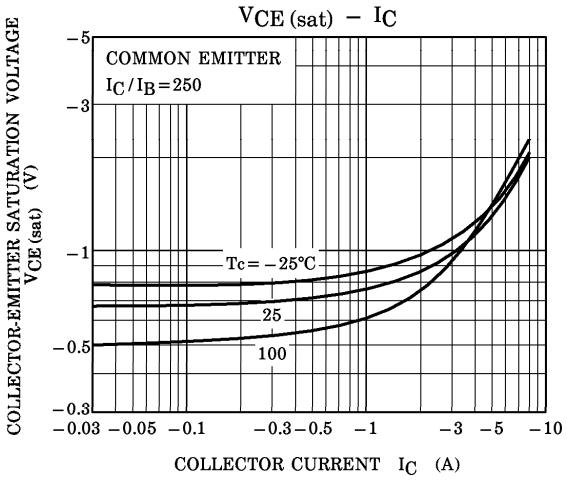
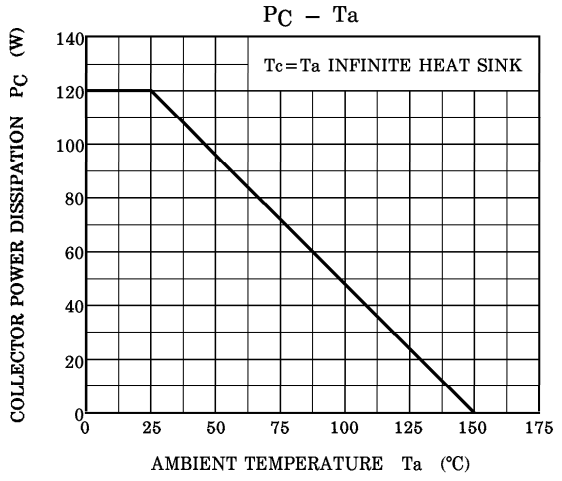
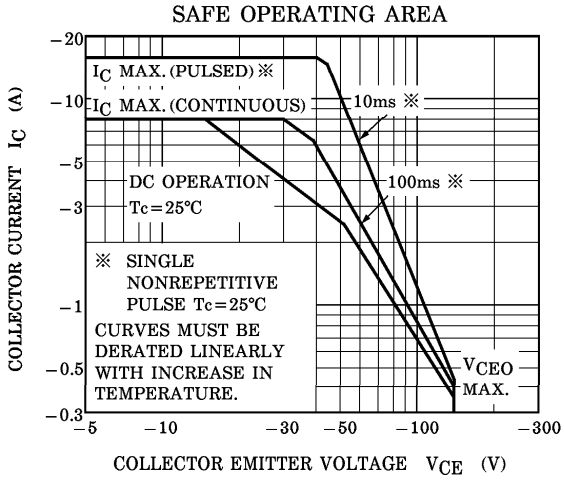

IC – VCE
COMMON EMITTER
Tc=25°C
−450
−400
−500
−350
−300
−250
−200
−150
−100
IB=−50μA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)


IC – VBE
COMMON EMITTER
VCE=−5V
100
Tc=−25°C
25
COLLECTOR CURRENT IC (A)
BASE-EMITTER VOLTAGE VBE (V)


hFE – IC
COMMON EMITTER
IC/IB=250
Tc=100°C
25
−25
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)


VCE (sat) – IC
COMMON EMITTER
IC/IB=250
Tc=−25°C
25
100
COLLECTOR-EMITTER SATURATION VOLTAGE VCE (sat) (V)
COLLECTOR CURRENT IC (A)


PC – Ta
Tc=Ta INFINITE HEAT SINK
COLLECTOR POWER DISSIPATION PC (W)
AMBIENT TEMPERATURE Ta (°C)


SAFE OPERATING AREA
IC MAX. (PULSED) ※
IC MAX. (CONTINUOUS)
10ms ※
DC OPERATION
Tc=25°C
100ms ※
※ SINGLE NONREPETITIVE PULSE Tc=25°C
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE.
VCEO MAX.
COLLECTOR CURRENT IC (A)
COLLECTOR EMITTER VOLTAGE VCE (V)