

TOSHIBA Transistor Silicon NPN Triple Diffused Type (Darlington Power Transistor)

2SD2386

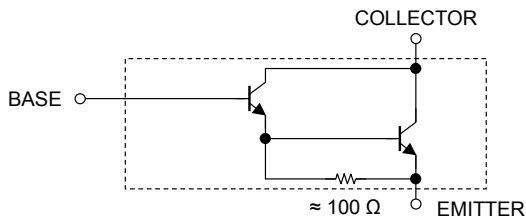
Power Amplifier Applications

- High breakdown voltage: $V_{CE0} = 140\text{ V}$ (min)
- Complementary to 2SB1557

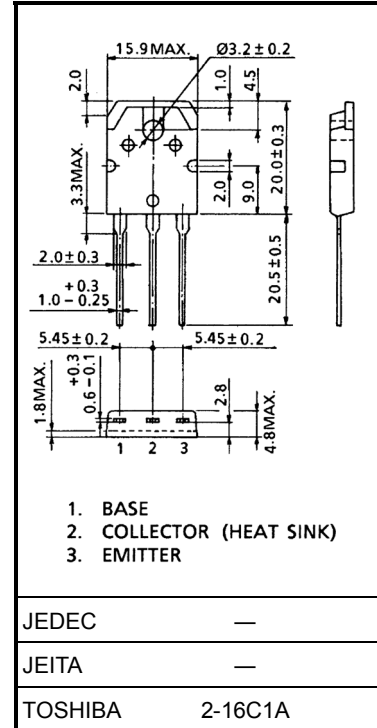
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	140	V
Collector-emitter voltage	V_{CE0}	140	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	7	A
Base current	I_B	0.1	A
Collector power dissipation ($T_c = 25^\circ\text{C}$)	P_C	70	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$

Equivalent Circuit



Unit: mm



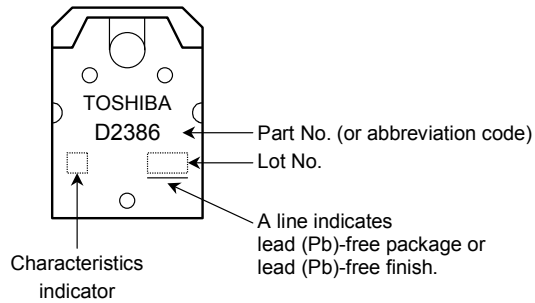
Weight: 4.7 g (typ.)

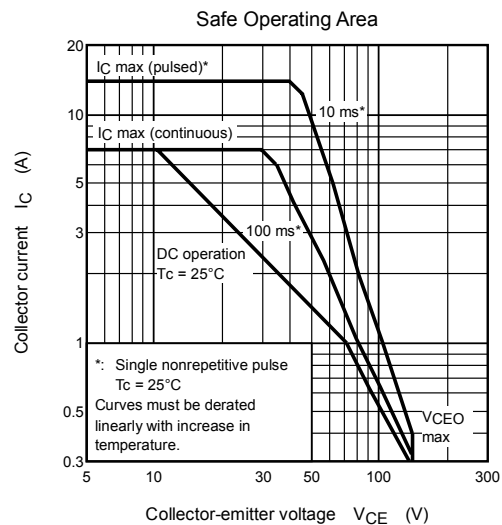
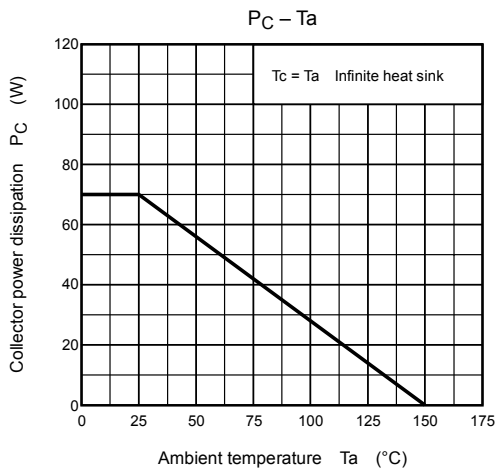
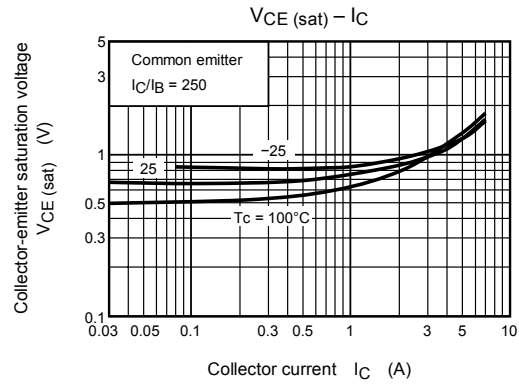
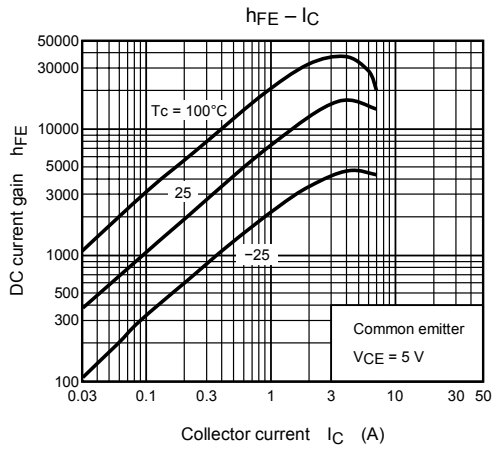
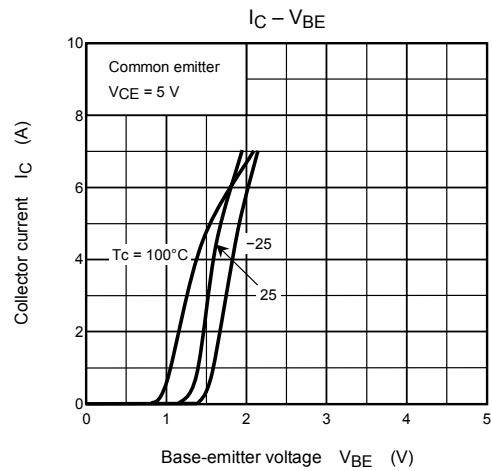
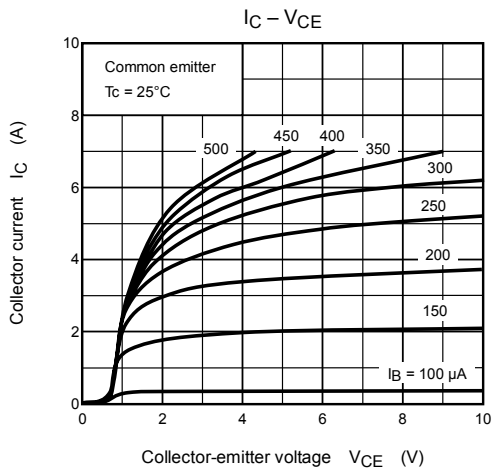
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 140\text{ V}, I_E = 0$	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 50\text{ mA}, I_B = 0$	140	—	—	V
DC current gain	$h_{FE(1)}$ (Note)	$V_{CE} = 5\text{ V}, I_C = 6\text{ A}$	5000	—	30000	
	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 10\text{ A}$	2000	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 6\text{ A}, I_B = 6\text{ mA}$	—	—	2.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5\text{ V}, I_C = 6\text{ A}$	—	—	3.0	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	—	30	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	90	—	pF

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

Marking





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