TOSHIBA Transistor Silicon NPN Triple Diffused Type (Darlington power transistor)

2SD2386

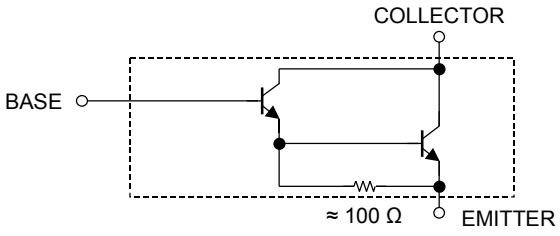
Power Amplifier Applications

- High breakdown voltage: V_{CEO} = 140 V (min)
- Complementary to 2SB1557

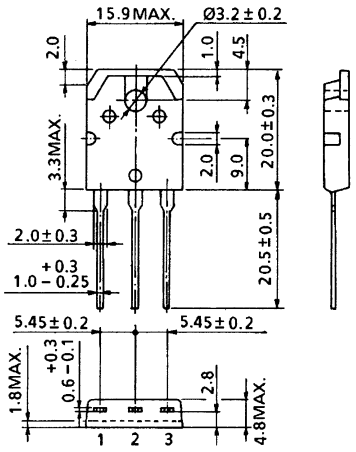
Maximum Ratings (Ta = 25°C)

Characteristics	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	7	A
Base current	I_B	0.1	A
Collector power dissipation (Tc = 25°C)	P_C	70	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Equivalent Circuit



Unit: mm



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

JEDEC	—
JEITA	—
TOSHIBA	2-16C1A

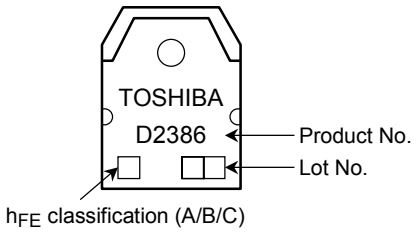
Weight: 4.7 g (typ.)

Electrical Characteristics (Ta = 25°C)

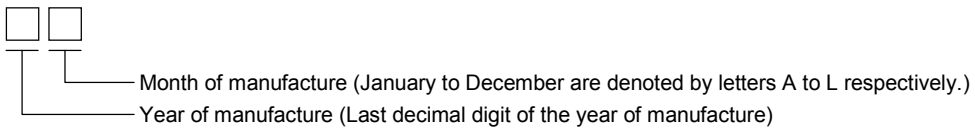
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 140 V, I_E = 0	—	—	5.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	5.0	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 50 mA, I_B = 0	140	—	—	V
DC current gain	$h_{FE\ (1)}$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

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

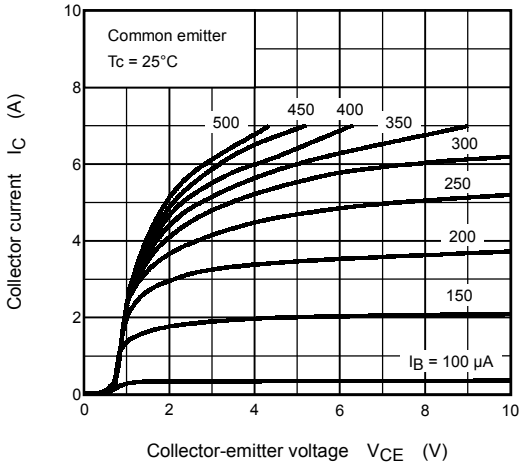
Marking



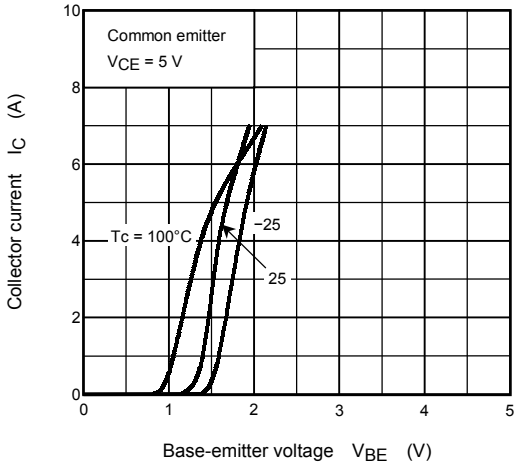
Explanation of Lot No.



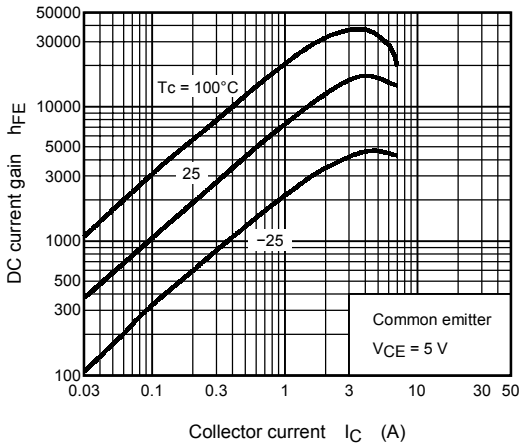
$I_C - V_{CE}$



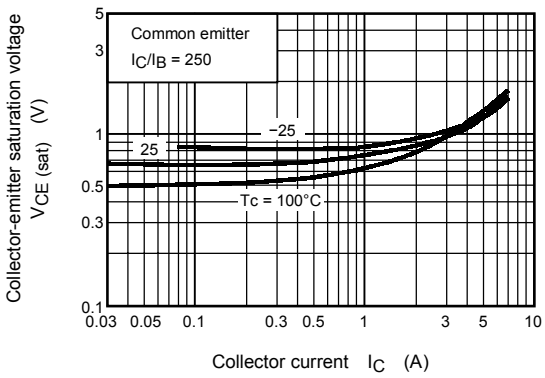
$I_C - V_{BE}$



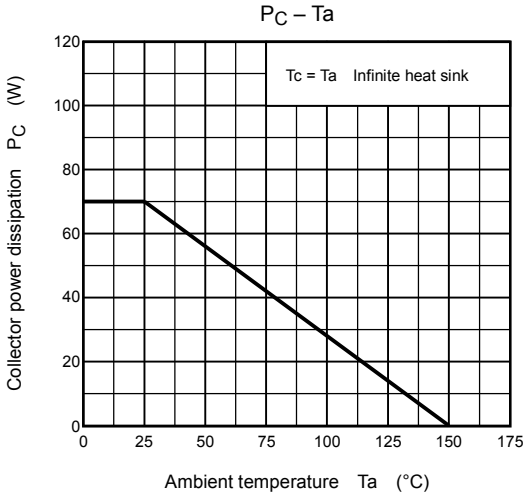
$h_{FE} - I_C$



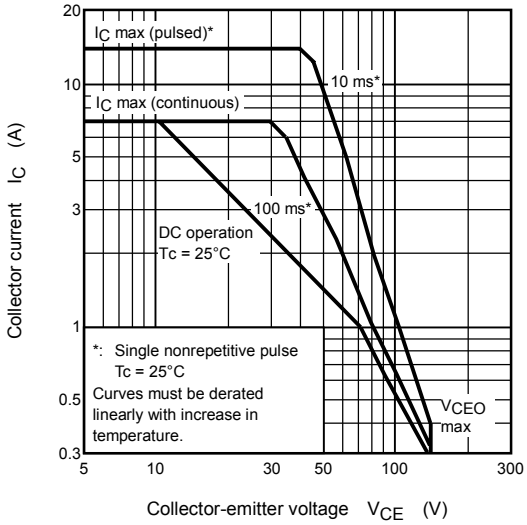
$V_{CE\ (sat)} - I_C$



$P_C - Ta$



Safe Operating Area



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