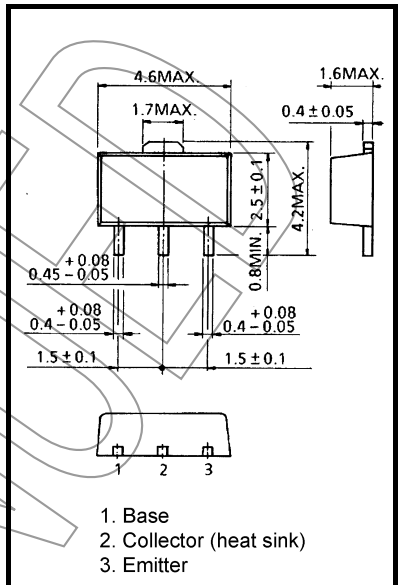
TOSHIBA Transistor Silicon PNP Triple Diffused Type (PCT process)

2SA1200

High Voltage Switching Applications

- High voltage: V_{CEO} = −150 V
- High transition frequency: f_T = 120 MHz (typ.)
- Small flat package
- P_C = 1 to 2 W (mounted on a ceramic substrate)
- Complementary to 2SC2880

Unit: mm



1. Base
2. Collector (heat sink)
3. Emitter

PW-MINI	
JEDEC	—
JEITA	SC-62
TOSHIBA	2-5K1A

Weight: 0.05 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	−150	V
Collector-emitter voltage	V_{CEO}	−150	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−50	mA
Base current	I_B	−10	mA
Collector power dissipation	P_C	500	mW
	P_C (Note 1)	800	
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Note 1: 2SA1200 mounted on a ceramic substrate (250 mm^2 × 0.8 t)

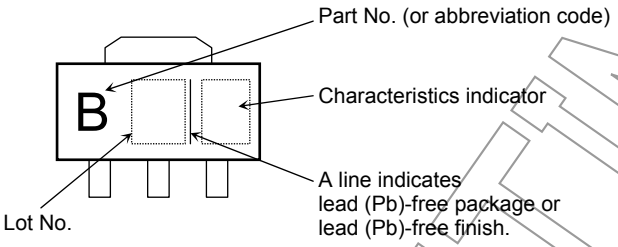
Note 2: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics (Ta = 25°C)

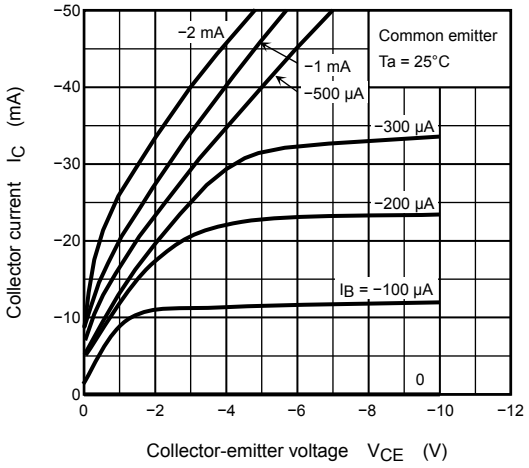
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −150 V, I_E = 0	—	—	−0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−0.1	μA
DC current gain	h_{FE} (Note 3)	V_{CE} = −5 V, I_C = −10 mA	70	—	240	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = −10 mA, I_B = −1 mA	—	—	−0.8	V
Base-emitter voltage	V_{BE}	V_{CE} = −5 V, I_C = −30 mA	—	—	−0.9	V
Transition frequency	f_T	V_{CE} = −30 V, I_C = −10 mA	—	120	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	4.0	5.0	pF

Note 3: h_{FE} classification O: 70 to 140, Y: 120 to 240

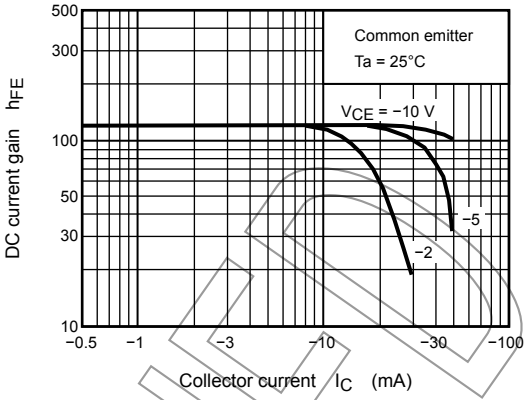
Marking



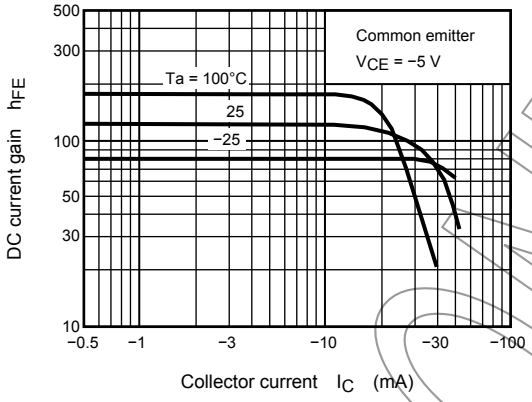
$I_C - V_{CE}$



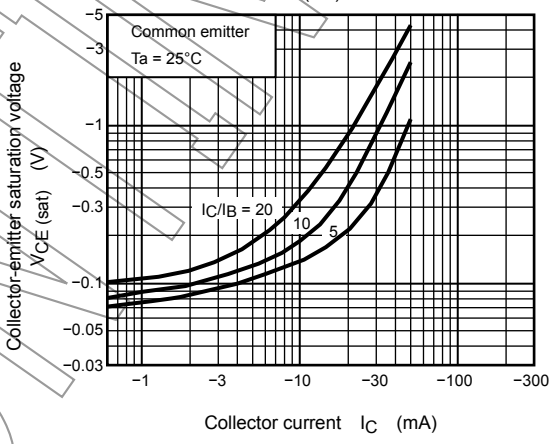
$h_{FE} - I_C$



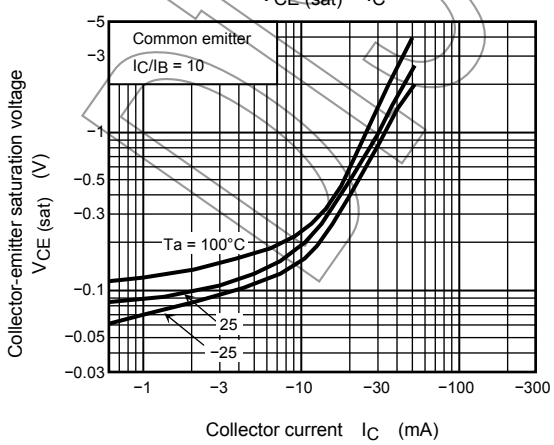
$h_{FE} - I_C$



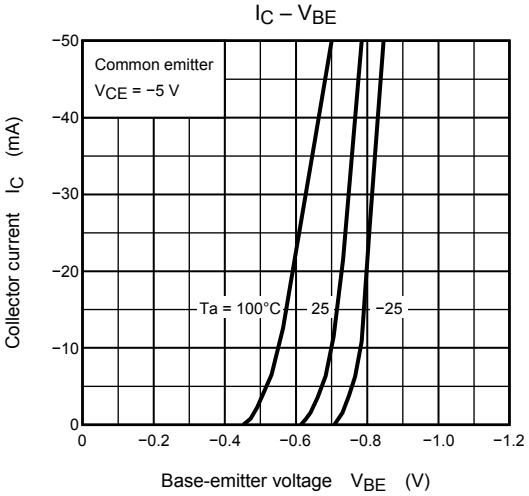
$V_{CE\ (sat)} - I_C$



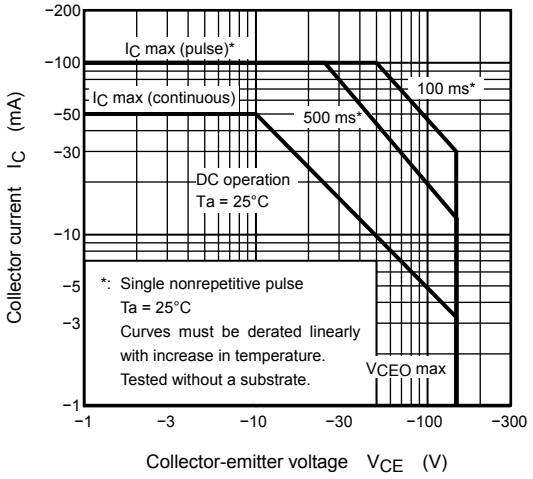
$V_{CE\ (sat)} - I_C$



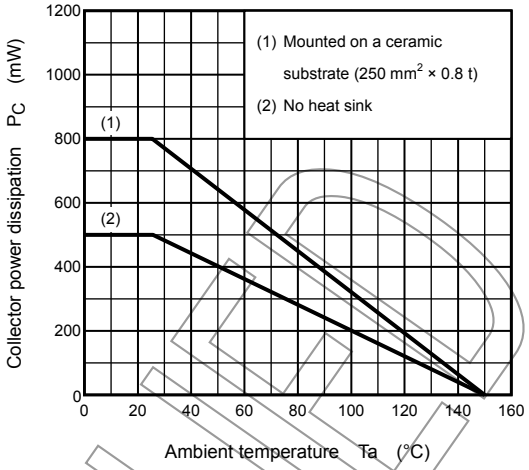
$I_C - V_{BE}$



Safe Operating Area



P_C – Ta



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