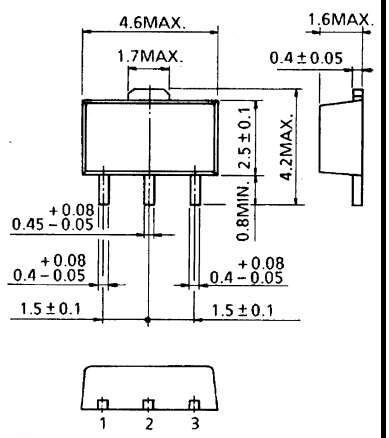
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1203

Audio Frequency Amplifier Applications

- Suitable for output stage of 3 watts amplifier
- Small flat package
- P_C = 1.0 to 2.0 W (mounted on a ceramic substrate)
- Complementary to 2SC2883

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}	−30	V
Collector-emitter voltage	V_{CEO}	−30	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−1.5	A
Base current	I_B	−0.3	A
Collector power dissipation	P_C	500	mW
	P_C (Note 1)	1000	
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

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

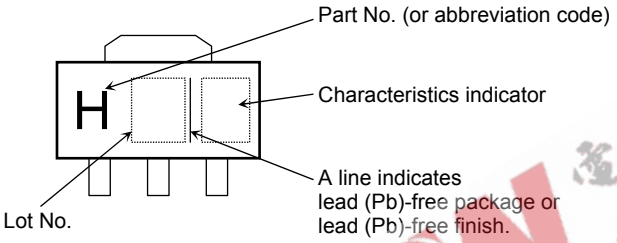
Note 2: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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)

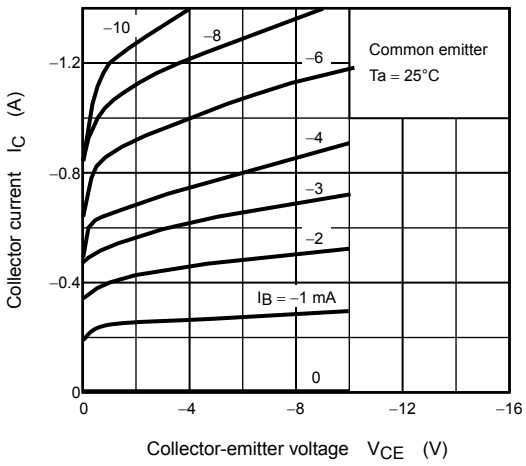
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −30 V, I_E = 0	—	—	−0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = −5 V, I_C = 0	—	—	−0.1	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = −10 mA, I_B = 0	−30	—	—	V
Emitter-base breakdown voltage	$V_{(BR)\ EBO}$	I_E = −1 mA, I_C = 0	−5	—	—	V
DC current gain	h_{FE} (Note 3)	V_{CE} = −2 V, I_C = −500 mA	100	—	320	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = −1.5 A, I_B = −0.03 A	—	—	−2.0	V
Base-emitter voltage	V_{BE}	V_{CE} = −2 V, I_C = −500 mA	—	—	−1.0	V
Transition frequency	f_T	V_{CE} = −2 V, I_C = −500 mA	—	120	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	—	50	pF

Note 3: h_{FE} classification O: 100 to 200, Y: 160 to 320

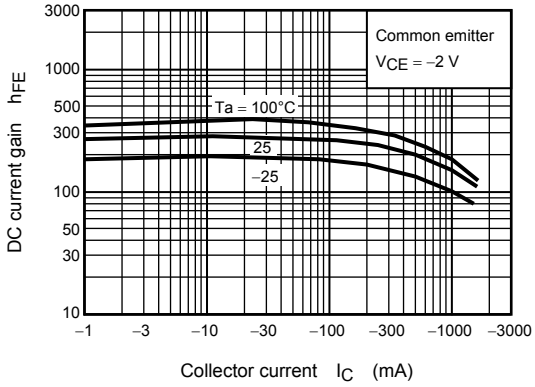
Marking



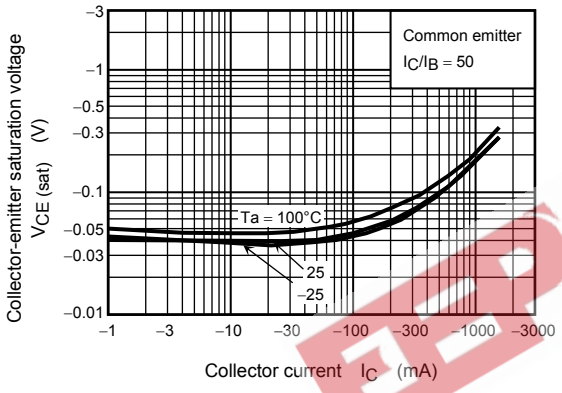
$I_C - V_{CE}$



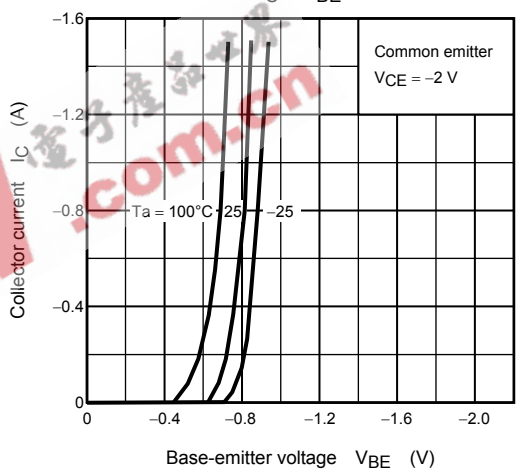
$h_{FE} - I_C$



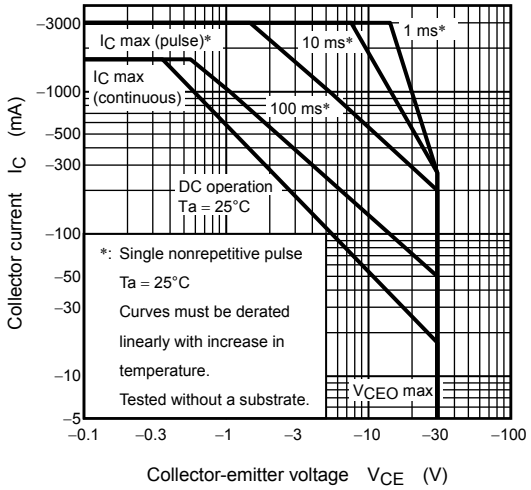
$V_{CE\ (sat)} - I_C$



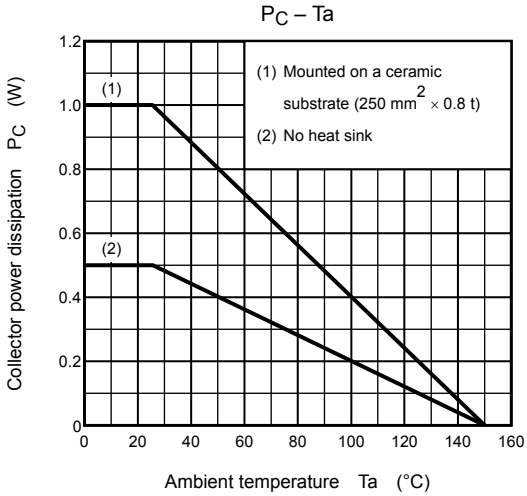
$I_C - V_{BE}$



Safe Operating Area



$P_C - Ta$



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