

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC2120

Audio Power Amplifier Applications

Unit: mm

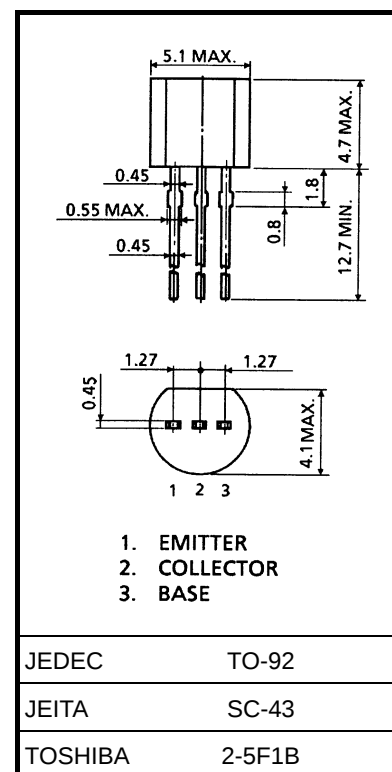
- High h_{FE} : $h_{FE}(1) = 100 \sim 320$
- 1 watts amplifier applications.
- Complementary to 2SA950

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	35	V
Collector-emitter voltage	V_{CEO}	30	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	800	mA
Base current	I_B	160	mA
Collector power dissipation	P_C	600	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

Note: 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).

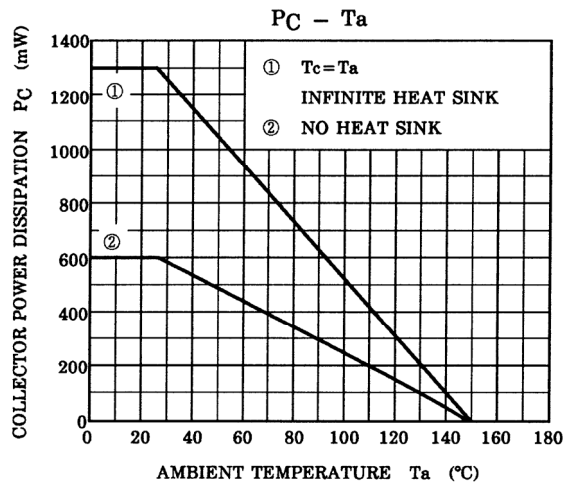
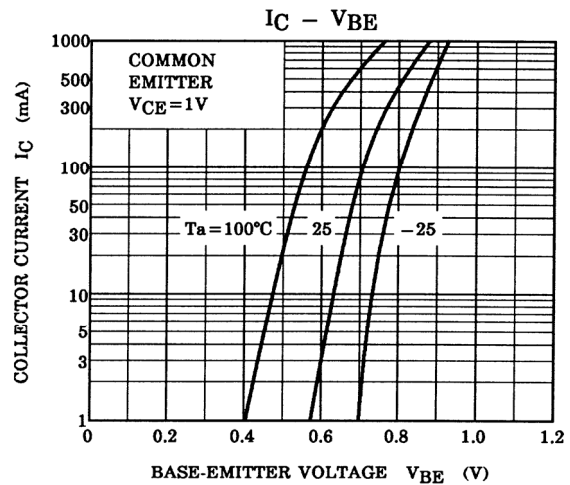
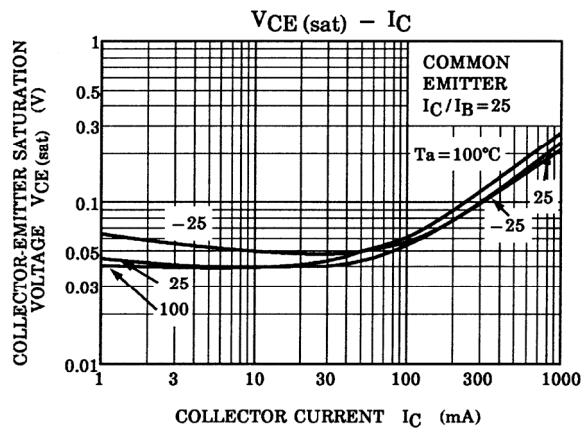
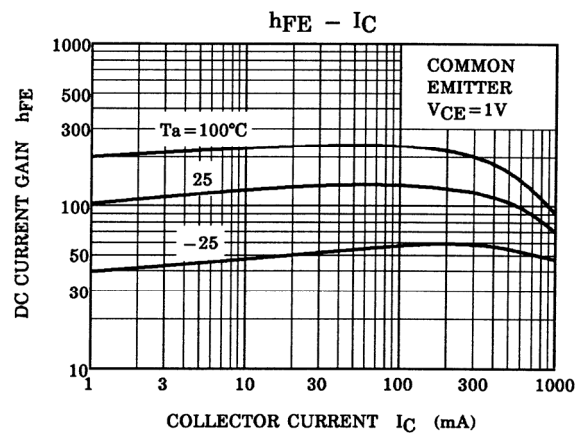
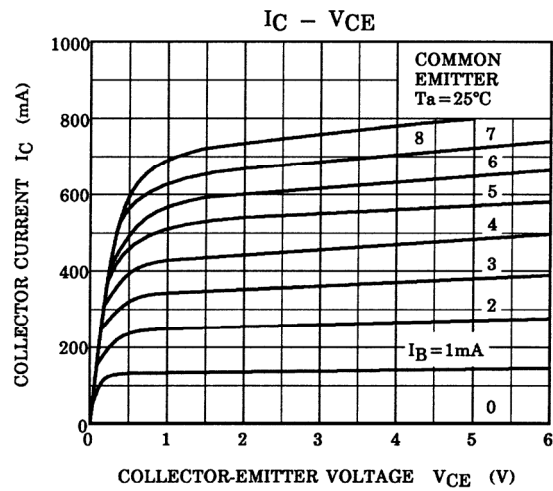


Weight: 0.21 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 35 \text{ V}, I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	—	—	0.1	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	30	—	—	V
DC current gain	$h_{FE}(1)$ (Note)	$V_{CE} = 1 \text{ V}, I_C = 100 \text{ mA}$	100	—	320	
	$h_{FE}(2)$	$V_{CE} = 1 \text{ V}, I_C = 700 \text{ mA}$	35	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 \text{ mA}, I_B = 20 \text{ mA}$	—	—	0.5	V
Base-emitter voltage	V_{BE}	$V_{CE} = 1 \text{ V}, I_C = 10 \text{ mA}$	0.5	—	0.8	V
Transition frequency	f_T	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$	—	120	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	13	—	pF

Note: $h_{FE}(1)$ classification O: 100~200, Y: 160~320



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20070701-EN GENERAL

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