

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

# 2SA1297

Power Amplifier Applications  
Power Switching Applications

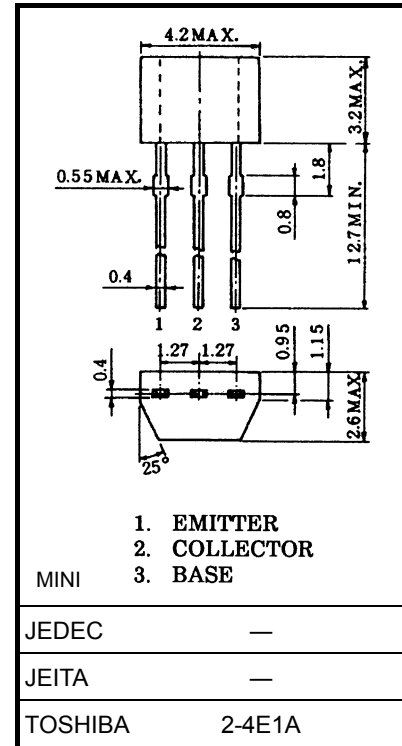
Unit: mm

- Low saturation voltage:  $V_{CE(sat)} = -0.5 \text{ V (max) @ } I_C = -2 \text{ A}$
- Complementary to 2SC3267.

## Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-20	V
Collector-emitter voltage	$V_{CEO}$	-20	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	$I_C$	-2	A
Base current	$I_B$	-0.5	A
Collector power dissipation	$P_C$	400	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to 150	°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).

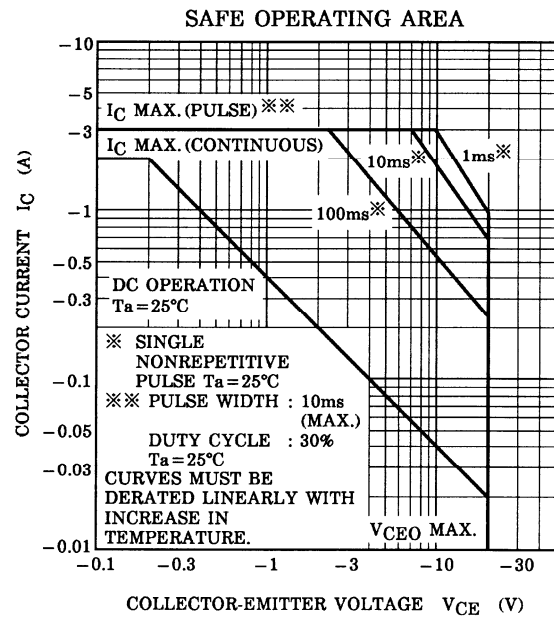
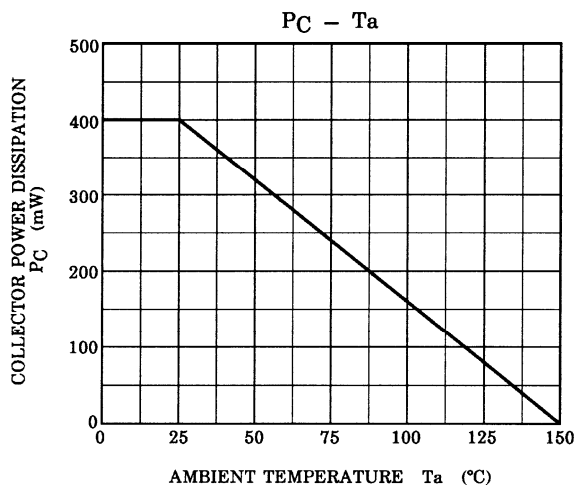
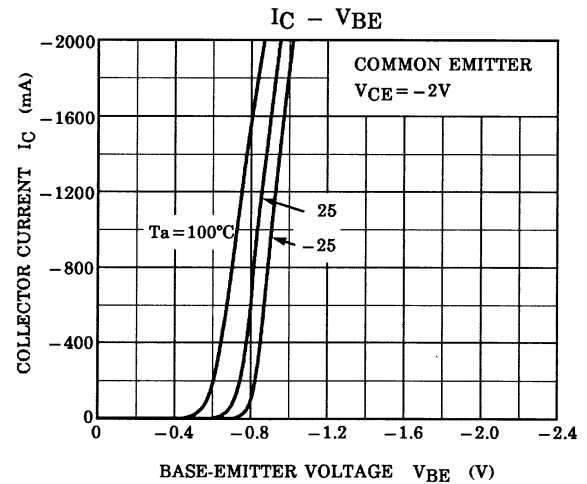
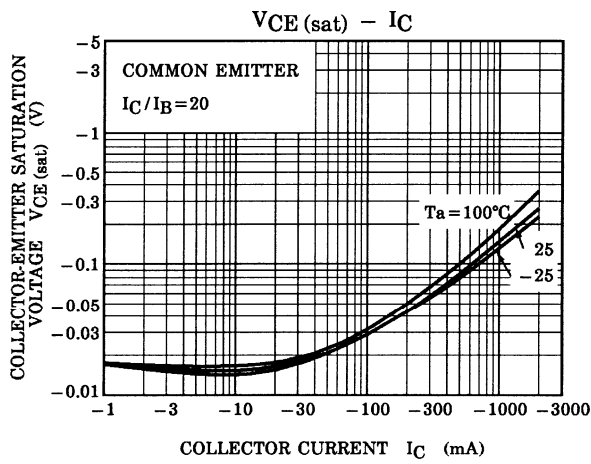
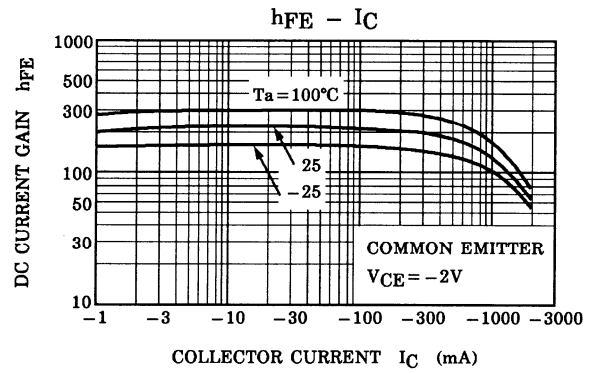
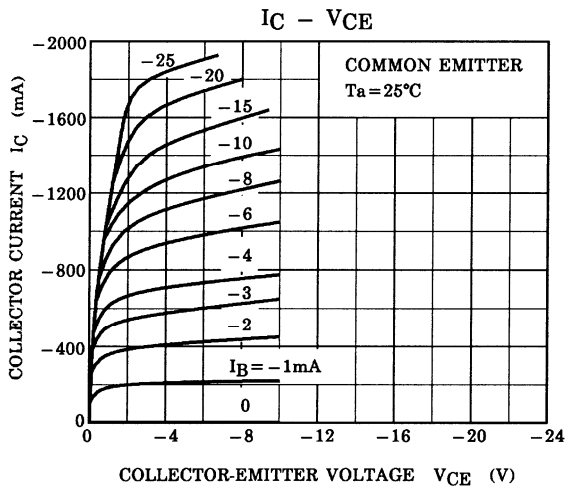


Weight: 0.13 g (typ.)

## Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = -20 \text{ V}, I_E = 0$	—	—	-0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -6 \text{ V}, I_C = 0$	—	—	-0.1	$\mu\text{A}$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10 \text{ mA}, I_B = 0$	-20	—	—	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -0.1 \text{ mA}, I_C = 0$	-6	—	—	V
DC current gain	$h_{FE(1)}$ (Note)	$V_{CE} = -2 \text{ V}, I_C = -0.1 \text{ A}$	120	—	400	
	$h_{FE(2)}$	$V_{CE} = -2 \text{ V}, I_C = -2 \text{ A}$	40	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2 \text{ A}, I_B = -0.1 \text{ A}$	—	—	-0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE} = -2 \text{ V}, I_C = -0.1 \text{ A}$	—	—	-0.85	V
Transition frequency	$f_T$	$V_{CE} = -2 \text{ V}, I_C = -0.5 \text{ A}$	—	120	—	MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	40	—	pF

Note:  $h_{FE(1)}$  Y: 120 to 240, GR: 200 to 400



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