TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

# 2SA817

## Audio Frequency Amplifier Applications

Unit: mm

- Complementary to 2SC1627.
- Suitable for driver of 20~25 watts audio amplifiers.

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	-80	V
Collector-emitter voltage	V <sub>CEO</sub>	-80	V
Emitter-base voltage	V <sub>EBO</sub>	-5	V
Collector current	IC	-300	mA
Base current	I <sub>B</sub>	-60	mA
Collector power dissipation	PC	600	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	<b>−55~150</b>	°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).

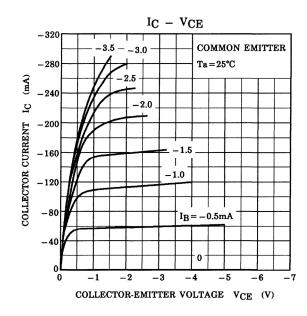
# 1. EMITTER 2. COLLECTOR 3. BASE JEDEC TO-92 JEITA SC-43 TOSHIBA 2-5F1B

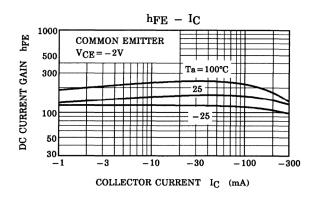
Weight: 0.21 g (typ.)

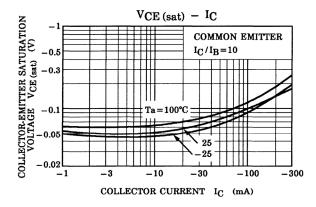
## **Electrical Characteristics (Ta = 25°C)**

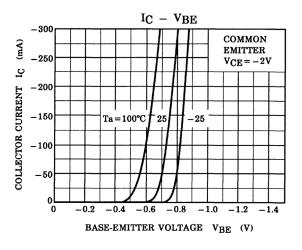
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	$V_{CB} = -50 \text{ V}, I_E = 0$	_	_	-0.1	μА
Emitter cut-off current	I <sub>EBO</sub>	$V_{EB} = -5 \text{ V}, I_{C} = 0$	_	_	-0.1	μΑ
Collector-emitter breakdown voltage	V (BR) CEO	$I_C = -5 \text{ mA}, I_B = 0$	-80	_	_	V
DC current gain	h <sub>FE (1)</sub> (Note)	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -50 mA	70	_	240	
	h <sub>FE (2)</sub>	$V_{CE} = -2 \text{ V}, I_{C} = -200 \text{ mA}$	40	_	_	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	$I_C = -200 \text{ mA}, I_B = -20 \text{ mA}$	_	_	-0.4	٧
Base-emitter voltage	V <sub>BE</sub>	$V_{CE} = -2 \text{ V}, I_{C} = -5 \text{ mA}$	-0.55	_	-0.8	٧
Transition frequency	f <sub>T</sub>	$V_{CE} = -10 \text{ V}, I_{C} = -10 \text{ mA}$	70	100	_	MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	_	14	_	pF

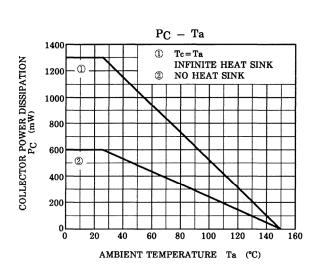
Note:  $h_{FE(1)}$  classification O: 70~140, Y: 120~240

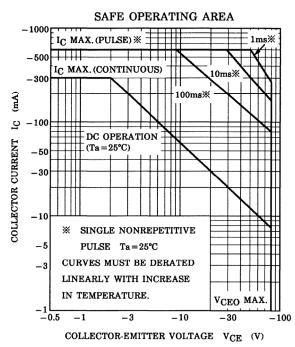












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20070701-EN GENERAL

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