TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

# 2SC4210

### Audio Power Amplifier Applications

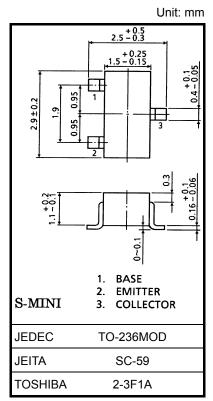
- High DC current gain:  $h_{FE} = 100 \sim 320$
- Complementary to 2SA1621

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

Characteristics	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	35	V
Collector-emitter voltage	V <sub>CEO</sub>	30	V
Emitter-base voltage	V <sub>EBO</sub>	5	٧
Collector current	IC	800	mA
Base current	lΒ	160	mA
Collector power dissipation	PC	200	mW
Junction temperature	Tj	150	°C
Storage temperature range	T <sub>stg</sub>	-55~150	°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.)



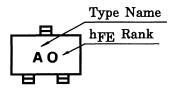
Weight: 0.012 g (typ.)

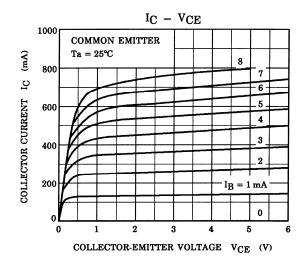
## **Electrical Characteristics (Ta = 25°C)**

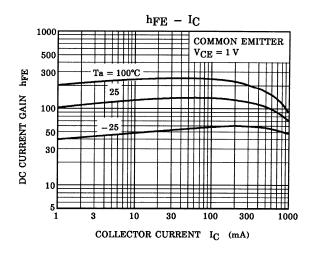
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	$V_{CB} = 35 \text{ V}, I_{E} = 0$	_	_	0.1	μΑ
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	_	_	0.1	μΑ
Collector-emitter breakdown voltage	V (BR) CEO	$I_C = 10 \text{ mA}, I_B = 0$	30	_	_	V
DC current gain	h <sub>FE (1)</sub> (Note)	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 100 mA	100	_	320	
	h <sub>FE (2)</sub>	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 700 mA	35	_	_	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 20 mA	_	_	0.5	V
Base-emitter voltage	$V_{BE}$	V <sub>CE</sub> = 1 V, I <sub>C</sub> = 10 mA	0.5	_	0.8	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA	_	120	_	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	_	13	_	pF

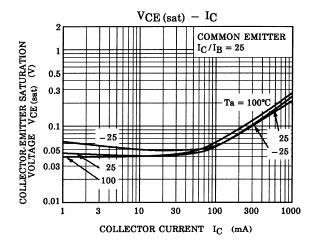
Note: hFE (1) classification O: 100~200, Y: 160~320

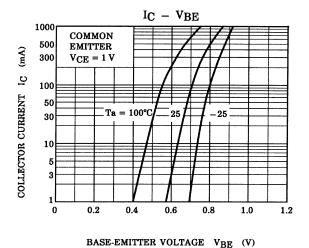
#### Marking











PC - Ta

PC - Ta

NOLLY 160

160

120

80

40

0 25 50 75 100 125 150 175

AMBIENT TEMPERATURE Ta (°C)

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