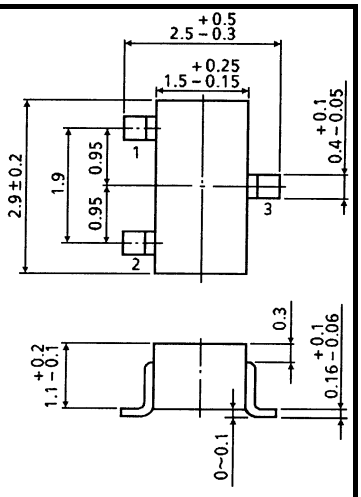
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC4210

Audio Power Amplifier Applications

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

Unit: mm



JEDEC	TO-236MOD
JEITA	SC-59
TOSHIBA	2-3F1A

Weight: 0.012 g (typ.)

Absolute Maximum Ratings (Ta = 25°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	200	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55~150	°C

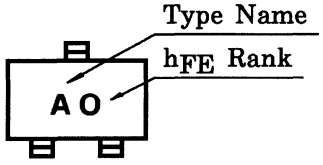
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

Electrical Characteristics (Ta = 25°C)

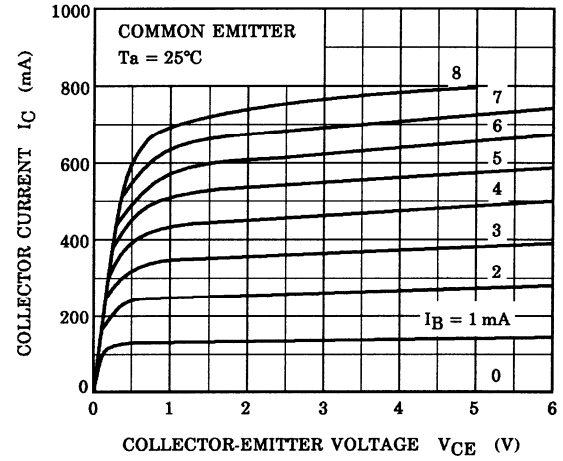
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 35 V, I_E = 0	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	0.1	μA
Collector-emitter breakdown voltage	$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	30	—	—	V
DC current gain	$h_{FE\ (1)}$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

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

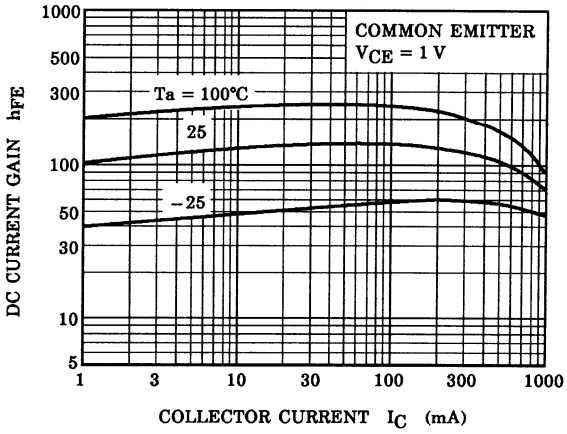
Marking



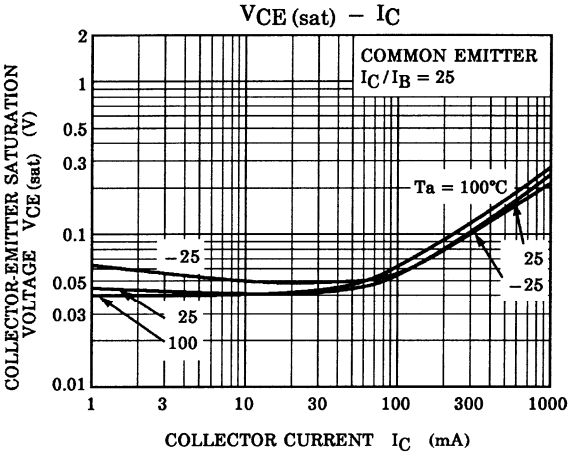
$I_C - V_{CE}$



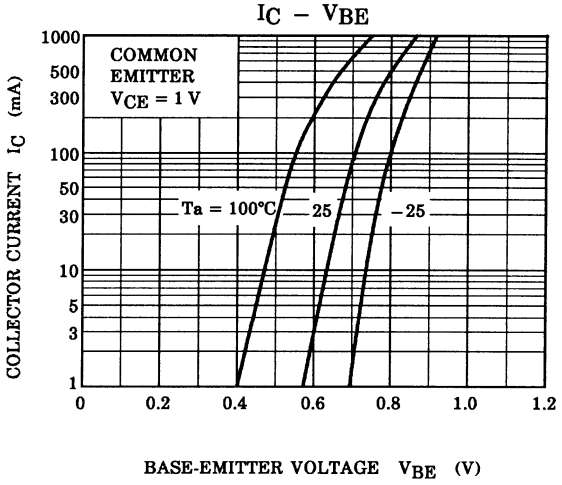
$h_{FE} - I_C$



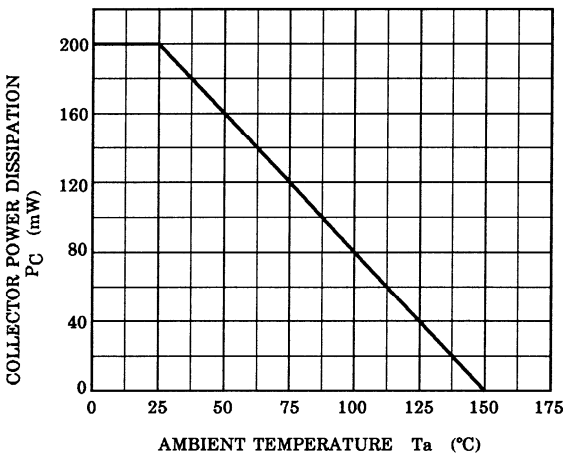
$V_{CE\,(sat)} - I_C$



$I_C - V_{BE}$



$P_C - Ta$



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