

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

2SA1428

Power Amplifier Applications

Power Switching Applications

- Low collector-emitter saturation voltage:
 $V_{CE}(\text{sat}) = -0.5 \text{ V (max)} (I_C = -1 \text{ A})$
- High-speed switching: $t_{\text{stg}} = 1.0 \mu\text{s (typ.)}$
- Complementary to 2SC3668

Absolute Maximum Ratings (Ta = 25°C)

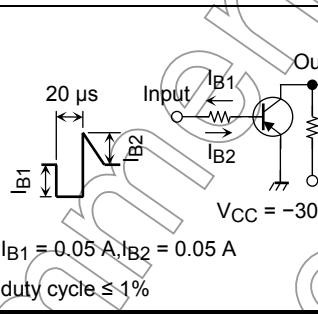
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	V
Collector-emitter voltage	V_{CEO}	-50	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-2	A
Base current	I_B	-0.2	A
Collector power dissipation	P_C	1000	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°C

Weight: 0.2 g (typ.)

Note1: 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.

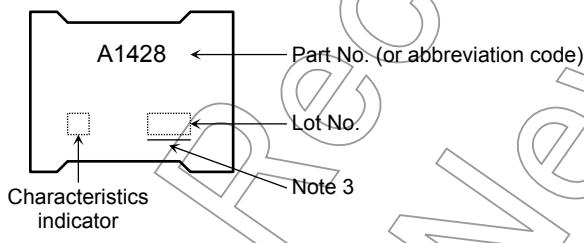
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = -50 V, I _E = 0	—	—	-1.0	μA
Emitter cut-off current	I _{EBO}	V _{EB} = -5 V, I _C = 0	—	—	-1.0	μA
Collector-emitter breakdown voltage	V _{(BR) CEO}	I _C = -10 mA, I _B = 0	-50	—	—	V
DC current gain	h _{FE} (1) (Note 2)	V _{CE} = -2 V, I _C = -0.5 A	70	—	240	
	h _{FE} (2)	V _{CE} = -2 V, I _B = -1.5 A	40	—	—	
Collector-emitter saturation voltage	V _{CE (sat)}	I _C = -1 A, I _B = -0.05 A	—	—	-0.5	V
Base-emitter saturation voltage	V _{BE (sat)}	I _C = -1 A, I _B = -0.05 A	—	—	-1.2	V
Transition frequency	f _T	V _{CE} = -2 V, I _C = -0.5 A	—	100	—	MHz
Collector output capacitance	C _{ob}	V _{CB} = -10 V, I _E = 0, f = 1 MHz	—	40	—	pF
Switching time	Turn-on time	t _{on}		—	0.1	μs
	Storage time	t _{stg}		—	1.0	
	Fall time	t _f		—	0.1	

Note 2: h_{FE} (1) classification O: 70 to 140, Y: 120 to 240

Marking

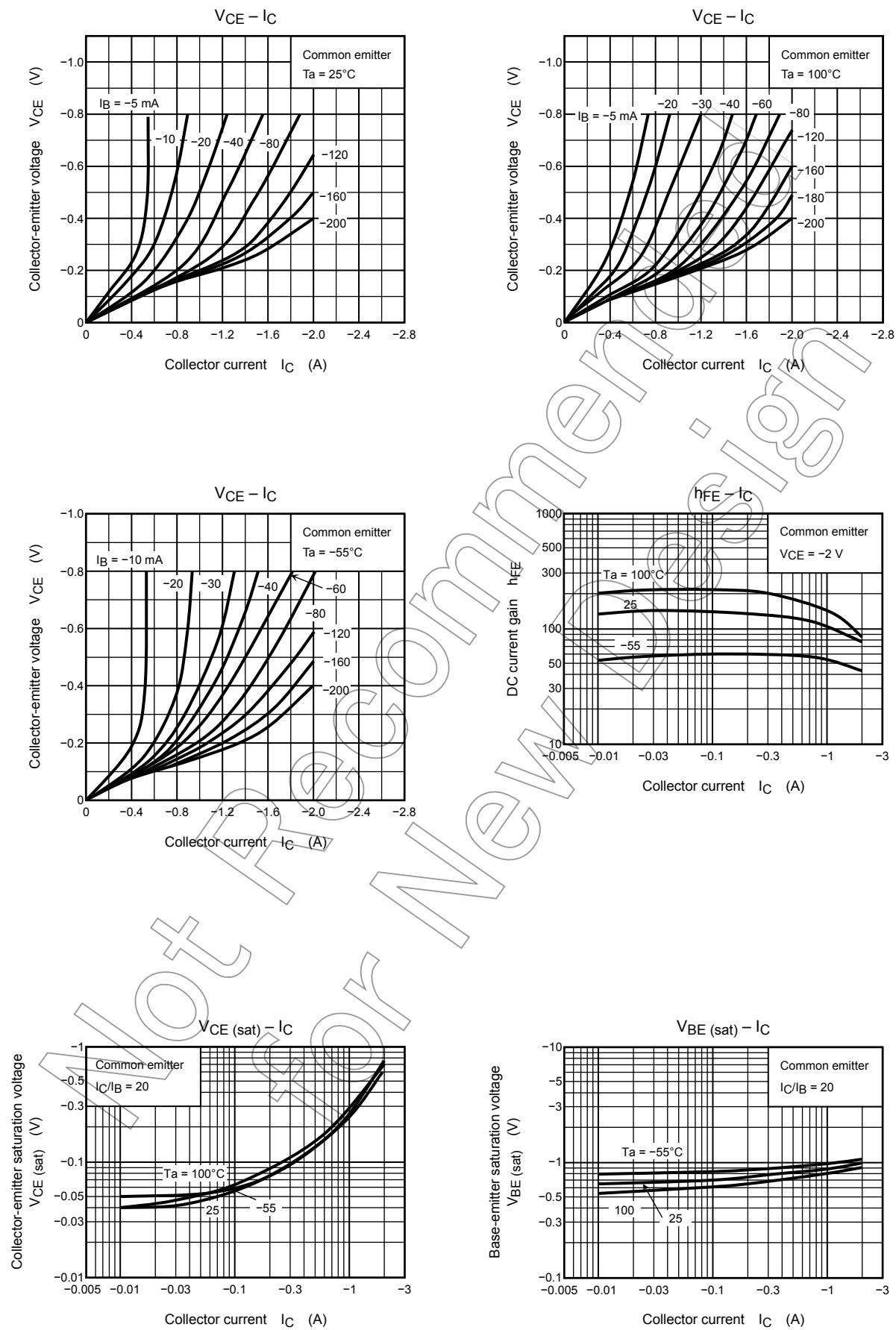


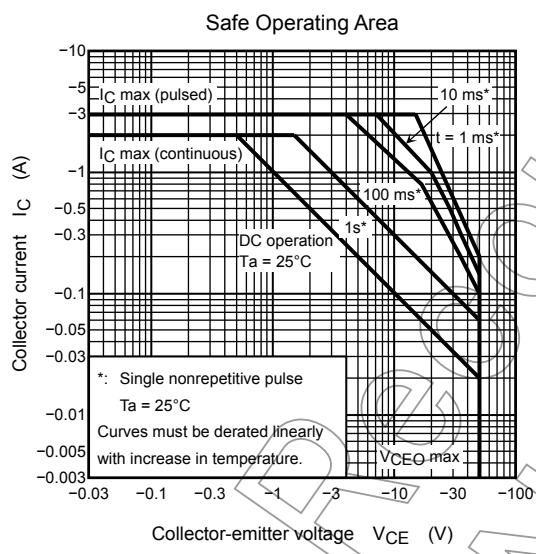
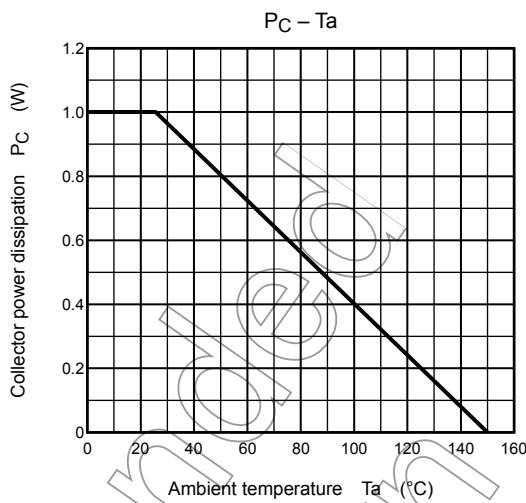
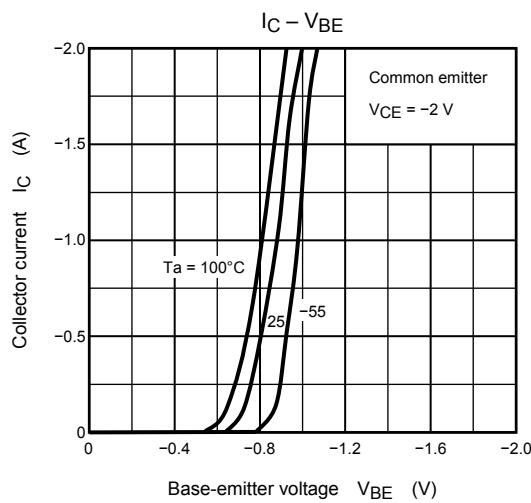
Note 3: A line under a Lot No. identifies the indication of product Labels.

Not underlined: [[Pb]]/INCLUDES > MCV

Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.





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