TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

2SA1020

Power Amplifier Applications
Power Switching Applications

• Low Collector saturation voltage: VCE (sat) = -0.5 V (max) (IC = -1 A)

• High collector power dissipation: PC = 900 mW

• High-speed switching: $t_{stg} = 1.0 \mu s$ (typ.)

• Complementary to 2SC2655

Unit: mm 5.1 MAX 0.8 MAX 0.6 MAX 0.6 MAX 1.0 MAX 1.

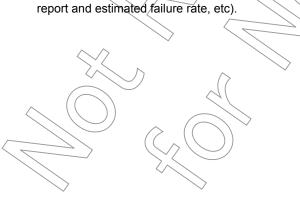
Weight: 0.36 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	-50	A
Collector-emitter voltage	V_{CEO}	√ 50	> v
Emitter-base voltage	V_{EBO}	5	V
Collector current	IC		Α
Base current	I _B	-0.2	A
Collector power dissipation	PC	900	<u>√</u> mW
Junction temperature	T _j (150	°¢/
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).

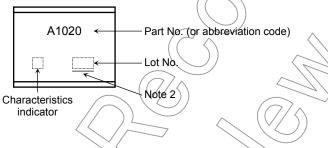


Electrical Characteristics $(T_a = 25^{\circ}C)$

Chara	acteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off of	urrent	I _{CBO}	$V_{CB} = -50 \text{ V}, I_{E} = 0$	_	_	-1	μА
Emitter cut-off cur	rent	I _{EBO}	$V_{EB} = -5 \text{ V}, I_{C} = 0$			-1	μА
Collector-emitter	breakdown voltage	V (BR) CEO	$I_C = -10 \text{ mA}, I_B = 0$	-50	_	_	V
DC current gain		h _{FE (1)}	V _{CE} = -2 V, I _C = -0.5 A	70	—	240	
		h _{FE (2)}	V _{CE} = -2 V, I _C = -1.5 A	40	_	_	
Collector-emitter	saturation voltage	V _{CE} (sat)	I _C = -1 A, I _B = -0.05 A	1) //_	-0.5	V
Base-emitter satu	ration voltage	V _{BE (sat)}	I _C = -1 A, I _B = -0.05 A		_	-1.2	V
Transition frequer	псу	f _T	V _{CE} = -2 V, I _C = -0.5 A	$\langle \cdot \rangle$	100	—	MHz
Collector output of	apacitance	C _{ob}	V _{CB} = -10 V, I _E = 0, f = 1 MHz		40	—	pF
Switching time	Turn-on time	ton	20 μs Input IB2	_	0.1	_	
	Storage time	t _{stg}	B2 B1 C S S S S S S S S S		1	> -	μs
	Fall time	t _f	I _{B1} = 0.05 Å (I _{B2} ≥ 0.05 Å DUTY CYCLE ≥ 1%		> 0.1	—	

Note: hFE (1) classification O: 70 to 140, Y: 120 to 240

Marking



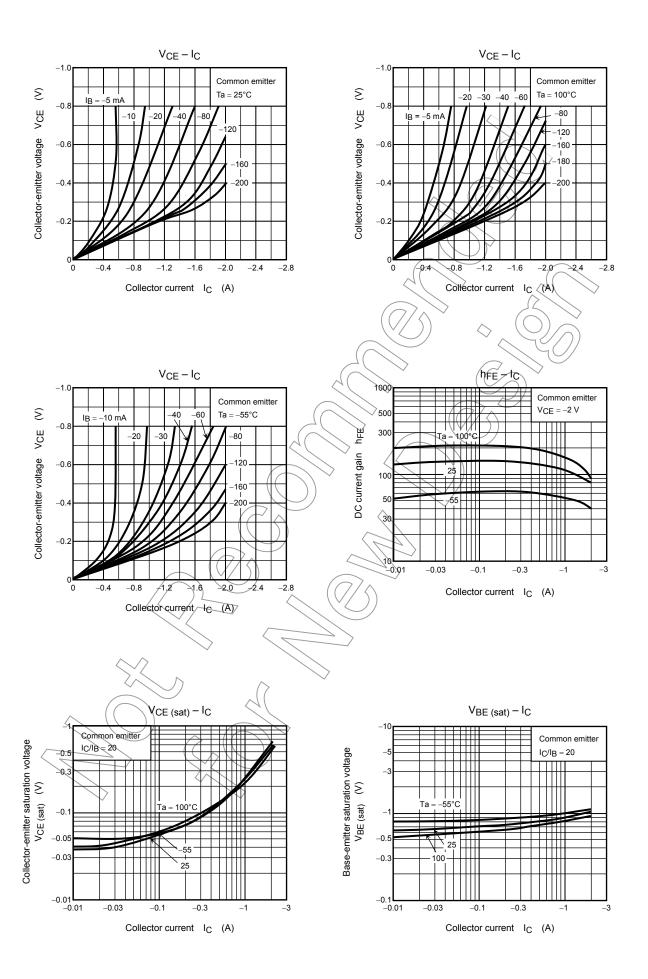
Note 2: A line under a Lot No. identifies the indication of product Labels.

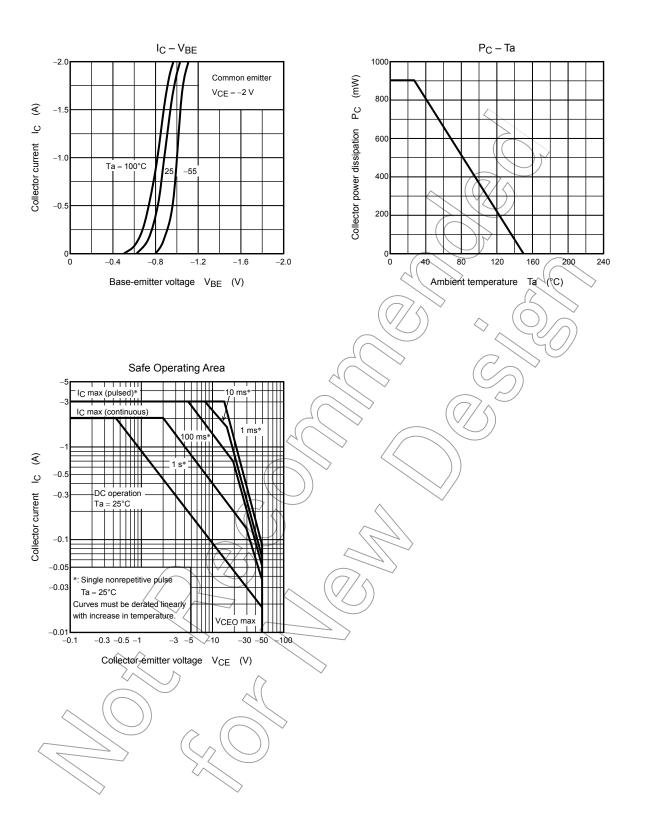
Not underlined: [[Pb]]/INCLUDES > MCV

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.

2 2010-11-09





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