

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

2SA1241

Power Amplifier Applications
Power Switching Applications

- Low Collector saturation voltage: $V_{CE(sat)} = -0.5\text{ V (max)}$ ($I_C = -1\text{ A}$)
- Excellent switching time: $t_{stg} = 1.0\text{ }\mu\text{s (typ.)}$
- Complementary to 2SC3076

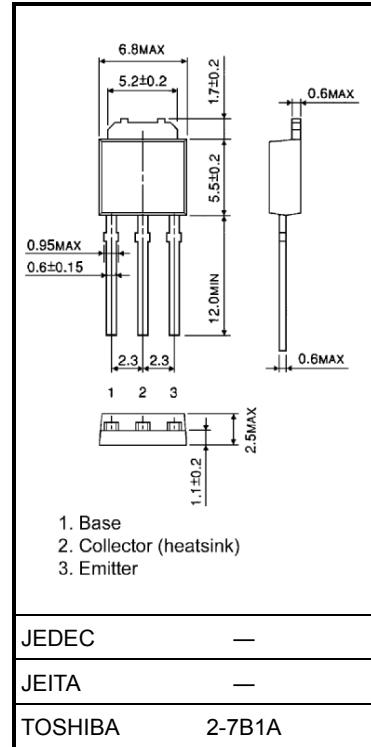
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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	-1	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1.0	W
	$T_c = 25^\circ\text{C}$		10	
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$

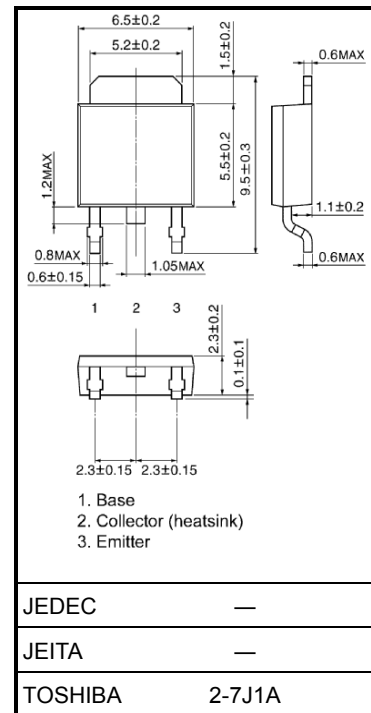
Note1: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

Unit: mm



Weight: 0.36 g (typ.)



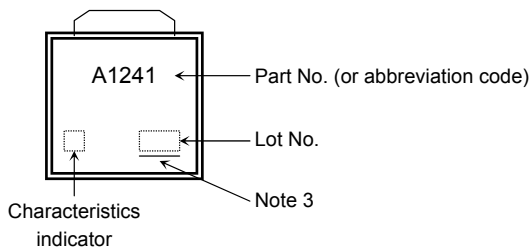
Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit				
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{ V}, I_E = 0$	—	—	-1.0	μA				
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-1.0	μA				
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{ mA}, I_B = 0$	-50	—	—	V				
DC current gain	$h_{FE(1)}$ (Note 2)	$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	70	—	240					
	$h_{FE(2)}$	$V_{CE} = -2\text{ V}, I_B = -1.5\text{ A}$	40	—	—					
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$	—	—	-0.5	V				
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = -1\text{ A}, I_B = -0.05\text{ A}$	—	—	-1.2	V				
Transition frequency	f_T	$V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$	—	100	—	MHz				
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	40	—	pF				
Switching time	Turn-on time	t_{on}					—	0.1	—	μs
	Storage time	t_{stg}					—	1.0	—	
	Fall time	t_f					$I_{B1} = 0.05\text{ A}, I_{B2} = 0.05\text{ A}$ DUTY CYCLE $\leq 1\%$	—	0.1	

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

Marking

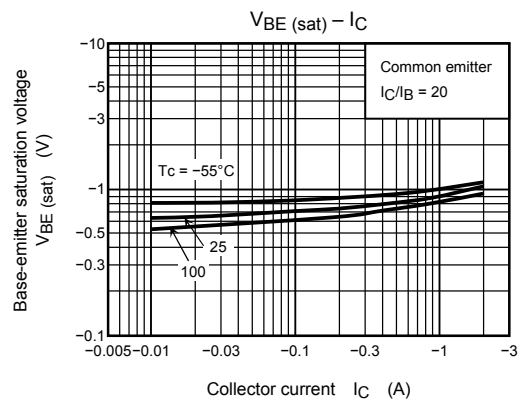
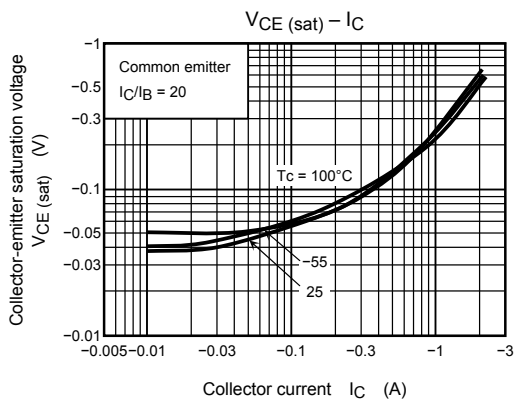
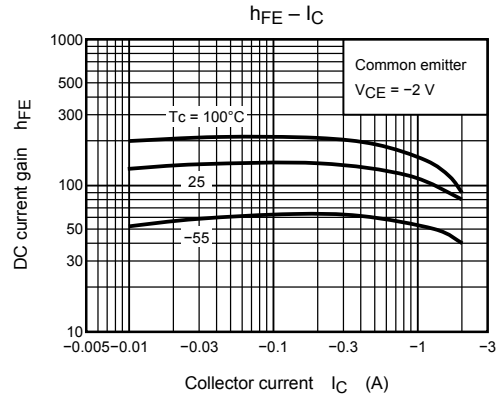
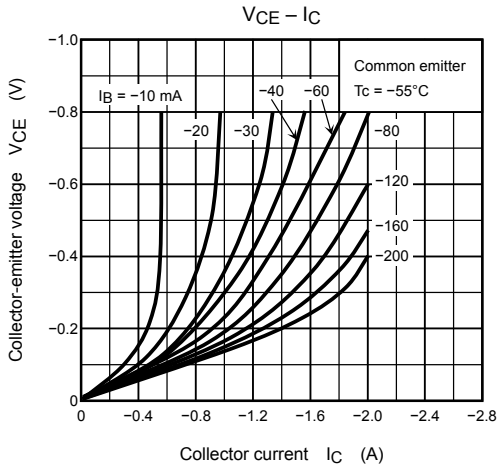
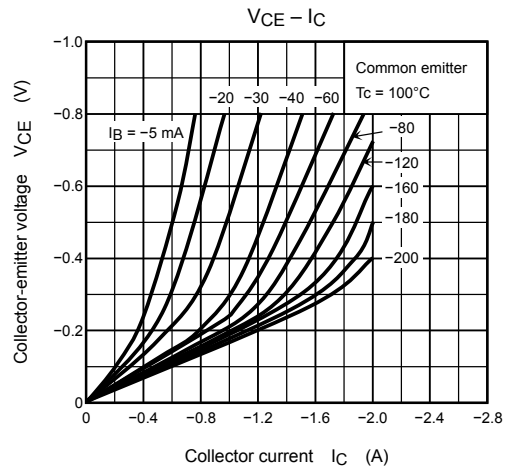
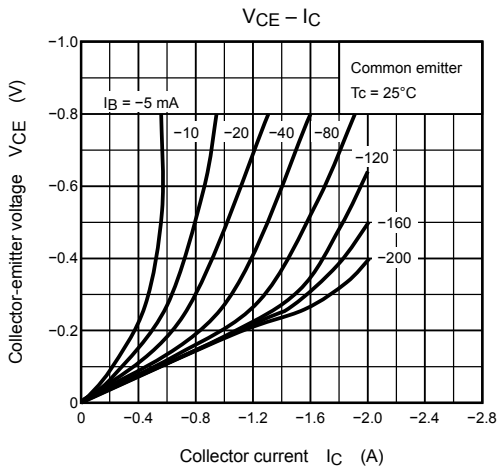


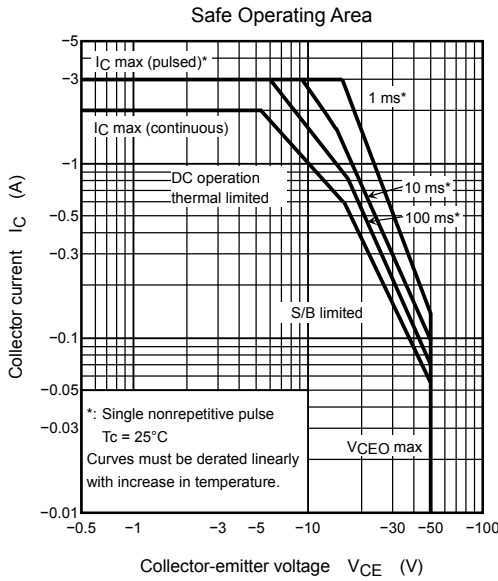
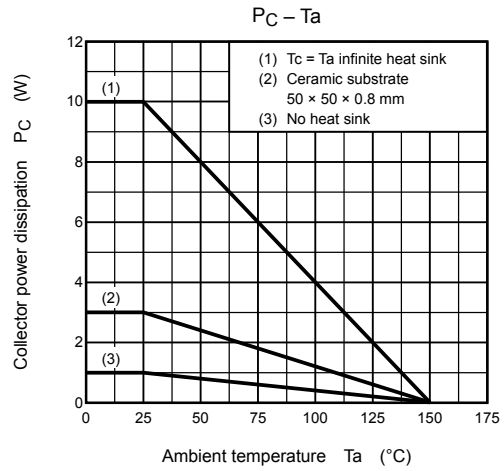
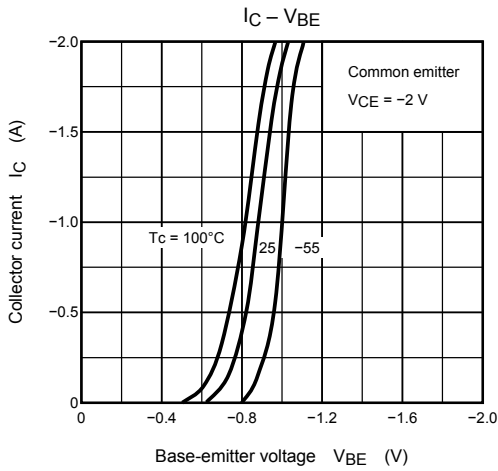
Note 3: A line under a Lot No. identifies the indication of product Labels.

Not underlined: $[[\text{Pb}]]/\text{INCLUDES} > \text{MCV}$

Underlined: $[[\text{G}]]/\text{RoHS COMPATIBLE}$ or $[[\text{G}]]/\text{RoHS} [[\text{Pb}]]$

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