

TOSHIBA Transistor Silicon PNP Triple Diffused Type

2SA1937

High-Voltage Switching Applications

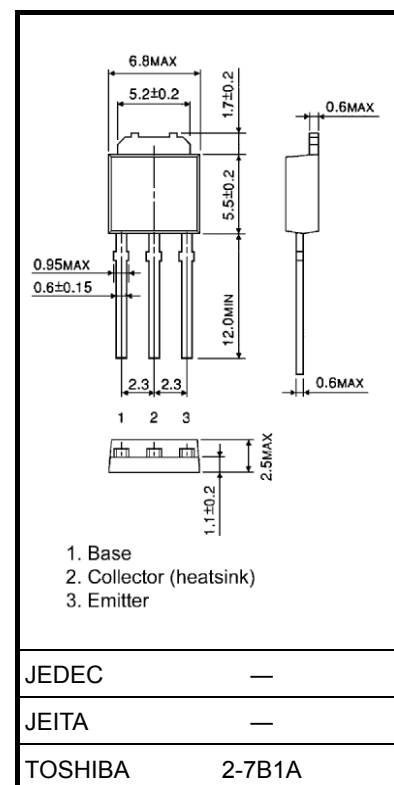
Unit: mm

- High voltage: $V_{CEO} = -600\text{ V}$

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

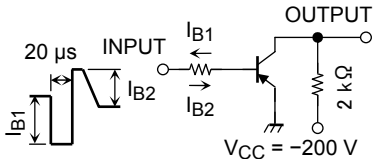
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	-600	V
Collector-emitter voltage		V_{CEO}	-600	V
Emitter-base voltage		V_{EBO}	-7	V
Collector current	DC	I_C	-0.5	A
	Pulse	I_{CP}	-1	
Base current		I_B	-0.25	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1	W
	$T_c = 25^\circ\text{C}$		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).

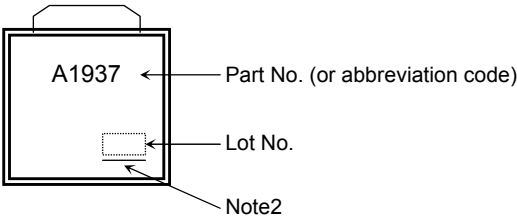


Weight: 0.36 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = -600 V, I _E = 0	—	—	-10	μA
Emitter cut-off current		IEBO	V _{EB} = -7 V, I _C = 0	—	—	-1	μA
Collector-emitter breakdown voltage		V (BR) CEO	I _C = -10 mA, I _B = 0	-600	—	—	V
DC current gain	h _{FE} (1)		V _{CE} = -5 V, I _C = -20 mA	100	—	500	
	h _{FE} (2)		V _{CE} = -5 V, I _C = -100 mA	80	—	450	
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = -100 mA, I _B = -10 mA	—	—	-1.0	V
Base-emitter saturation voltage		V _{BE} (sat)	I _C = -100 mA, I _B = -10 mA	—	-0.76	-0.9	V
Transition frequency		f _T	V _{CE} = -5 V, I _C = -50 mA	—	35	—	MHz
Collector output capacitance		C _{ob}	V _{CB} = -10 V, I _E = 0, f = 1 MHz	—	24	—	pF
Switching time	Turn-on time	t _{on}	 I _{B1} = 10 mA, I _{B2} = 20 mA, DUTY CYCLE ≤ 1%	—	0.2	—	μs
	Storage time	t _{stg}		—	2.3	—	
	Fall time	t _f		—	0.2	—	

Marking

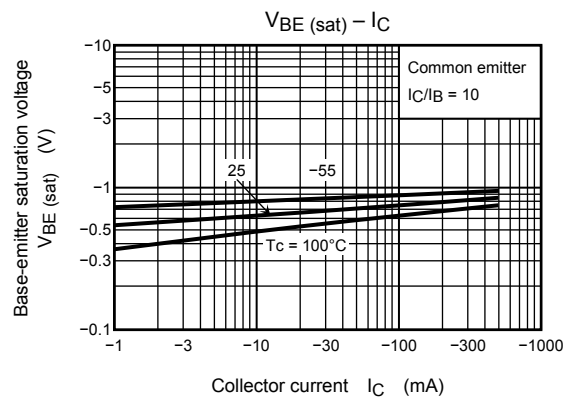
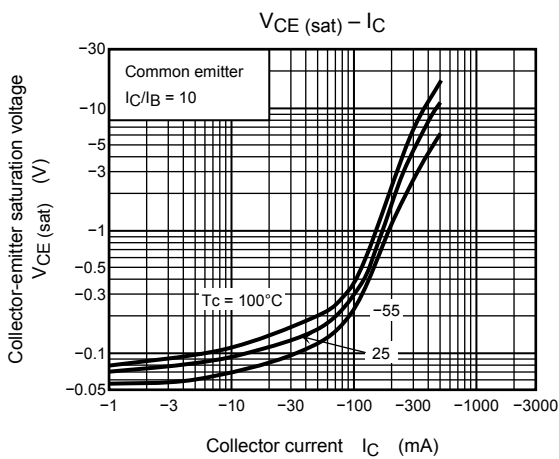
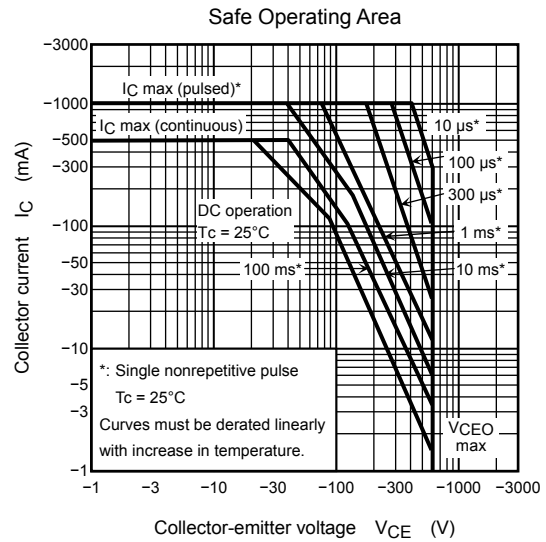
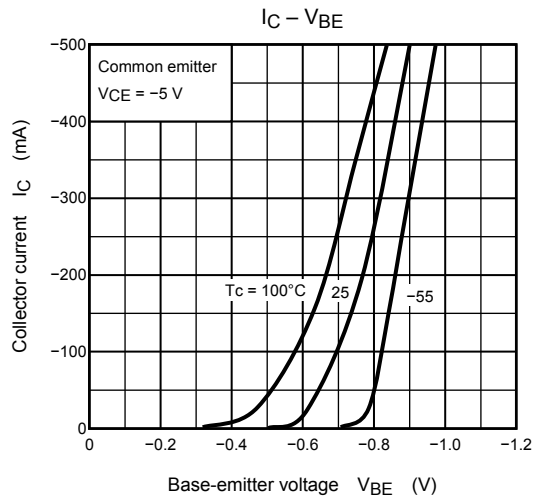
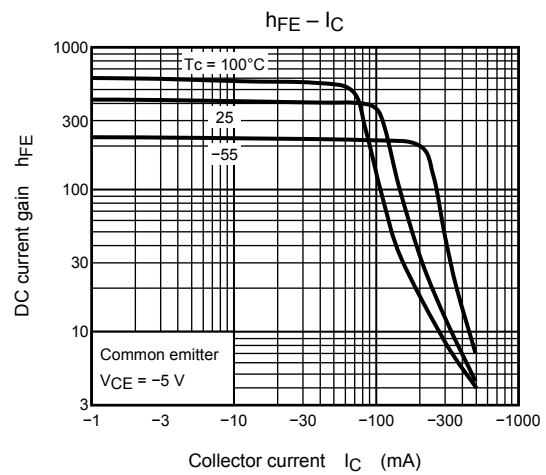
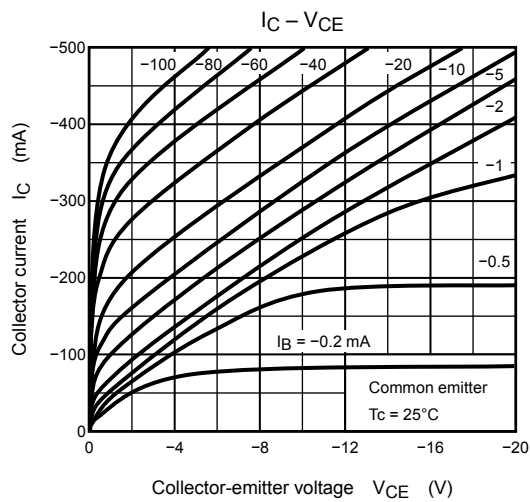


Note2: A line under a Lot No. identifies the indication of product Labels.

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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