

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC5548

High Voltage Switching Applications

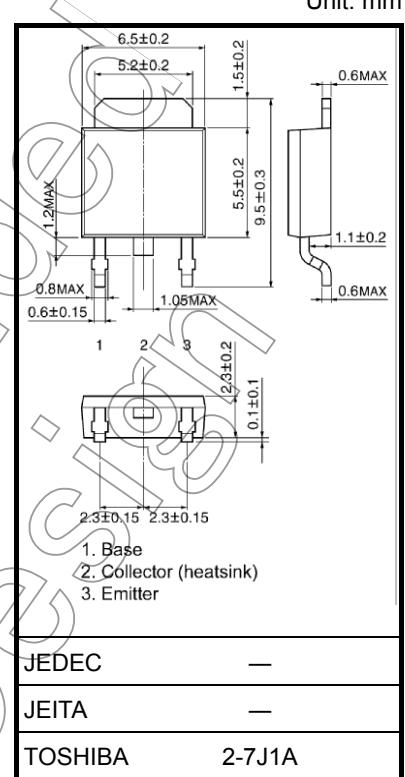
Switching Regulator Applications

DC-DC Converter Applications

- High speed switching: $t_r = 0.5 \mu\text{s}$ (max), $t_f = 0.3 \mu\text{s}$ (max) ($I_C = 0.8 \text{ A}$)
- High collector breakdown voltage: $V_{CEO} = 370 \text{ V}$
- High DC current gain: $h_{FE} = 60$ (min) ($I_C = 0.2 \text{ A}$)

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}	370	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	2	A
	Pulse	I_{CP}	4	
Base current		I_B	0.5	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	1.0	W
	$T_c = 25^\circ\text{C}$		15	
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$



Weight: 0.36 g (typ.)

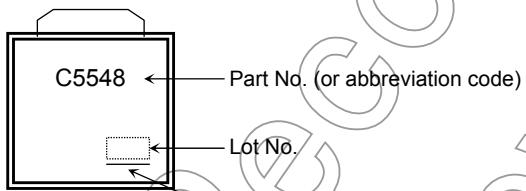
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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}	$V_{CB} = 480 \text{ V}, I_E = 0$	—	—	20	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	10	μA
Collector-base breakdown voltage	$V_{(BR)} \text{ CBO}$	$I_C = 1 \text{ mA}, I_E = 0$	600	—	—	V
Collector-emitter breakdown voltage	$V_{(BR)} \text{ CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	370	—	—	V
DC current gain	$h_{FE} \text{ (1)}$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$	50	—	120	
	$h_{FE} \text{ (2)}$	$V_{CE} = 5 \text{ V}, I_C = 0.2 \text{ A}$	60	—	120	
Collector-emitter saturation voltage	$V_{CE} \text{ (sat)}$	$I_C = 0.8 \text{ A}, I_B = 0.1 \text{ A}$	—	—	1.0	V
Base-emitter saturation voltage	$V_{BE} \text{ (sat)}$	$I_C = 0.8 \text{ A}, I_B = 0.1 \text{ A}$	—	—	1.3	V
Switching time	Rise time	t_r		—	—	0.5
	Storage time	t_{stg}		—	—	3.0
	Fall time	t_f		—	—	0.3

Marking

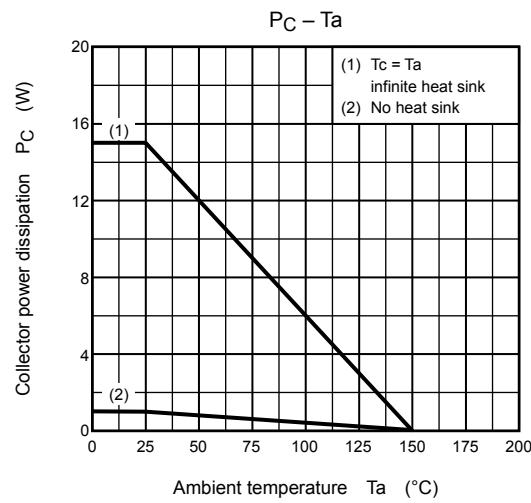
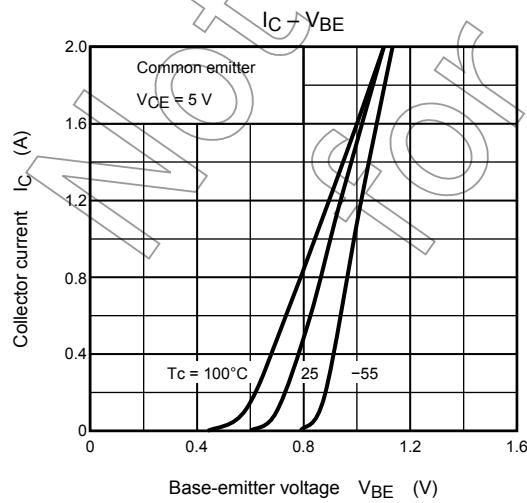
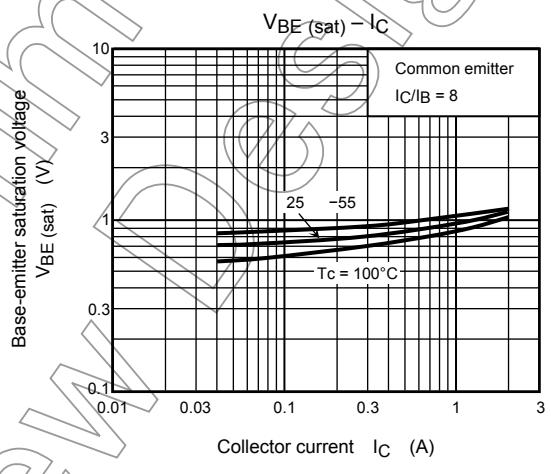
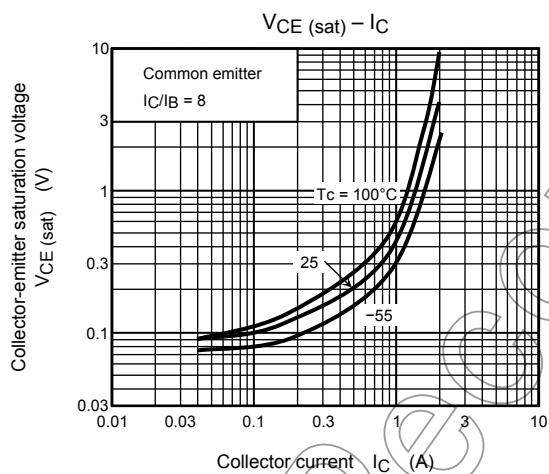
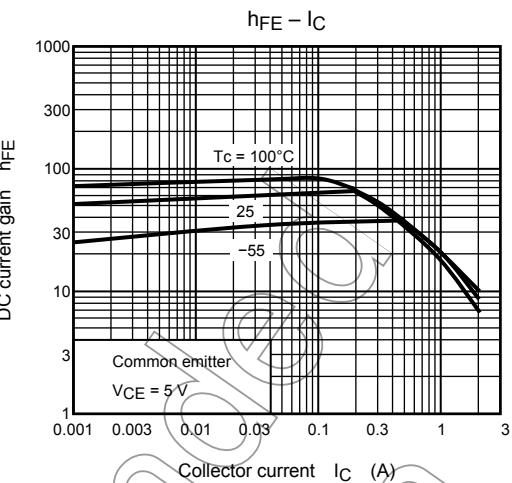
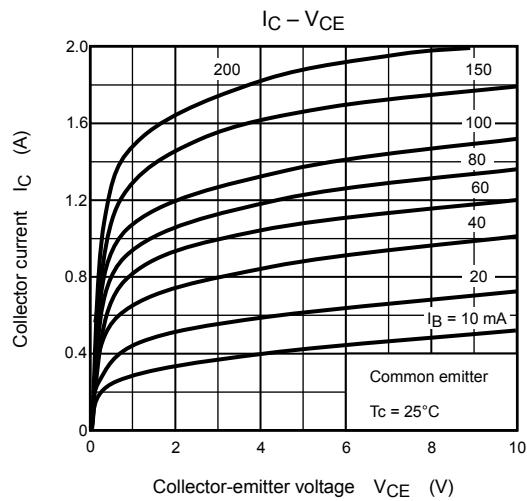


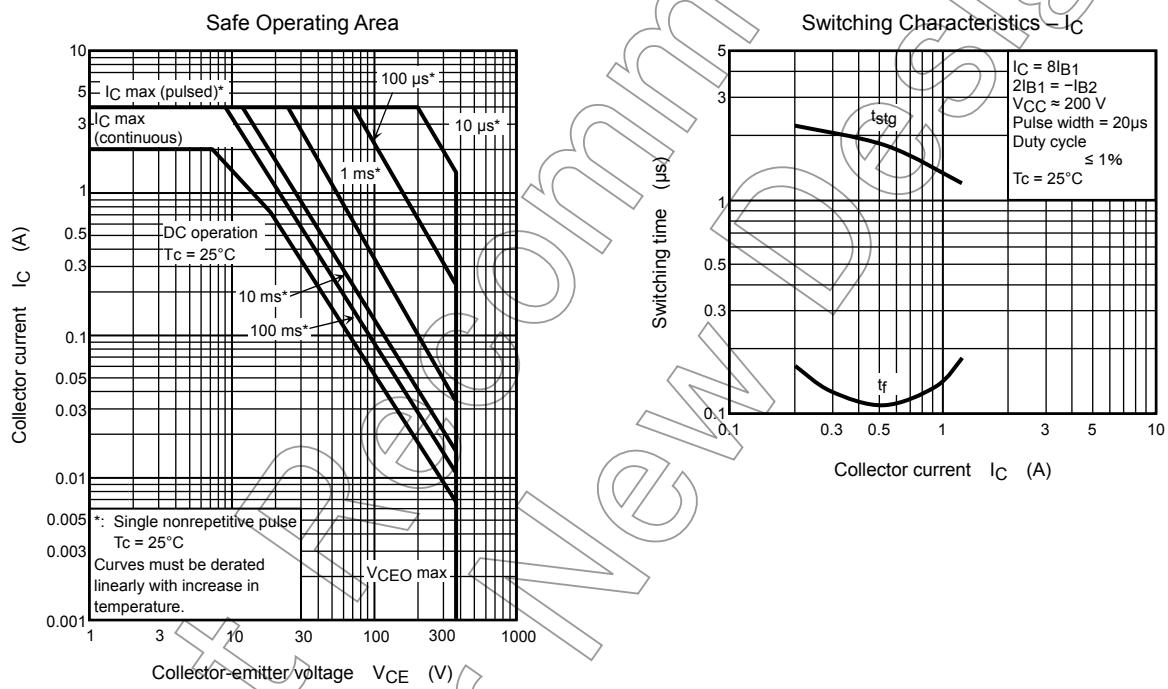
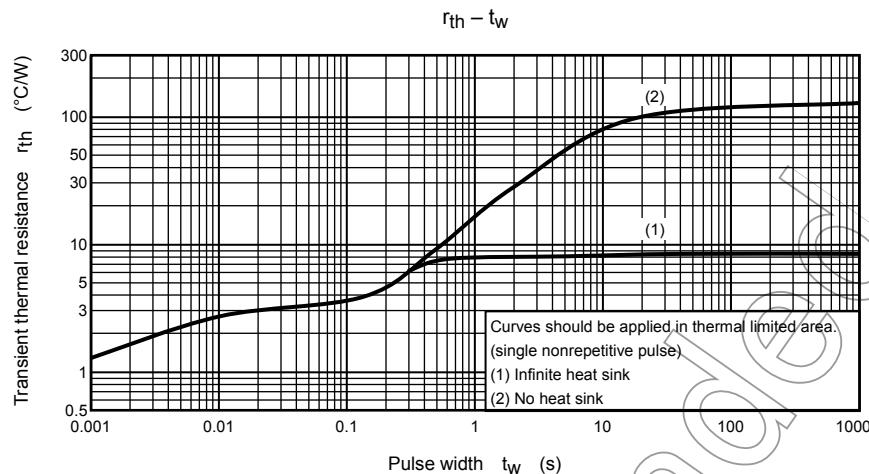
Note 1: A line under a Lot No. identifies the indication of product Labels.

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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