

TOSHIBA Transistor Silicon NPN Triple Diffused Type

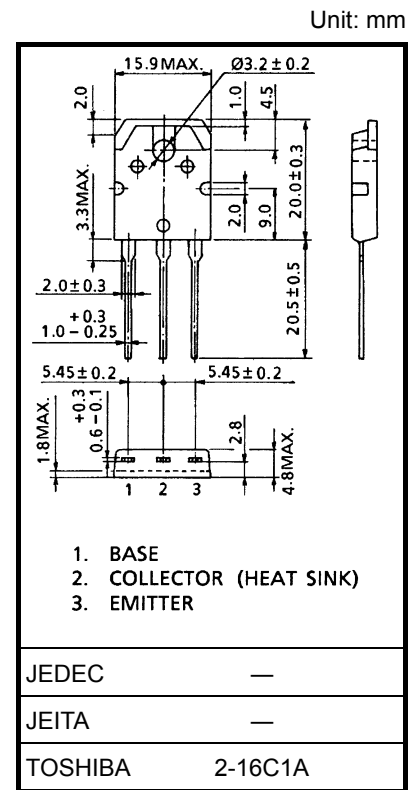
# 2SC5354

High-Speed and High-Voltage Switching Applications  
 Switching Regulator Applications  
 High-Speed DC-DC Converter Applications

- Excellent switching times:  $t_r = 0.7 \mu s$  (max)  
 $t_f = 0.5 \mu s$  (max) ( $I_C = 2 A$ )
- High breakdown voltage:  $V_{CEO} = 800 V$

### Absolute Maximum Ratings ( $T_a = 25^\circ C$ )

Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CB0}$	900	V
Collector-emitter voltage		$V_{CEO}$	800	V
Emitter-base voltage		$V_{EBO}$	7	V
Collector current	DC	$I_C$	5	A
	Pulse	$I_{CP}$	8	
Base current		$I_B$	2	A
Collector power dissipation ( $T_c = 25^\circ C$ )		$P_C$	100	W
Junction temperature		$T_j$	150	$^\circ C$
Storage temperature range		$T_{stg}$	-55 to 150	$^\circ C$



Weight: 4.7 g (typ.)

Note 1: 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.

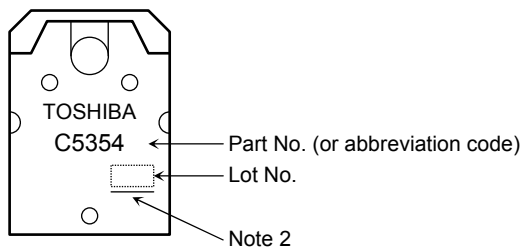
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Start of commercial production  
 1998-11

## Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 720 \text{ V}, I_E = 0$	—	—	100	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	1	$\text{mA}$
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1 \text{ mA}, I_E = 0$	900	—	—	$\text{V}$
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	800	—	—	$\text{V}$
DC current gain		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$	10	—	—	
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$	15	—	60	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$	—	—	1	$\text{V}$
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 2 \text{ A}, I_B = 0.4 \text{ A}$	—	—	1.3	$\text{V}$
Switching time	Rise time	$t_r$	<p> <math>V_{CC} \approx 360 \text{ V}</math>  <math>I_C = 2 \text{ A}</math>  <math>20 \mu\text{s}</math>  <math>180 \Omega</math>            Input <math>I_{B1}</math>  <math>I_{B2}</math>            Output         </p>	—	—	0.7	$\mu\text{s}$
	Storage time	$t_{stg}$		—	—	4	
	Fall time	$t_f$		$I_{B1} = 0.25 \text{ A},$ $I_{B2} = 0.75 \text{ A},$ duty cycle $\leq 1\%$	—	—	

## Marking

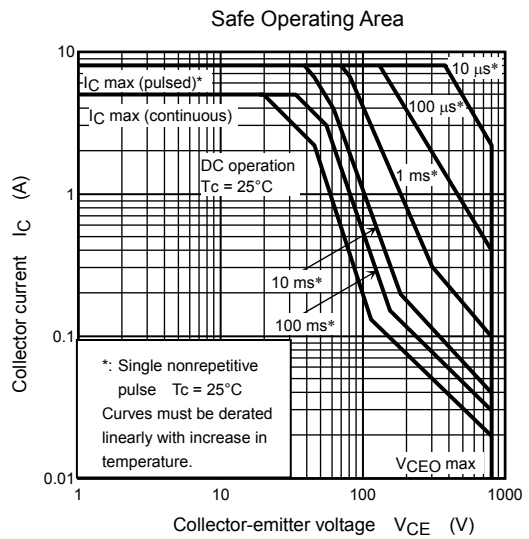
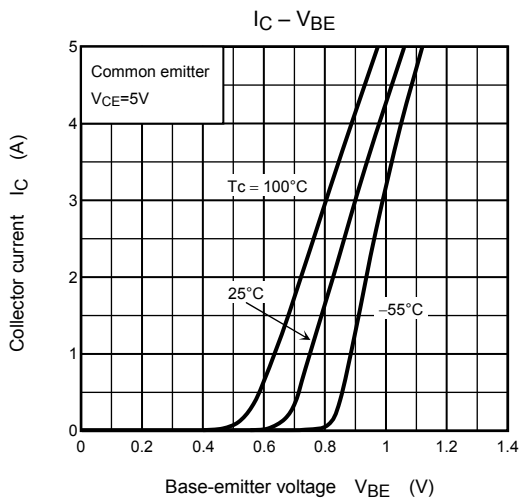
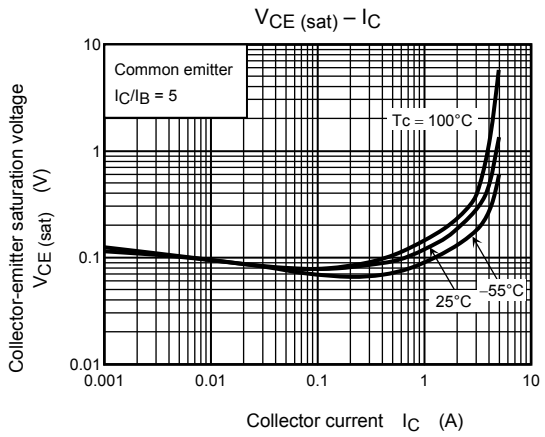
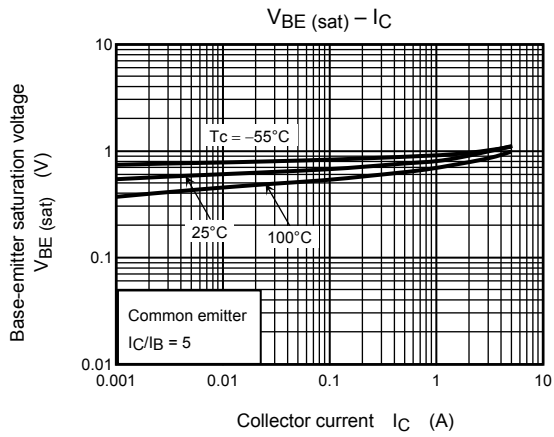
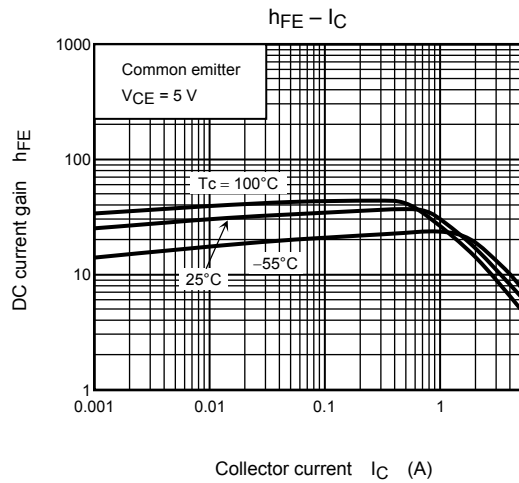
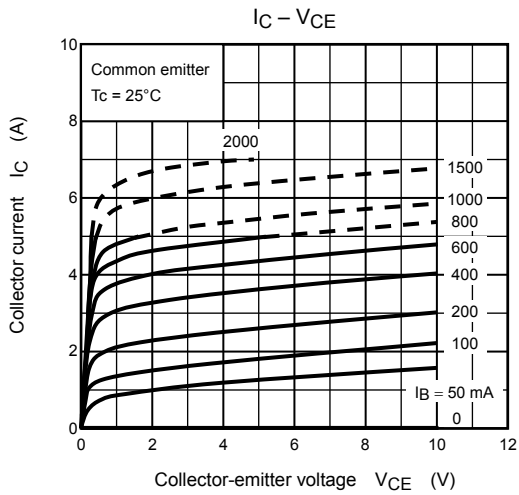


Note 2: A line under a Lot No. identifies the indication of product Labels.

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

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

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



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