

TOSHIBA Transistor Silicon NPN Triple Diffused Type

## 2SC3307

High-Speed and High-Voltage Switching Applications

Switching Regulator Applications

High-Speed DC-DC Converter Applications

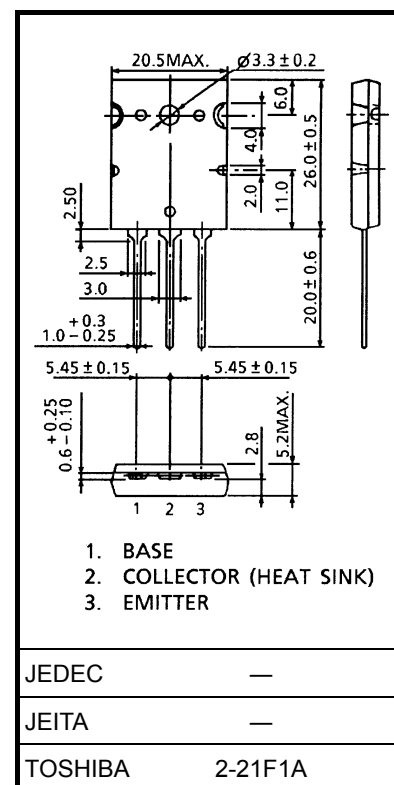
Industrial Applications

Unit: mm

- Excellent switching times:  $t_r = 1.0 \mu s$  (max),  $t_f = 1.0 \mu s$  (max)  
( $I_C = 5 A$ )
- High collector breakdown voltage:  $V_{CEO} = 800 V$

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

Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	900	V
Collector-emitter voltage		$V_{CEO}$	800	V
Emitter-base voltage		$V_{EBO}$	7	V
Collector current	DC	$I_C$	10	A
	Pulse	$I_{CP}$	15	
Base current		$I_B$	3	A
Collector power dissipation ( $T_c = 25^\circ C$ )		$P_C$	150	W
Junction temperature		$T_j$	150	$^\circ C$
Storage temperature range		$T_{stg}$	-55 to 150	$^\circ C$

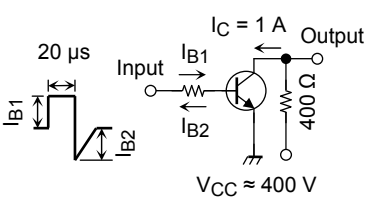


Weight: 9.75 g (typ.)

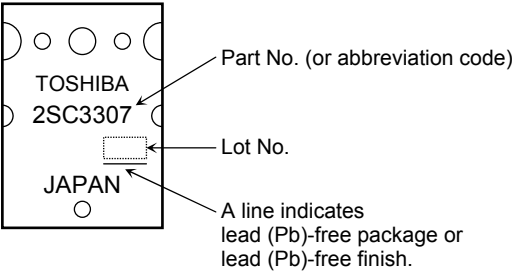
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

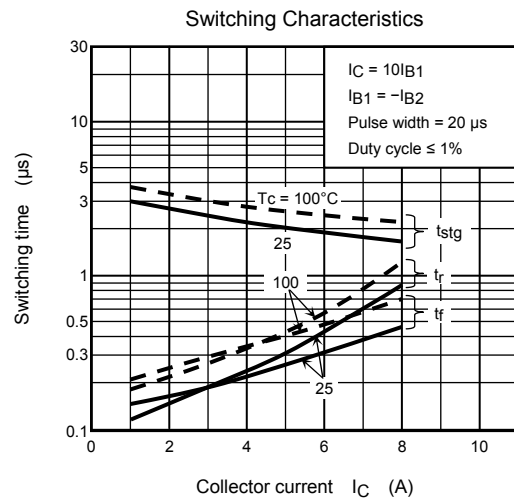
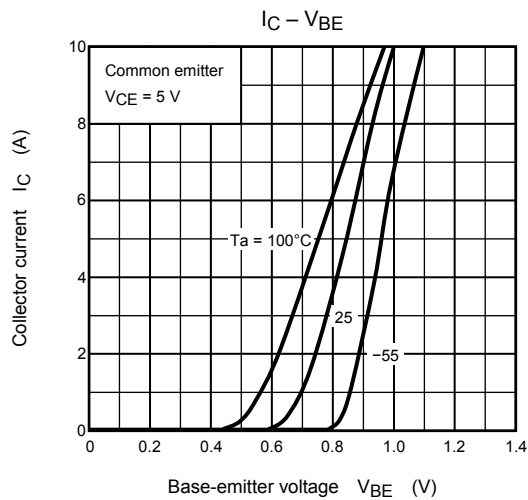
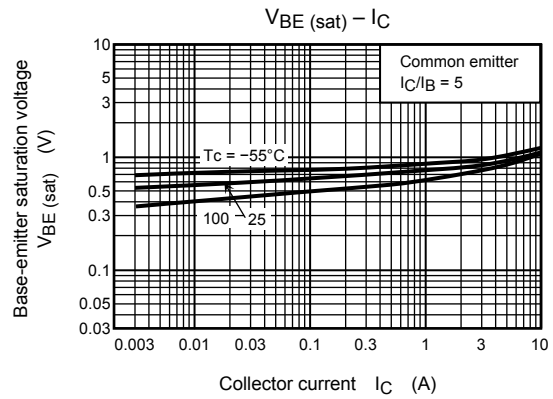
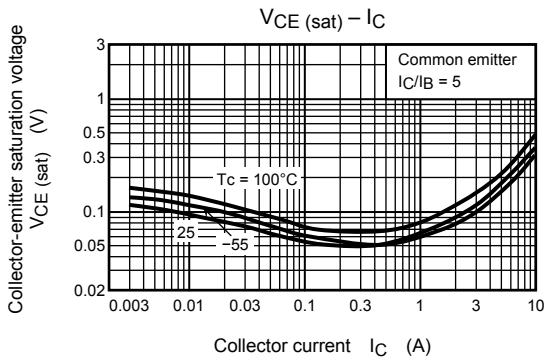
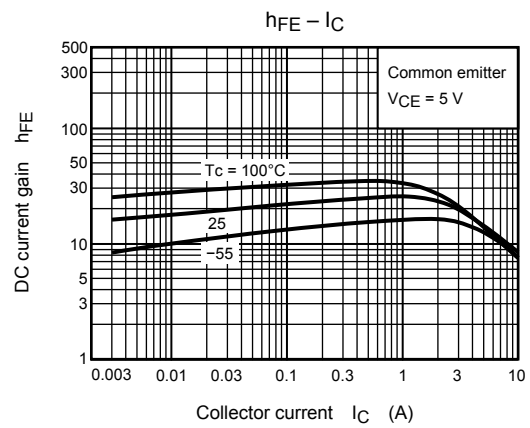
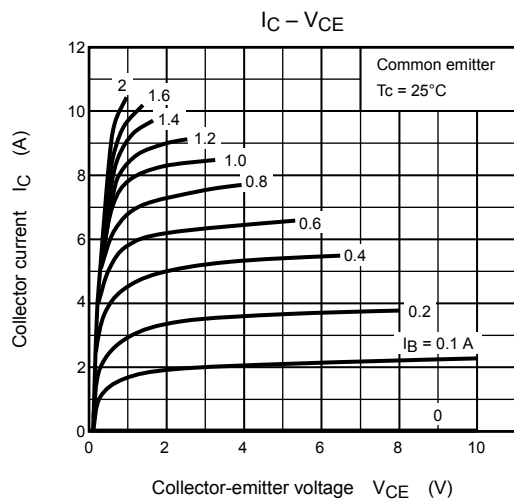
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

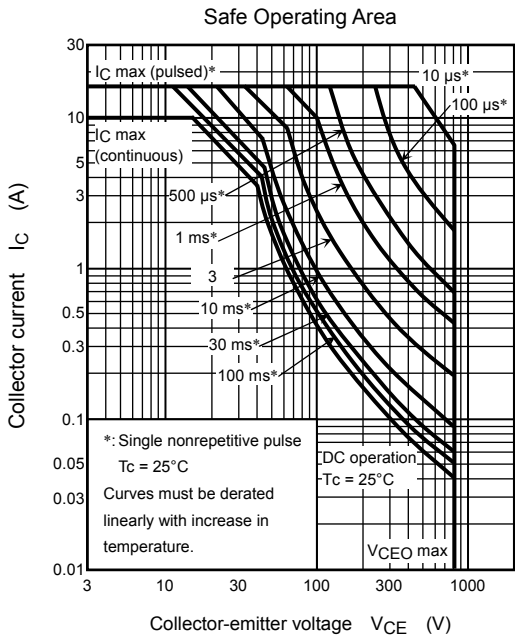
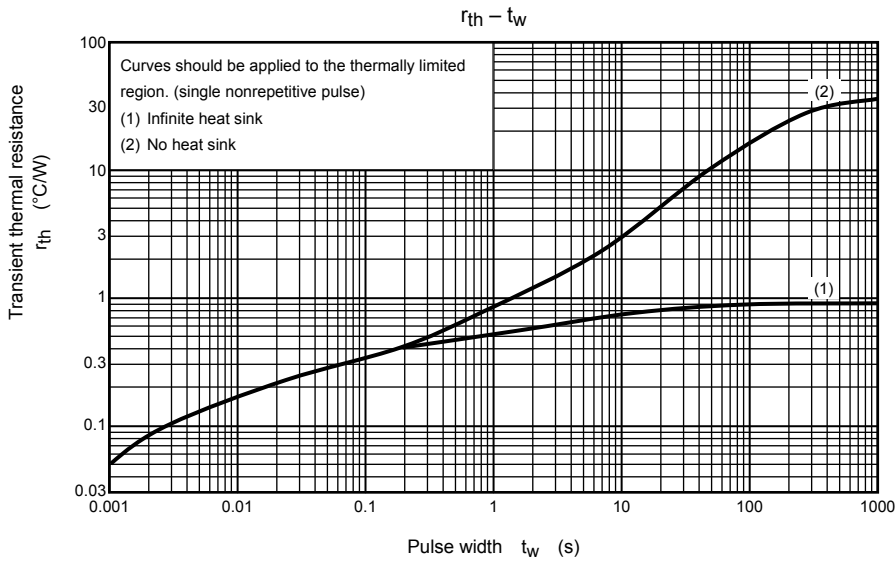
Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 800\text{ V}, I_E = 0$	—	—	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		$V_{(BR)\text{ CEO}}$	$I_C = 1\text{ mA}, I_E = 0$	900	—	—	$\text{V}$
Collector-emitter breakdown voltage		$V_{(BR)\text{ CEO}}$	$I_C = 10\text{ mA}, I_B = 0$	800	—	—	$\text{V}$
DC current gain		$h_{FE}\text{ (1)}$	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	10	—	—	
		$h_{FE}\text{ (2)}$	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	10	—	—	
Collector-emitter saturation voltage		$V_{CE\text{ (sat)}}$	$I_C = 5\text{ A}, I_B = 1\text{ A}$	—	—	1.0	$\text{V}$
Base-emitter saturation voltage		$V_{BE\text{ (sat)}}$	$I_C = 5\text{ A}, I_B = 1\text{ A}$	—	—	1.5	$\text{V}$
Switching time	Rise time	$t_r$	 $I_{B1} = -I_{B2} = 0.4\text{ A}, \text{ duty cycle} \leq 1\%$	—	—	1.0	$\mu\text{s}$
	Storage time	$t_{stg}$		—	—	3.0	
	Fall time	$t_f$		—	—	1.0	

Marking







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