

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC3405

Switching Regulator and High Voltage Switching Applications

High Speed DC-DC Converter Applications

- Excellent switching times: $t_r = 1.0 \mu s$ (max)
 $t_f = 1.0 \mu s$ (max), ($I_C = 0.3 A$)
- High collector breakdown voltage: $V_{CEO} = 800 V$

Absolute Maximum Ratings (Ta = 25°C)

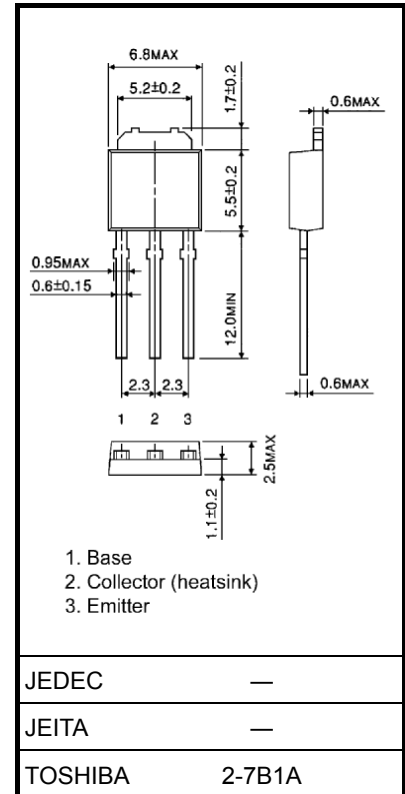
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	900	V
Collector-emitter voltage		V_{CEO}	800	V
Emitter-base voltage		V_{EBO}	8	V
Collector current	DC	I_C	0.8	A
	Pulse	I_{CP}	1.5	
Base current		I_B	0.2	A
Collector power dissipation	Ta = 25°C	P_C	1.0	W
	Tc = 25°C		20	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

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.

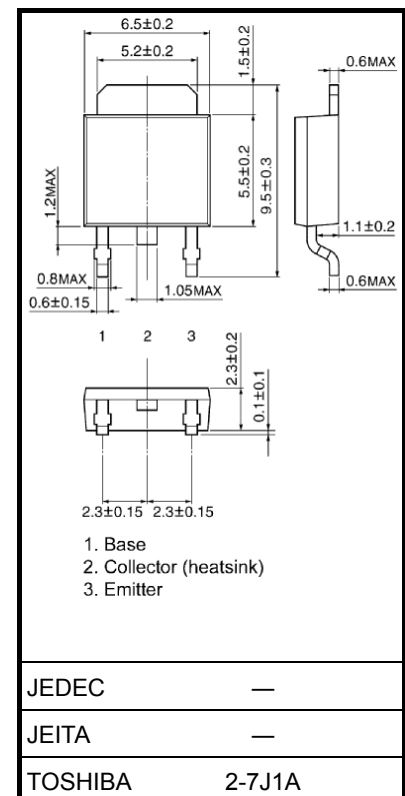
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Industrial Applications

Unit: mm



Weight: 0.36 g (typ.)

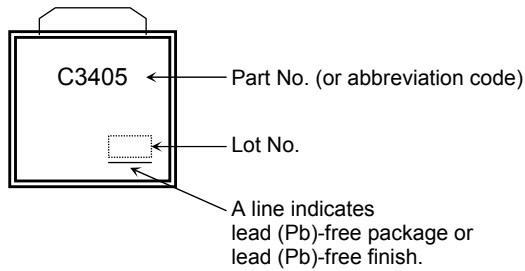


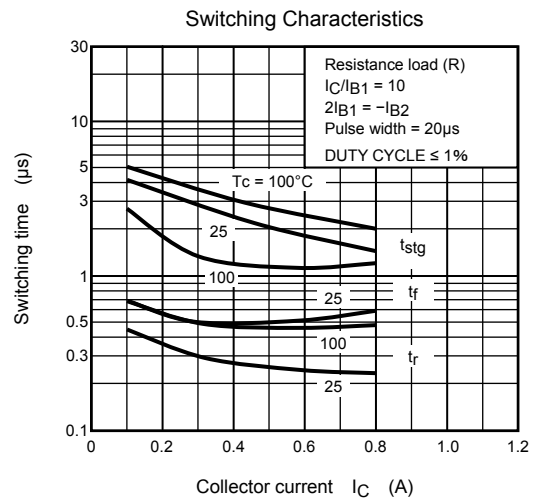
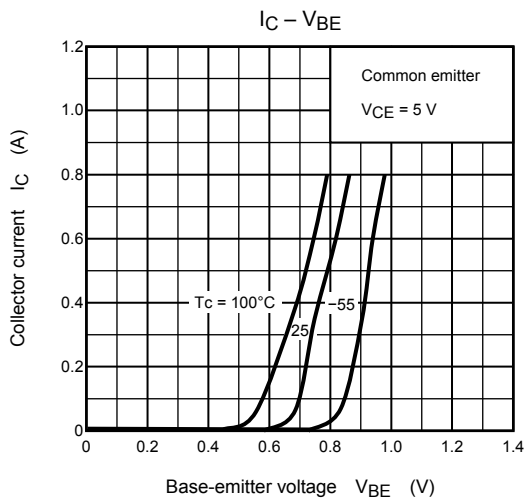
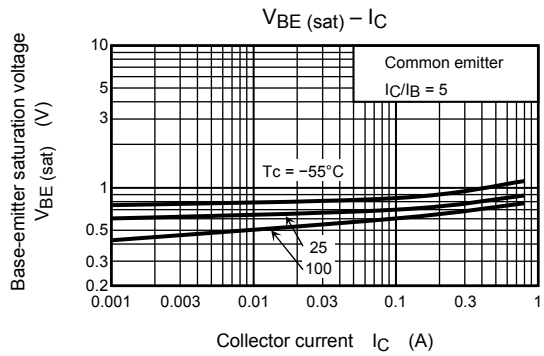
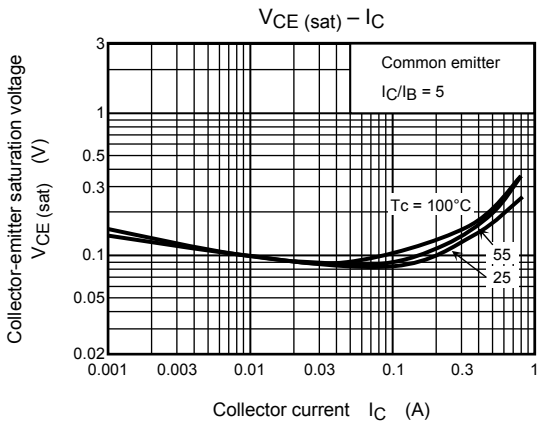
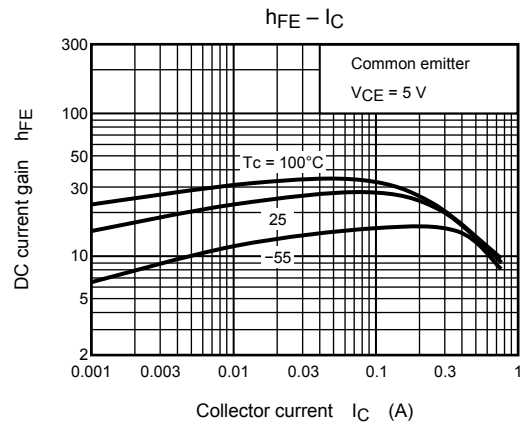
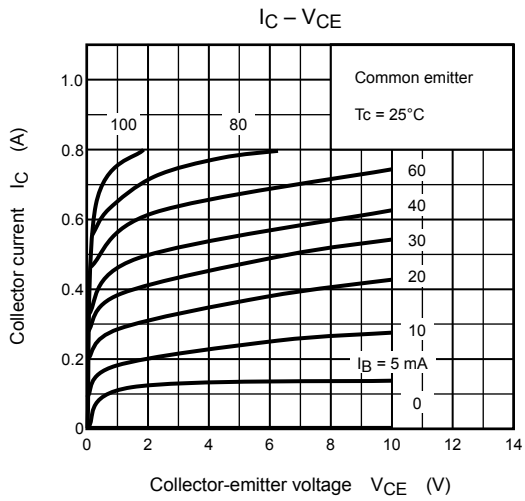
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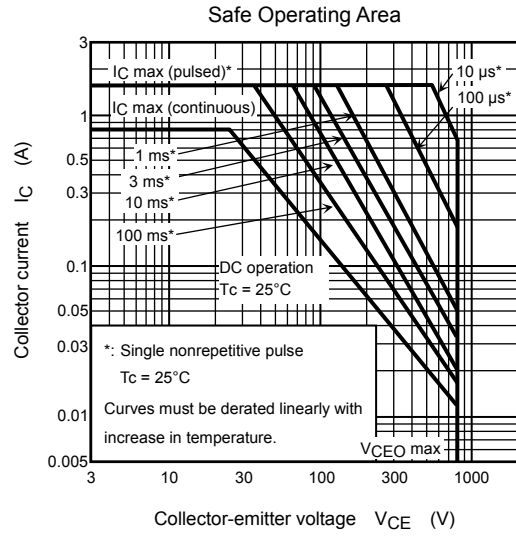
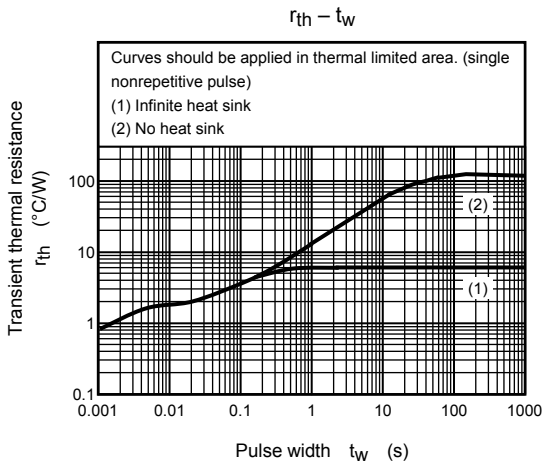
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 800\text{ V}, I_E = 0$	—	—	100	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 8\text{ V}, I_C = 0$	—	—	1	mA
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1\text{ mA}, I_E = 0$	900	—	—	V
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	800	—	—	V
DC current gain		h_{FE}	$V_{CE} = 5\text{ V}, I_C = 1\text{ mA}$	6	—	—	
			$V_{CE} = 5\text{ V}, I_C = 0.3\text{ A}$	10	—	—	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 0.3\text{ A}, I_B = 0.06\text{ A}$	—	—	0.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 0.3\text{ A}, I_B = 0.06\text{ A}$	—	—	1.2	V
Switching time	Rise time	t_r	<p>$I_{B1} = -I_{B2} = 0.06\text{ A}$, DUTY CYCLE $\leq 1\%$</p>	—	—	1.0	μs
	Storage time	t_{stg}		—	—	4.0	
	Fall time	t_f		—	—	1.0	

Marking







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20070701-EN

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