

TOSHIBA Transistor Silicon NPN Triple Diffused Type (PCT Process)

2SC3425

Switching Regulator and High-Voltage Switching Applications

High-Speed DC-DC Converter Applications

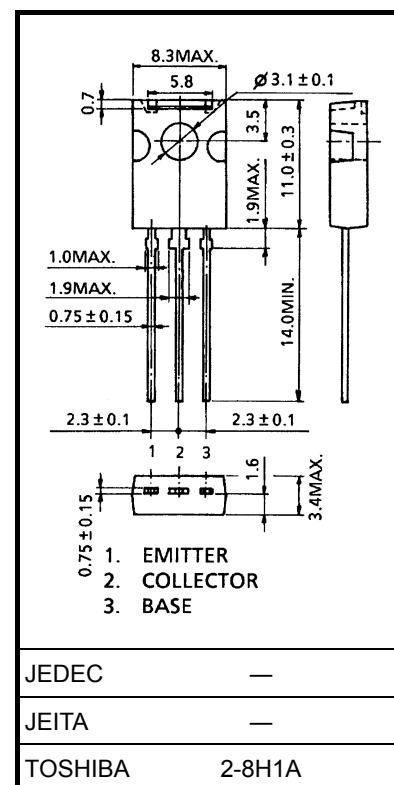
- Excellent switching times: $t_r = 1.0 \mu s$ (max)
 $t_f = 1.5 \mu s$ (max), ($I_C = 0.5 A$)
- High breakdown voltage: $V_{CEO} = 400 V$

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

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	500	V
Collector-emitter voltage		V_{CEO}	400	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	0.8	A
	Pulse	I_{CP}	1.5	
Base current		I_B	0.5	A
Collector power dissipation	$T_a = 25^\circ C$	P_C	1.2	W
	$T_c = 25^\circ C$		10	
Junction temperature		T_j	150	$^\circ C$
Storage temperature range		T_{stg}	-55 to 150	$^\circ C$

Industrial Applications

Unit: mm

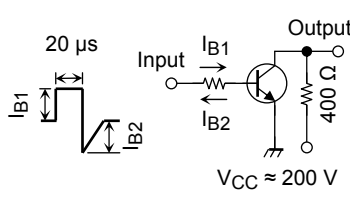


Weight: 0.82 g (typ.)

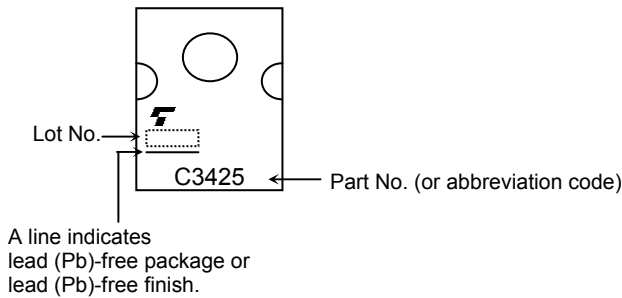
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

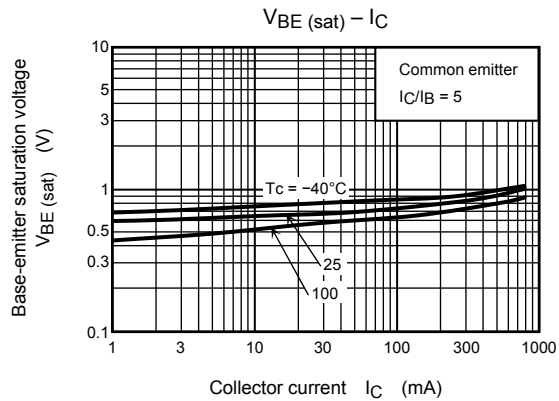
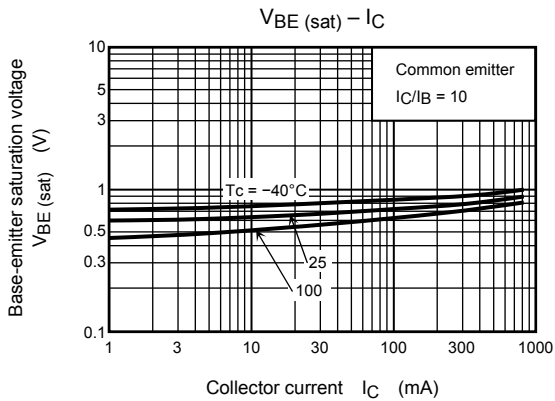
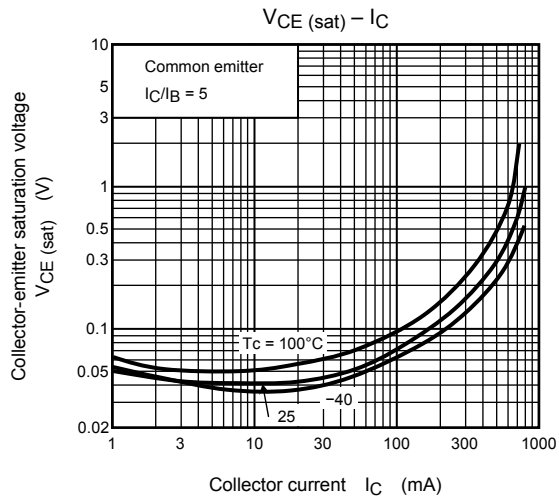
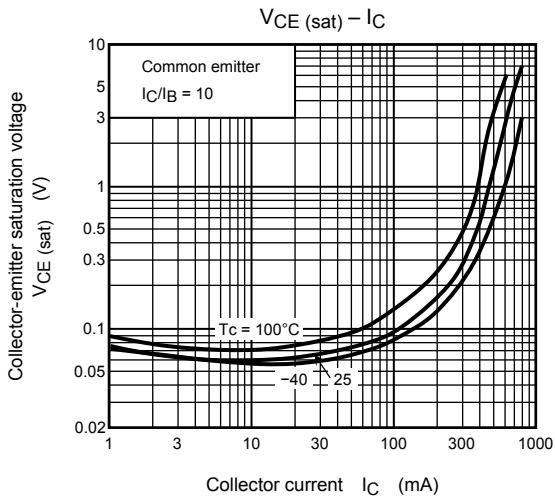
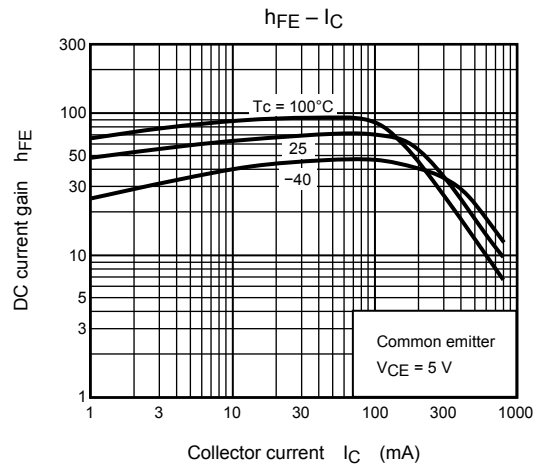
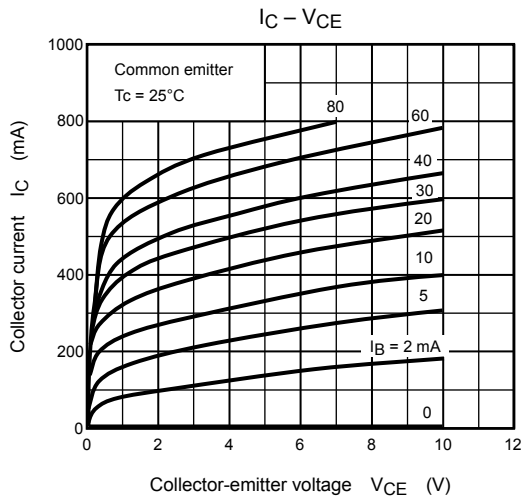
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

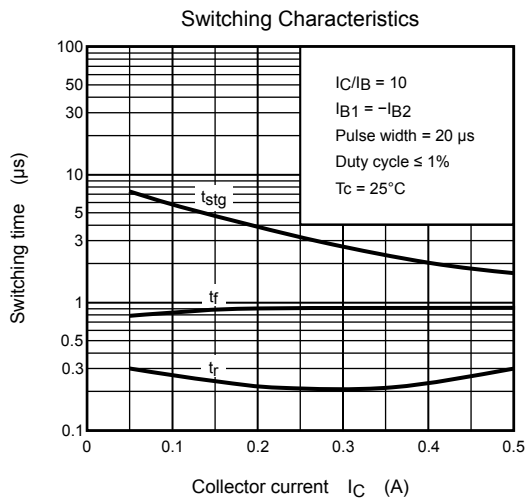
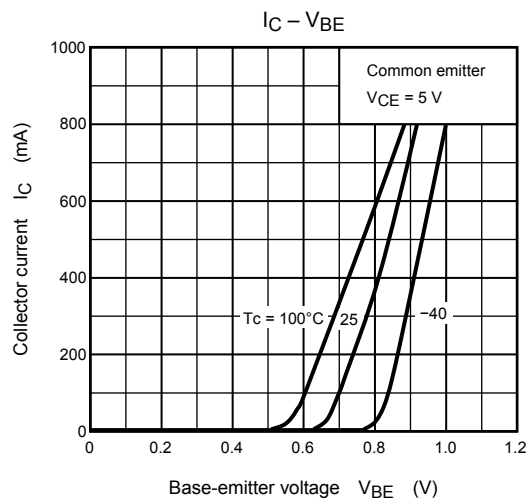
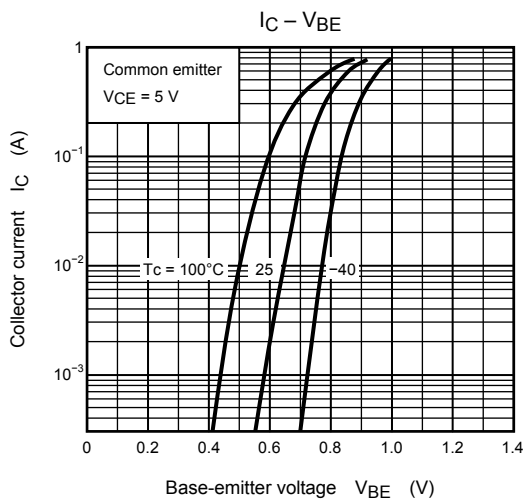
Electrical Characteristics (Tc = 25°C)

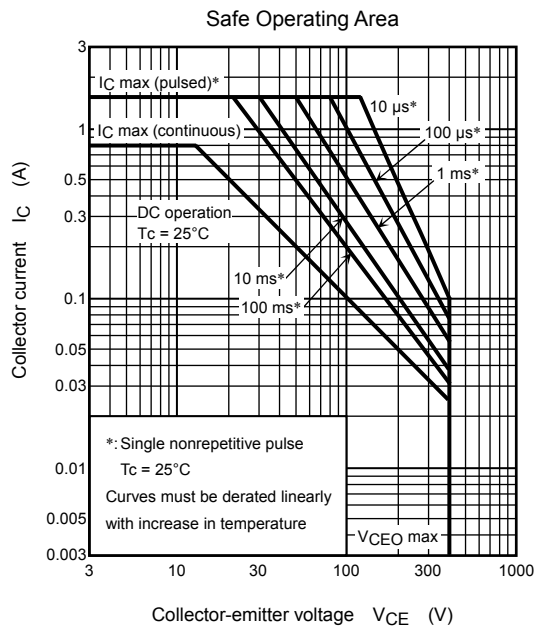
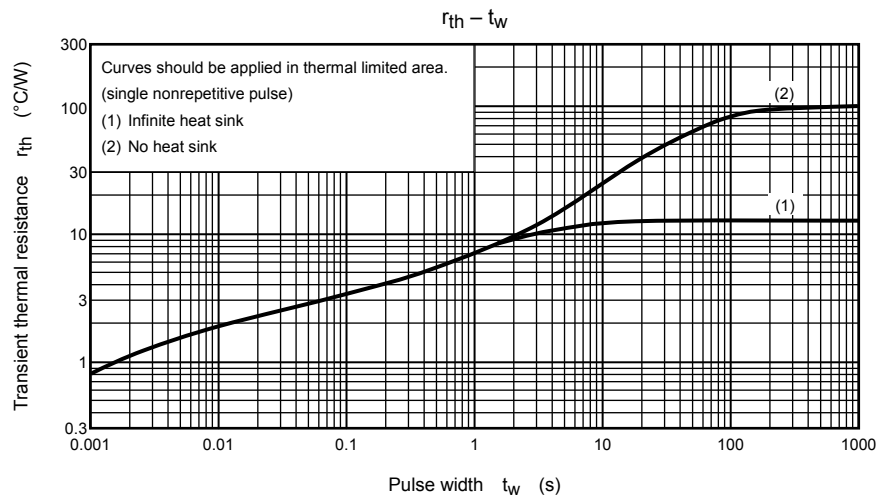
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 400\text{ V}, I_E = 0$	—	—	100	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 7\text{ V}, I_C = 0$	—	—	100	μA
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1\text{ mA}, I_E = 0$	500	—	—	V
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	400	—	—	V
DC current gain		h_{FE}	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ A}$	20	—	100	
			$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}$	10	—	—	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	0.5	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 0.1\text{ A}, I_B = 0.01\text{ A}$	—	—	1.0	V
Switching time	Rise time	t_r	 $I_{B1} = -I_{B2} = 0.05\text{ A}, \text{ duty cycle } \leq 1\%$	—	—	1.0	μs
	Storage time	t_{stg}		—	—	2.5	
	Fall time	t_f		—	—	1.5	

Marking









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