

TOSHIBA Transistor Silicon NPN Triple Diffused Type (PCT process)

2SC5172

Switching Regulator and High-Voltage Switching Applications

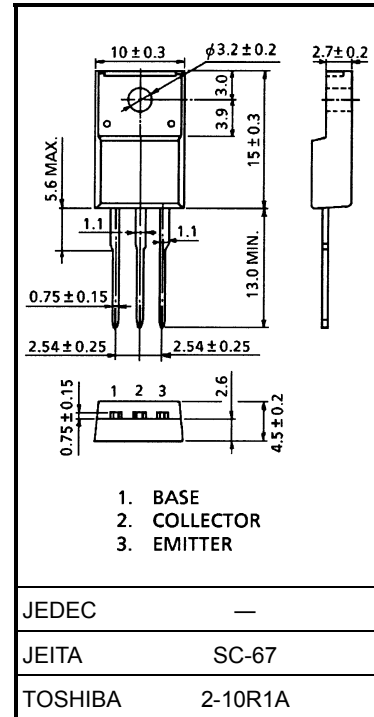
High-Speed DC-DC Converter Applications

Unit: mm

- Excellent switching times: $t_r = 0.5 \mu s$ (max),
 $t_f = 0.3 \mu s$ (max) at $I_C = 2 A$
- High collector breakdown voltage: $V_{CEO} = 400 V$

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

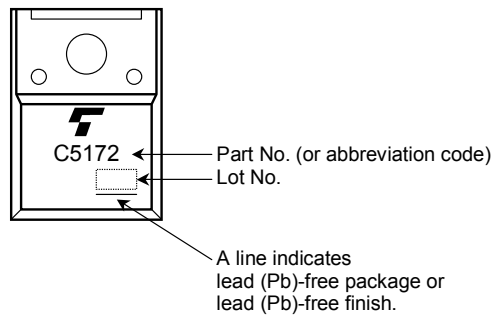
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	600	V
Collector-emitter voltage		V_{CEO}	400	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	5	A
	Pulse	I_{CP}	7	
Base current		I_B	2	A
Collector power dissipation	$T_a = 25^\circ C$	P_C	2.0	W
	$T_c = 25^\circ C$		25	
Junction temperature		T_j	150	$^\circ C$
Storage temperature range		T_{stg}	-55 to 150	$^\circ C$

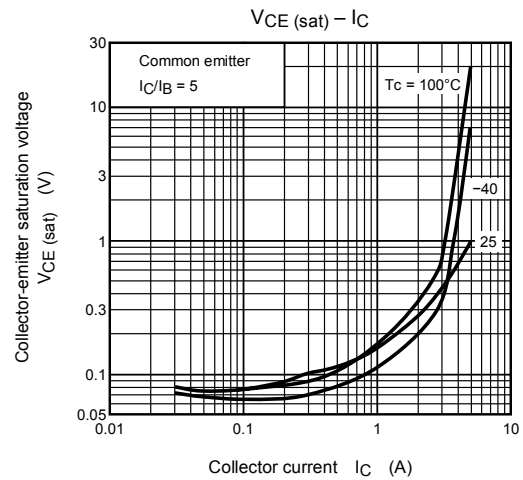
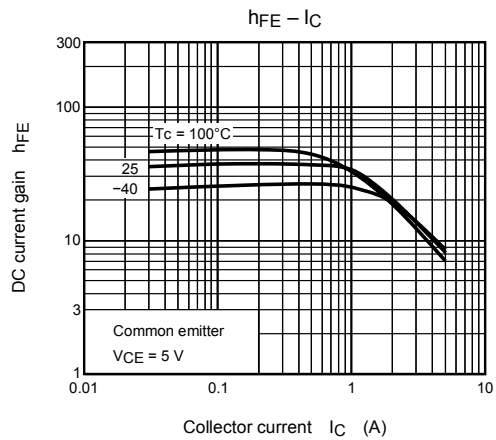
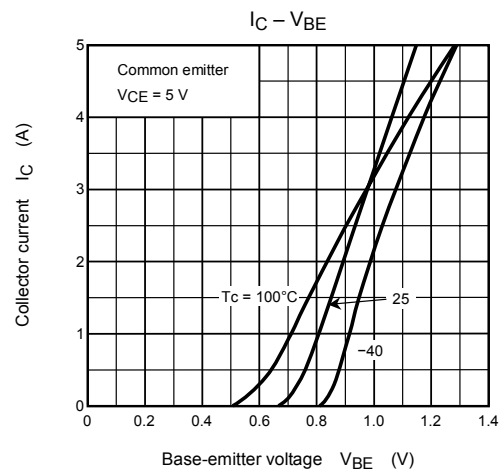
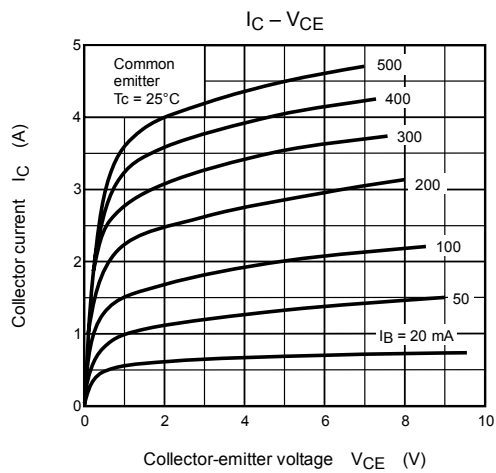


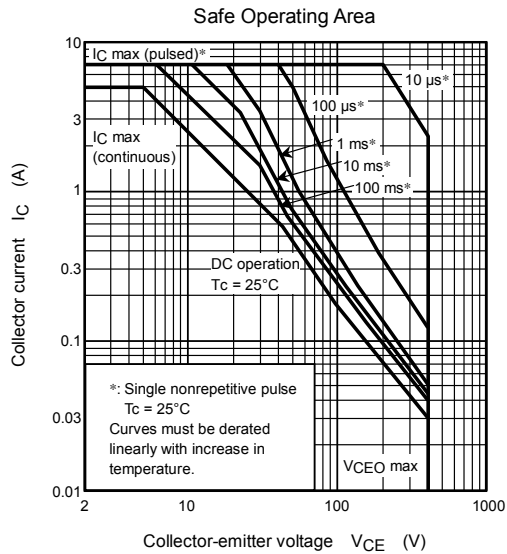
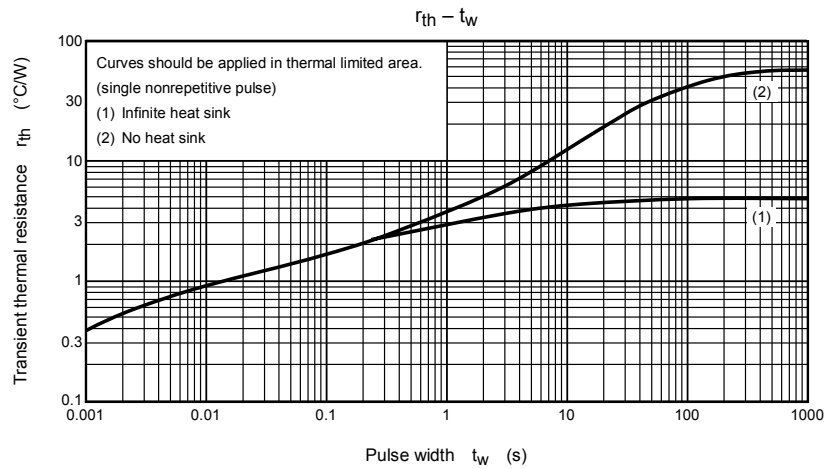
Weight: 1.7 g (typ.)

Electrical Characteristics ($T_c = 25^\circ C$)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 500 V, I_E = 0$	—	—	20	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 7 V, I_C = 0$	—	—	100	nA
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1 mA, I_E = 0$	600	—	—	V
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10 mA, I_B = 0$	400	—	—	V
DC current gain		$h_{FE} (1)$	$V_{CE} = 5 V, I_C = 1 mA$	13	—	—	
		$h_{FE} (2)$	$V_{CE} = 5 V, I_C = 0.5 A$	20	—	65	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 2 A, I_B = 0.25 A$	—	—	1.0	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 2 A, I_B = 0.25 A$	—	—	1.3	V
Switching time	Rise time	t_r	<p>$I_{B1} = 0.25 A, I_{B2} = -0.5 A,$ duty cycle < 1%</p>	—	—	0.5	μs
	Storage time	t_{stg}		—	—	2.0	
	Fall time	t_f		—	—	0.3	

Marking





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