

TOSHIBA Transistor Silicon NPN Triple Diffused Type (PCT process)

2SC5172

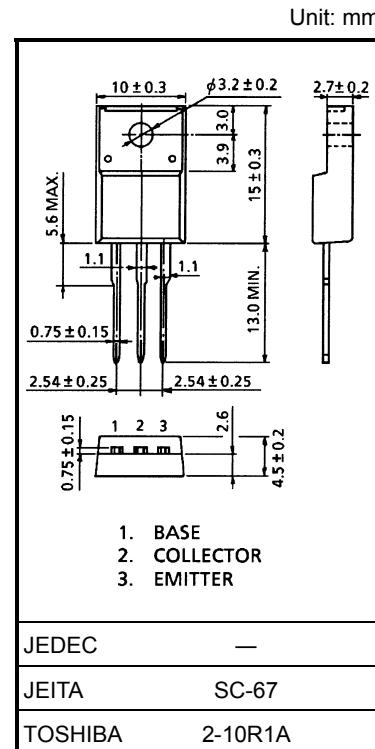
Switching Regulator and High-Voltage Switching Applications

High-Speed DC-DC Converter Applications

- 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 ($T_c = 25^\circ C$)

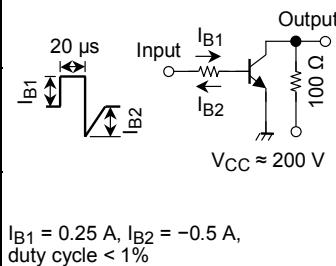
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	600	V
Collector-emitter voltage	V_{CEO}	400	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	DC	I_C	A
	Pulse	I_{CP}	
Base current	I_B	2	A
Collector power dissipation	$T_a = 25^\circ C$	P_C	2.0
	$T_c = 25^\circ C$		25
Junction temperature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

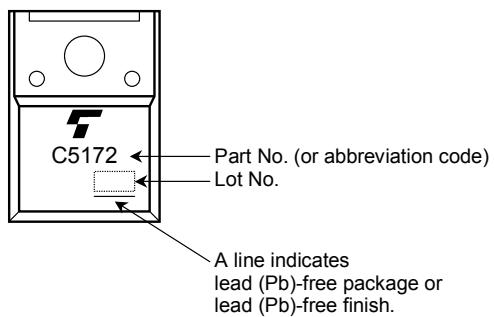


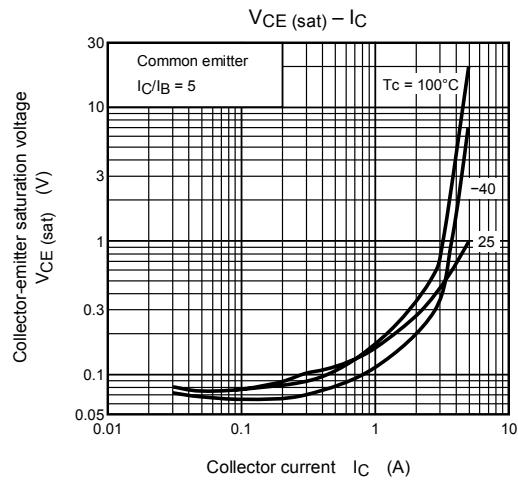
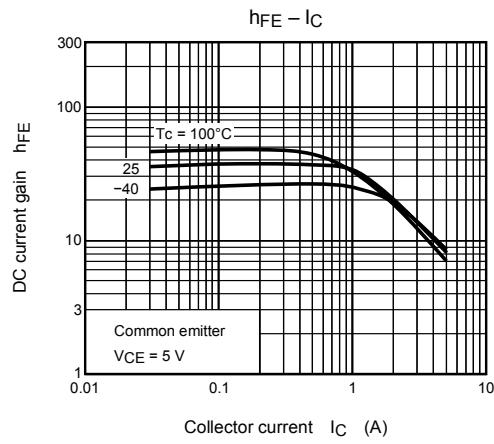
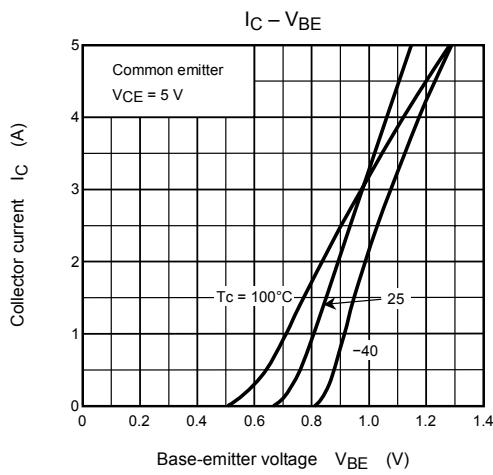
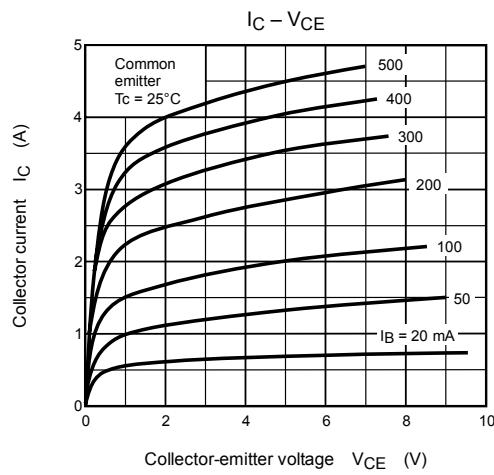
Weight: 1.7 g (typ.)

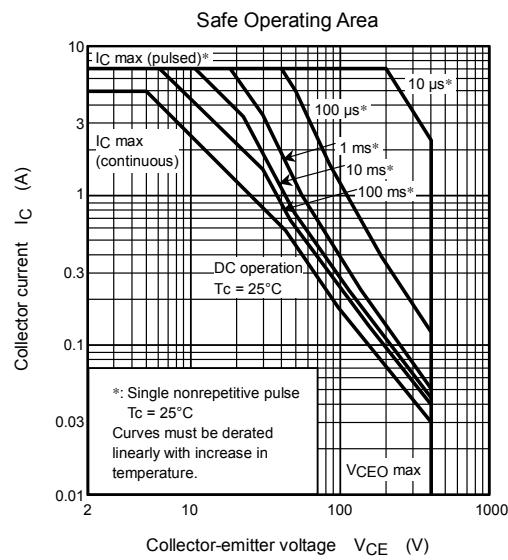
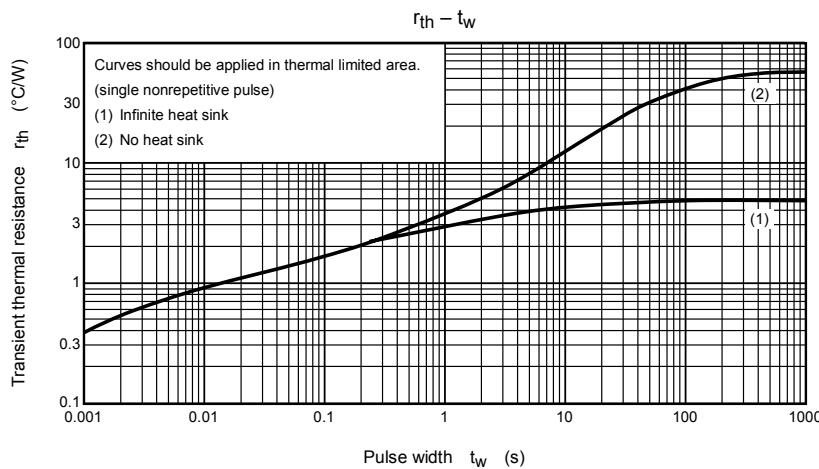
Electrical Characteristics ($T_c = 25^\circ C$)

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	$V_{CE (\text{sat})}$	$I_C = 2 A, I_B = 0.25 A$	—	—	1.0	V
Base-emitter saturation voltage	$V_{BE (\text{sat})}$	$I_C = 2 A, I_B = 0.25 A$	—	—	1.3	V
Switching time	Rise time	t_r	—	—	0.5	
	Storage time	t_{stg}	—	—	2.0	μs
	Fall time	t_f	—	—	0.3	



Marking





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