TOSHIBA Transistor Silicon NPN Triple Diffused Type

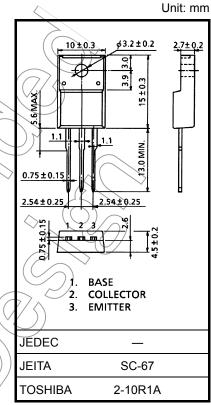
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Switching Regulator Applications High-Voltage Switching Applications DC-DC Converter Applications

- High-speed switching: $t_f = 0.3 \mu s \text{ (max) (IC} = 1.2 \text{ A)}$
- High collector breakdown voltage: $V_{CEO} = 400 \text{ V}$
- High DC current gain: $h_{FE} = 20$ (min) ($I_{C} = 0.3$ A)

Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit	
Collector-base voltage		V_{CBO}	600	У	
Collector-emitter voltage		V _{CEO}	400	> v	
Emitter-base voltage		V _{EBO}	Z	V	
Collector current	DC	IC	3	^	
	Pulse	I _{CP}	5		
Base current		I _B	1	A	
Collector power dissipation	Ta = 25°C	PC	2.0	w	
	Tc = 25°C		25		
Junction temperature		(T_j)	150	\/°C	
Storage temperature range		T _{stg}	-55 to 150	°C	



Weight: 1.7 g (typ.)

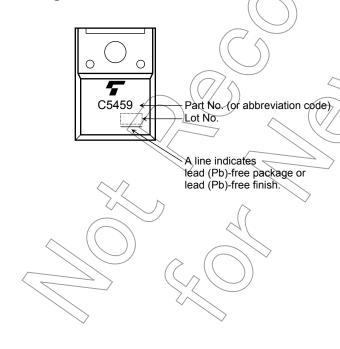
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

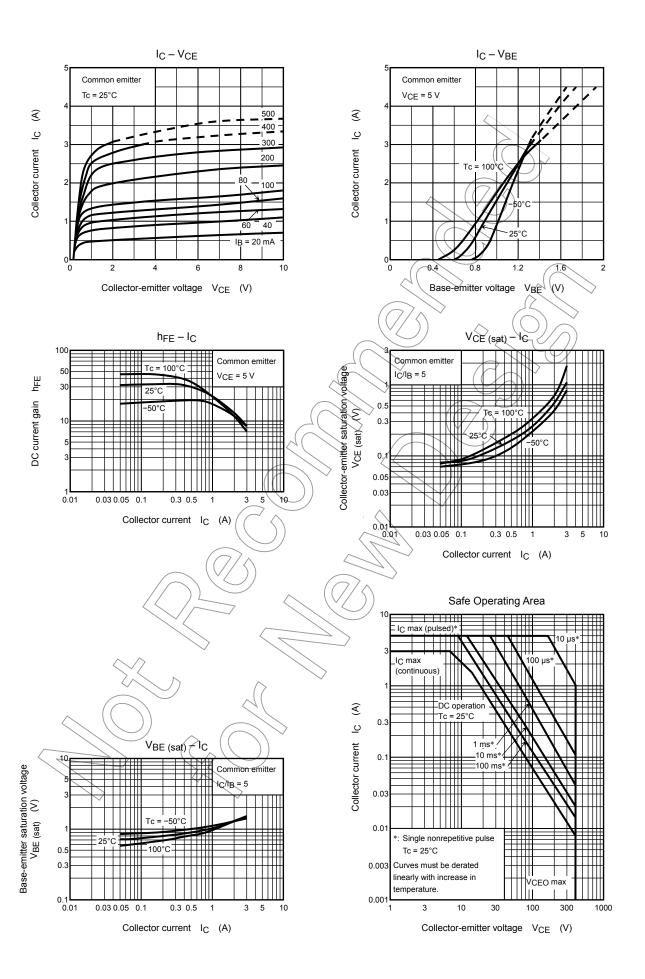
Electrical Characteristics (Tc = 25°C)

Char	acteristics	Symbol	Test Condition	Min	Тур.	Max	Unit	
Collector cut-off	current	I _{CBO}	V _{CB} = 480 V, I _E = 0	_	_	100	μΑ	
Emitter cut-off current		I _{EBO}	V _{EB} = 7 V, I _C = 0	_	_	10	μΑ	
Collector-base bi	reakdown 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 = 0.3 A	20	_	_		
Collector-emitter	saturation voltage	V _{CE} (sat)	I _C = 1.2 A, I _B = 0.15 A	$\bigcirc))$	_	1.0	V	
Base-emitter saturation voltage V _{BE} (sa		V _{BE} (sat)	I _C = 1.2 A, I _B = 0.15 A	_	_	1.3	V	
Ç	Turn-on time	t _r	$V_{CC} \approx 360$ $V_{$			0.5		
	Storage time	t _{stg}				2.0		
	Fall time	t _f			_	0.3		





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