TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SC5549

High-Speed Switching Application for Inverter Lighting System

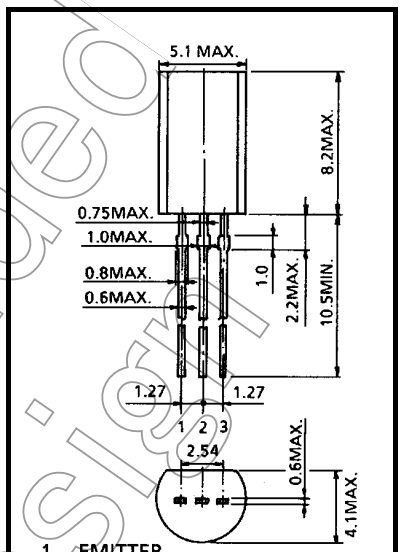
- Suitable for RCC circuits. (guaranteed small current h_{FE})
  : h_{FE} = 13 (min) (I_C = 1 mA)
- High speed: t_r = 0.5 μs (max), t_f = 0.3 μs (max) (I_C = 0.24 A)
- High breakdown voltage: V_{CEO} = 400 V

Absolute Maximum Ratings (Ta = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	400	V
Collector-emitter voltage		V_{CEO}	400	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	1	A
	Pulse	I_{CP}	2	
Base current		I_B	0.5	A
Collector power dissipation		P_C	0.9	W
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).

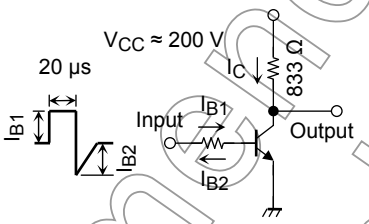
Unit: mm



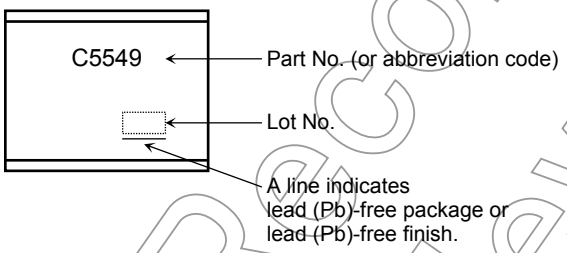
JEDEC	TO-92MOD
JEITA	SC-65
TOSHIBA	2-5J1A

Weight: 0.36 g (typ.)

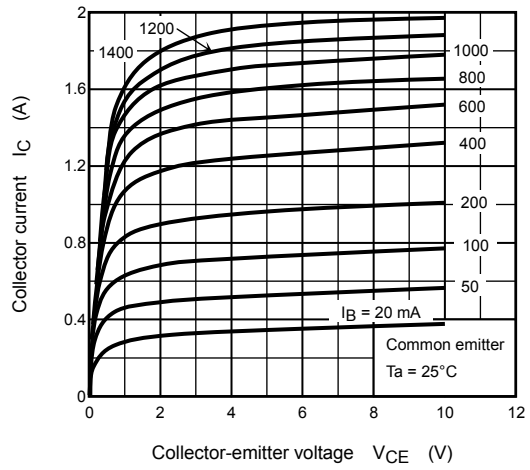
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	V_{CB} = 320 V, I_E = 0	—	—	100	μA
Emitter cut-off current		I_{EBO}	V_{EB} = 7 V, I_C = 0	—	—	100	μA
Collector-base breakdown voltage		$V_{(BR)\ CBO}$	I_C = 1 mA, I_E = 0	400	—	—	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 = 0.04 A	20	—	65	
Collector-emitter saturation voltage		$V_{CE\ (sat)}$	I_C = 0.2 A, I_B = 25 mA	—	—	1.0	V
Base-emitter saturation voltage		$V_{BE\ (sat)}$	I_C = 0.2 A, I_B = 25 mA	—	—	1.3	V
Switching time	Rise time	t_r		—	—	0.5	μs
	Storage time	t_{stg}		—	—	5.0	
	Fall time	t_f	I_{B1} = 0.03 A, I_{B2} = −0.06 A, Duty cycle ≤ 1%	—	—	0.3	

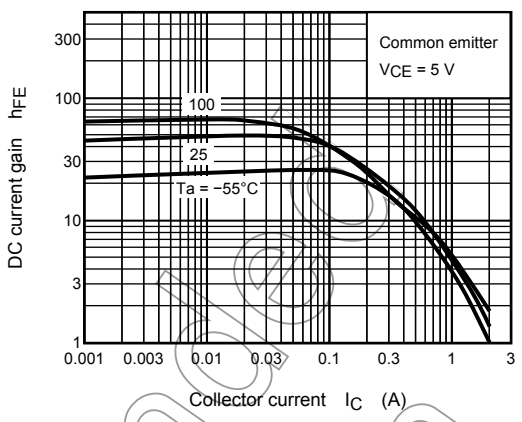
Marking



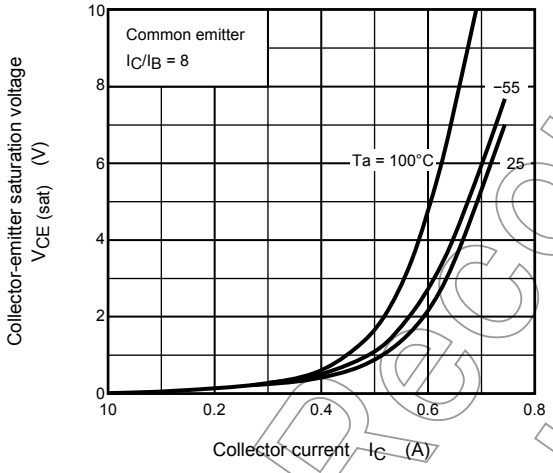
$I_C - V_{CE}$



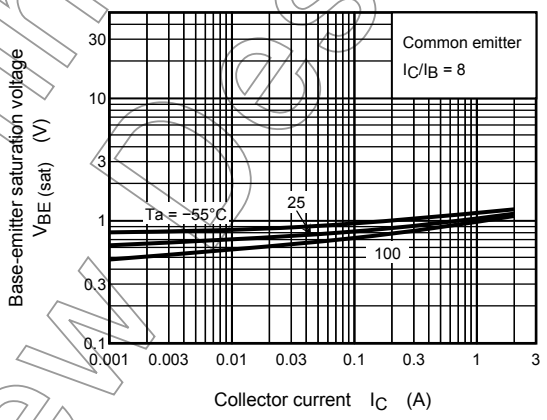
$h_{FE} - I_C$



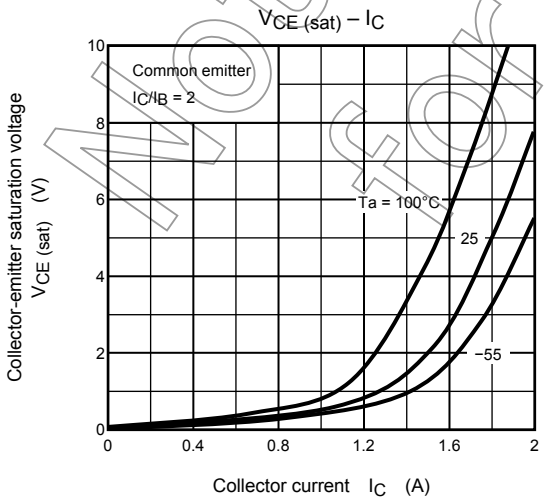
$V_{CE\ (sat)} - I_C$



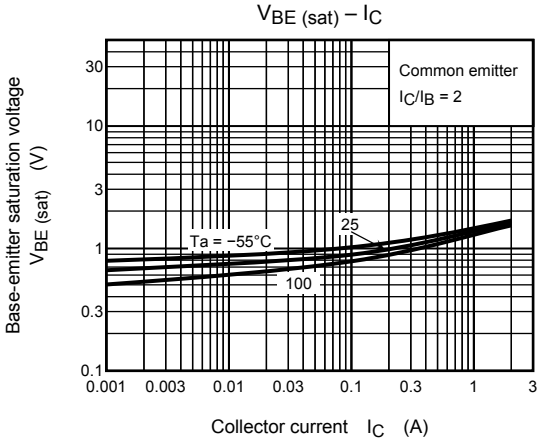
$V_{BE\ (sat)} - I_C$



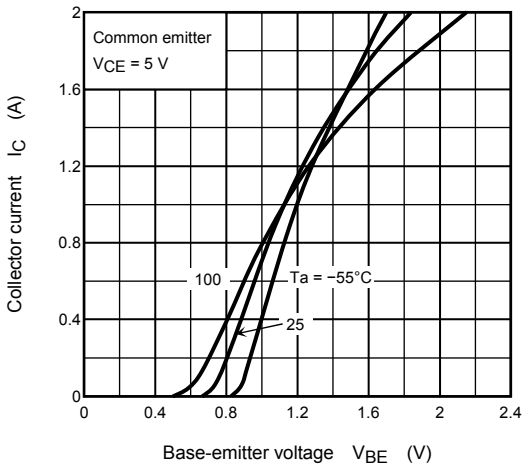
$V_{CE\ (sat)} - I_C$



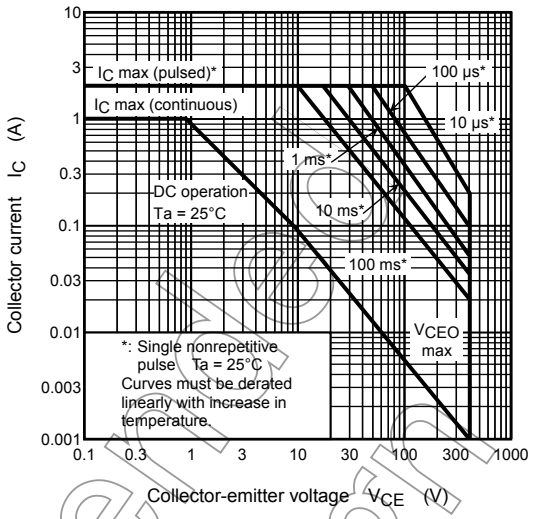
$V_{BE\ (sat)} - I_C$



$I_C - V_{BE}$



Safe Operating Area



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