

# 2SC5355

High Voltage Switching Applications

Switching Regulator Applications

DC-DC Converter Applications

- Excellent switching times:  $t_r = 0.5 \mu s$  (max),  $t_f = 0.3 \mu s$  (max)
- High collector breakdown voltage:  $V_{CEO} = 400 V$
- High DC current gain:  $h_{FE} = 20$  (min)

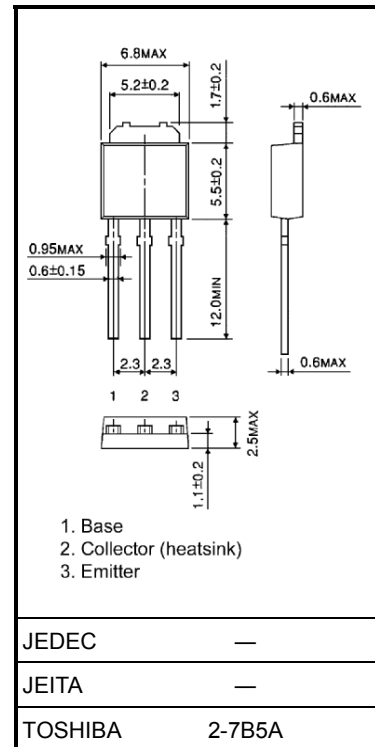
## Absolute Maximum Ratings ( $T_a = 25^\circ C$ )

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		$I_B$	1	A
Collector power dissipation	$T_a = 25^\circ C$	$P_C$	1.5	W
	$T_c = 25^\circ C$		25	
Junction temperature		$T_j$	150	$^\circ C$
Storage temperature range		$T_{stg}$	-55~150	$^\circ C$

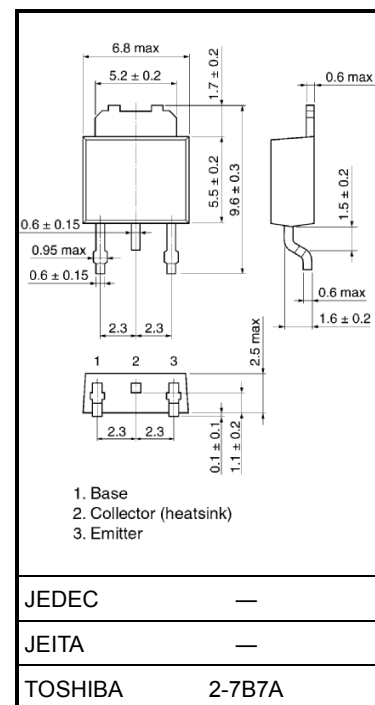
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

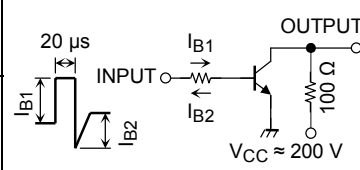


Weight: 0.36 g (typ.)

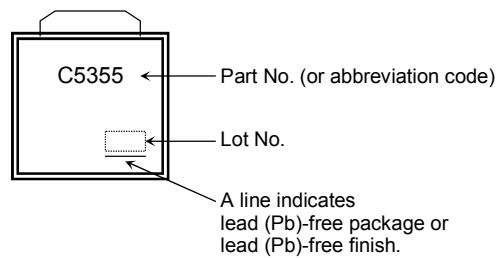


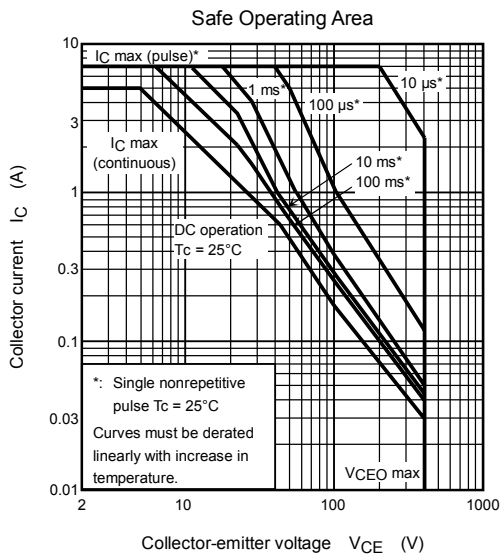
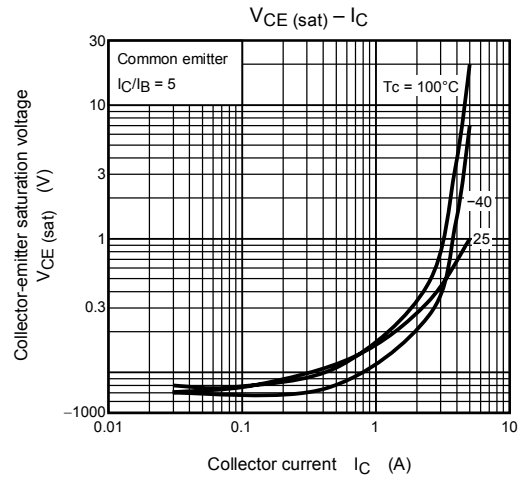
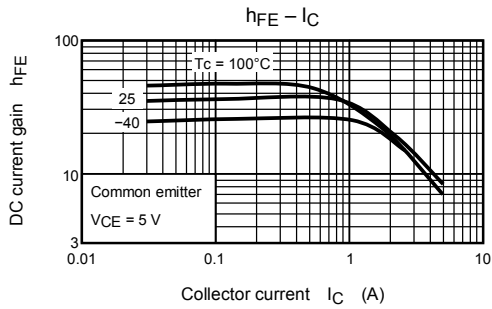
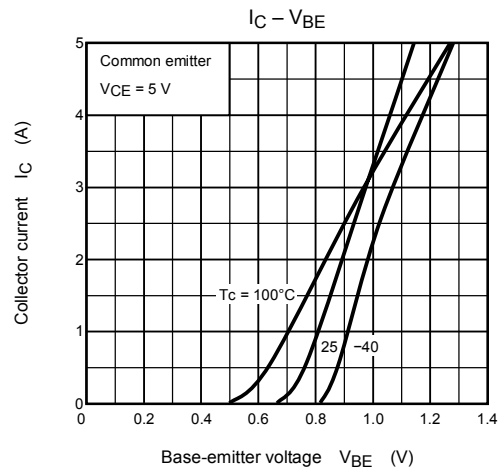
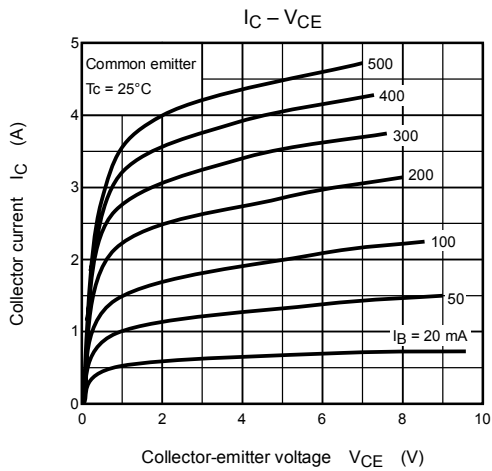
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## Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 480 \text{ V}, I_E = 0$	—	—	100	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	10	$\mu\text{A}$
Collector-base breakdown voltage		$V_{(BR) CBO}$	$I_C = 1 \text{ mA}, I_E = 0$	600	—	—	V
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10 \text{ mA}, I_B = 0$	400	—	—	V
DC current gain		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ mA}$	12	—	—	
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$	20	—	65	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 2 \text{ A}, I_B = 0.25 \text{ A}$	—	—	1.0	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 2 \text{ A}, I_B = 0.25 \text{ A}$	—	—	1.3	V
Switching time	Rise time	$t_r$	 <p><math>I_{B1} = 0.25 \text{ A}, I_{B2} = -0.5 \text{ A}</math> DUTY CYCLE <math>\leq 1\%</math></p>	—	—	0.5	$\mu\text{s}$
	Storage time	$t_{stg}$		—	—	2.0	
	Fall time	$t_f$		—	—	0.3	

## Marking





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