

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SD2353

Power Amplifier Applications

- High DC current gain:  $h_{FE} = 800$  to  $3200$
- Low collector saturation voltage:  $V_{CE(sat)} = 0.4\text{ V (typ.)}$

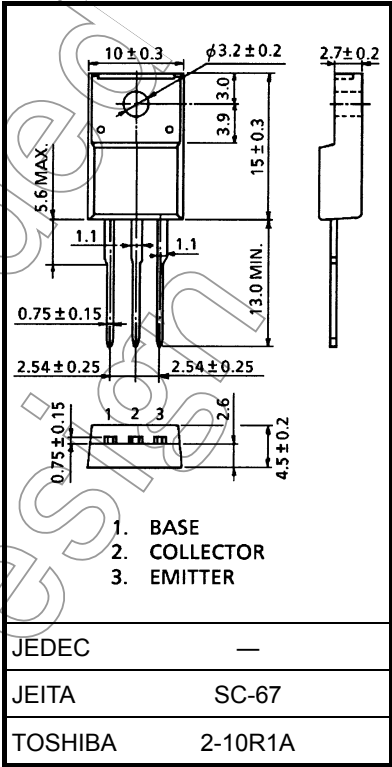
Absolute Maximum Ratings ( $T_c = 25^{\circ}\text{C}$ )

Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	60	V
Collector-emitter voltage		$V_{CEO}$	60	V
Emitter-base voltage		$V_{EBO}$	7	V
Collector current	DC	$I_C$	3	A
	Pulse	$I_{CP}$	6	
Base current		$I_B$	0.6	A
Collector power dissipation	$T_a = 25^{\circ}\text{C}$	$P_C$	2	W
	$T_c = 25^{\circ}\text{C}$		25	
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-55 to 150	$^{\circ}\text{C}$

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

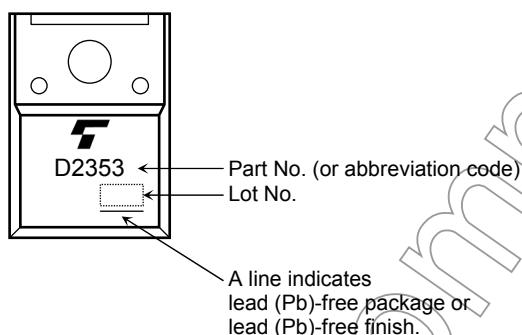


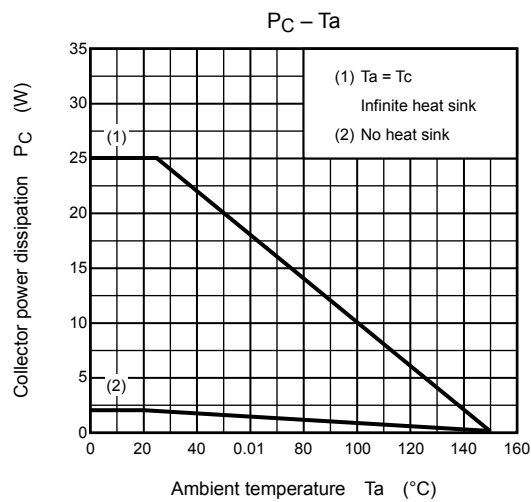
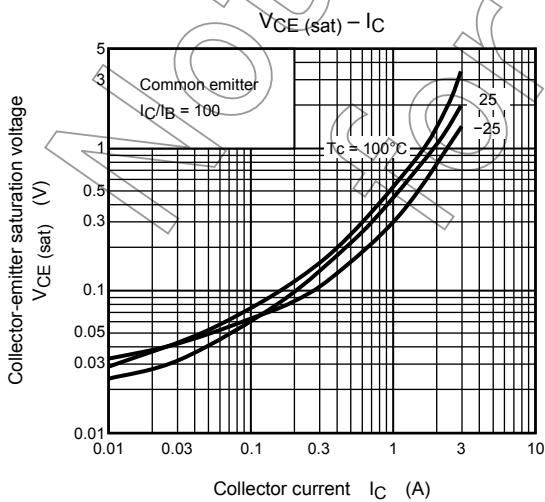
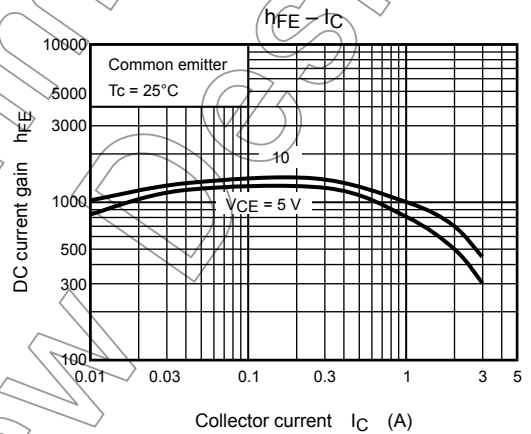
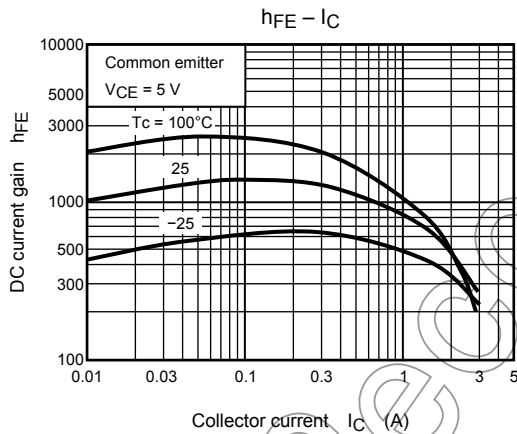
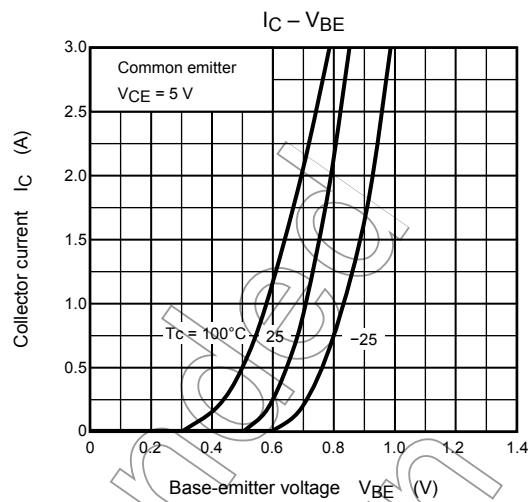
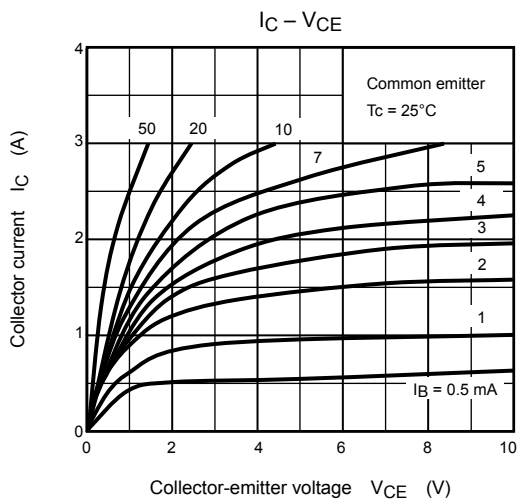
Weight: 1.7 g (typ.)

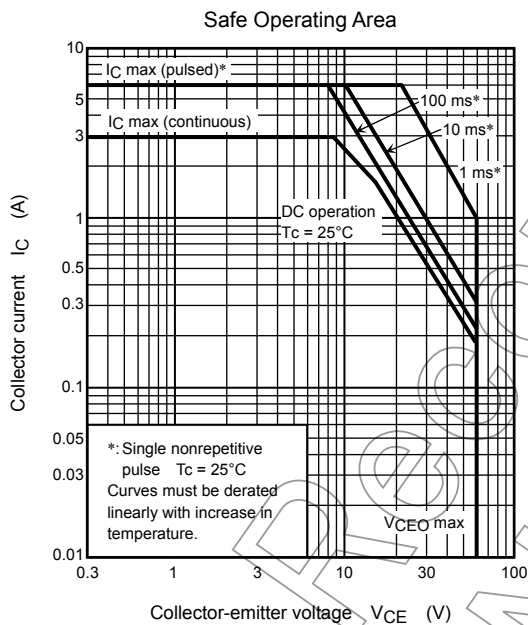
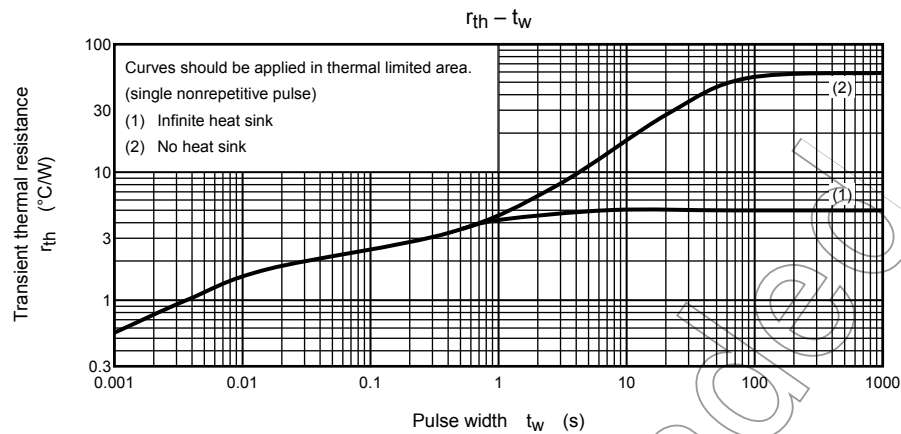
Electrical Characteristics (T<sub>c</sub> = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 60 V, I <sub>E</sub> = 0	—	—	100	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 6 V, I <sub>C</sub> = 0	—	—	100	μA
Collector-emitter breakdown voltage	V <sub>(BR)</sub> CEO	I <sub>C</sub> = 50 mA, I <sub>B</sub> = 0	60	—	—	V
DC current gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.2 A	800	—	3200	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1.5 A	350	—	—	
Collector-emitter saturation voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 1 A, I <sub>B</sub> = 10 mA	—	0.4	1.0	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.5 A	—	0.7	1.0	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.5 A	—	18	—	MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	42	—	pF

## Marking







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