

TOSHIBA Transistor Silicon NPN Triple Diffused Type (Darlington)

2SD2079

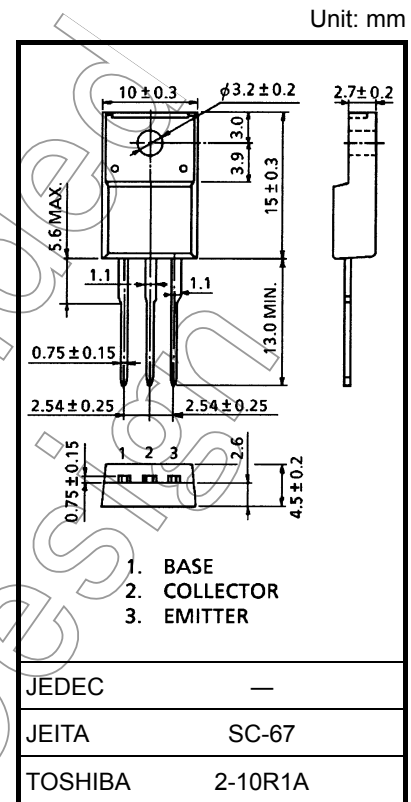
High-Power Switching Applications

Hammer Drive, Pulse Motor Drive Applications

- High DC current gain: $h_{FE}(1) = 2000$ (min)
- Low saturation voltage: $V_{CE(sat)}(1) = 1.5$ V (max)
- Complementary to 2SB1381.

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

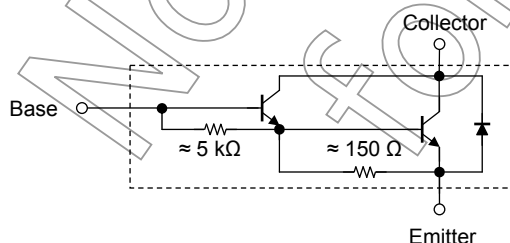
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	100	V
Collector-emitter voltage		V_{CEO}	100	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	5	A
	Pulse	I_{CP}	8	
Base current		I_B	0.5	A
Collector power dissipation	$T_a = 25^\circ\text{C}$	P_C	2.0	W
	$T_c = 25^\circ\text{C}$		30	
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$



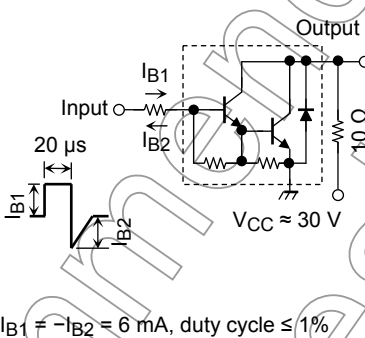
Weight: 1.7 g (typ.)

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.).

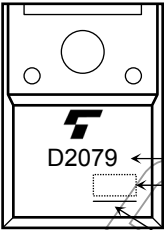
Equivalent Circuit



Electrical Characteristics (Tc = 25°C)

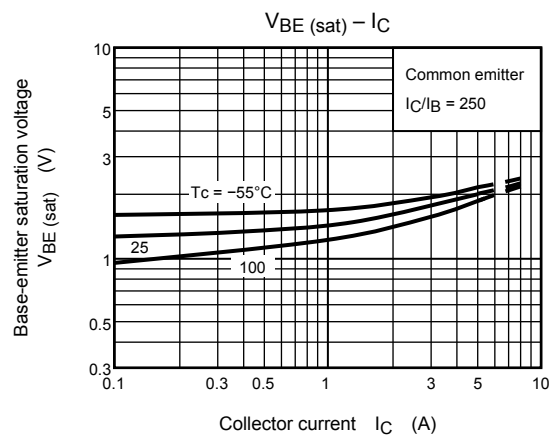
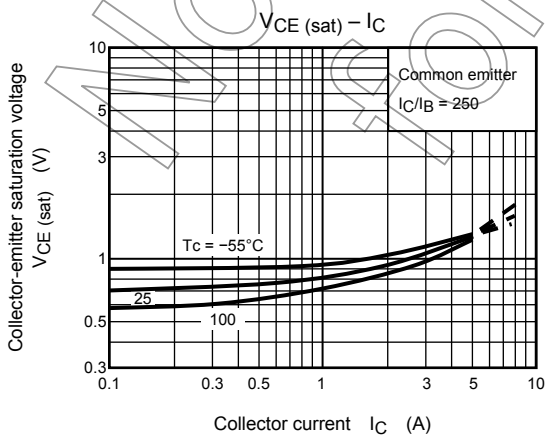
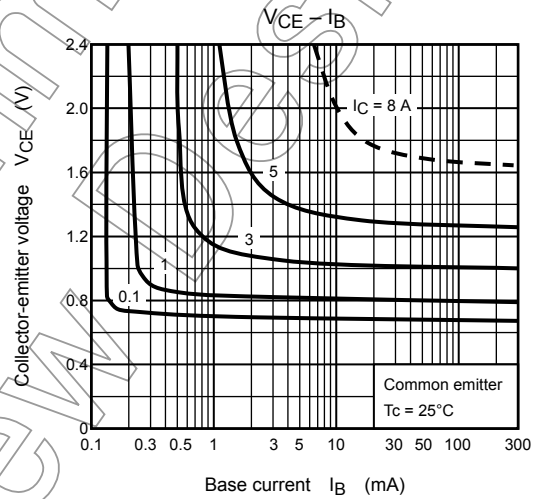
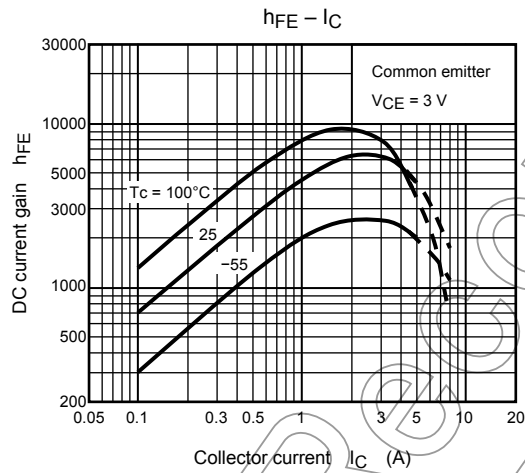
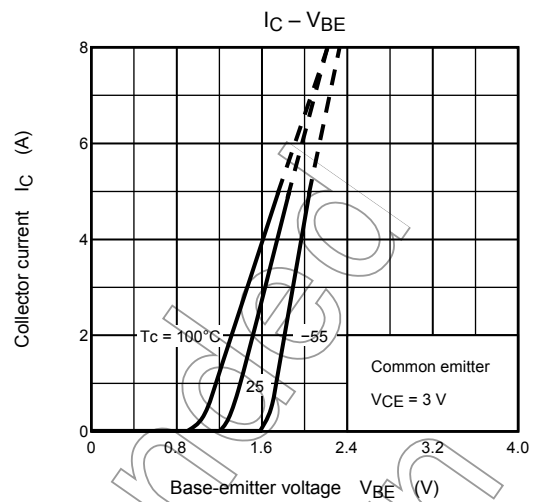
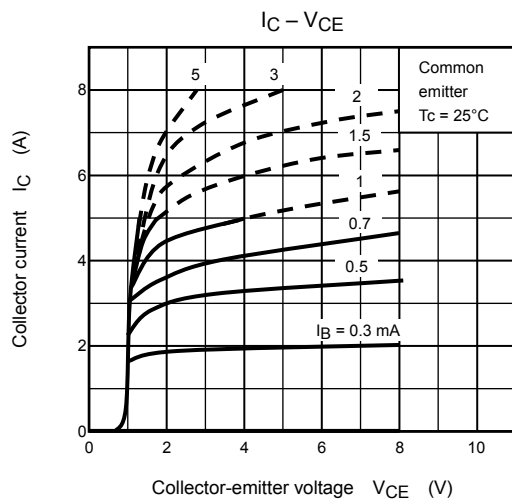
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 100 V, I _E = 0	—	—	100	μA
Emitter cut-off current		IEBO	V _{EB} = 6 V, I _C = 0	—	—	2.5	mA
Collector-emitter breakdown voltage		V (BR) CEO	I _C = 30 mA, I _B = 0	100	—	—	V
DC current gain		h _{FE} (1)	V _{CE} = 3 V, I _C = 3 A	2000	—	15000	
		h _{FE} (2)	V _{CE} = 3 V, I _C = 5 A	1000	—	—	
Collector-emitter saturation voltage		V _{CE} (sat) (1)	I _C = 3 A, I _B = 6 mA	—	1.1	1.5	V
		V _{CE} (sat) (2)	I _C = 5 A, I _B = 20 mA	—	1.3	2.5	
Base-emitter saturation voltage		V _{BE} (sat)	I _C = 3 A, I _B = 6 mA	—	1.7	2.5	V
Switching time	Turn-on time	t _{on}		—	1.0	—	μs
	Storage time	t _{stg}		—	4.0	—	
	Fall time	t _f		—	2.5	—	

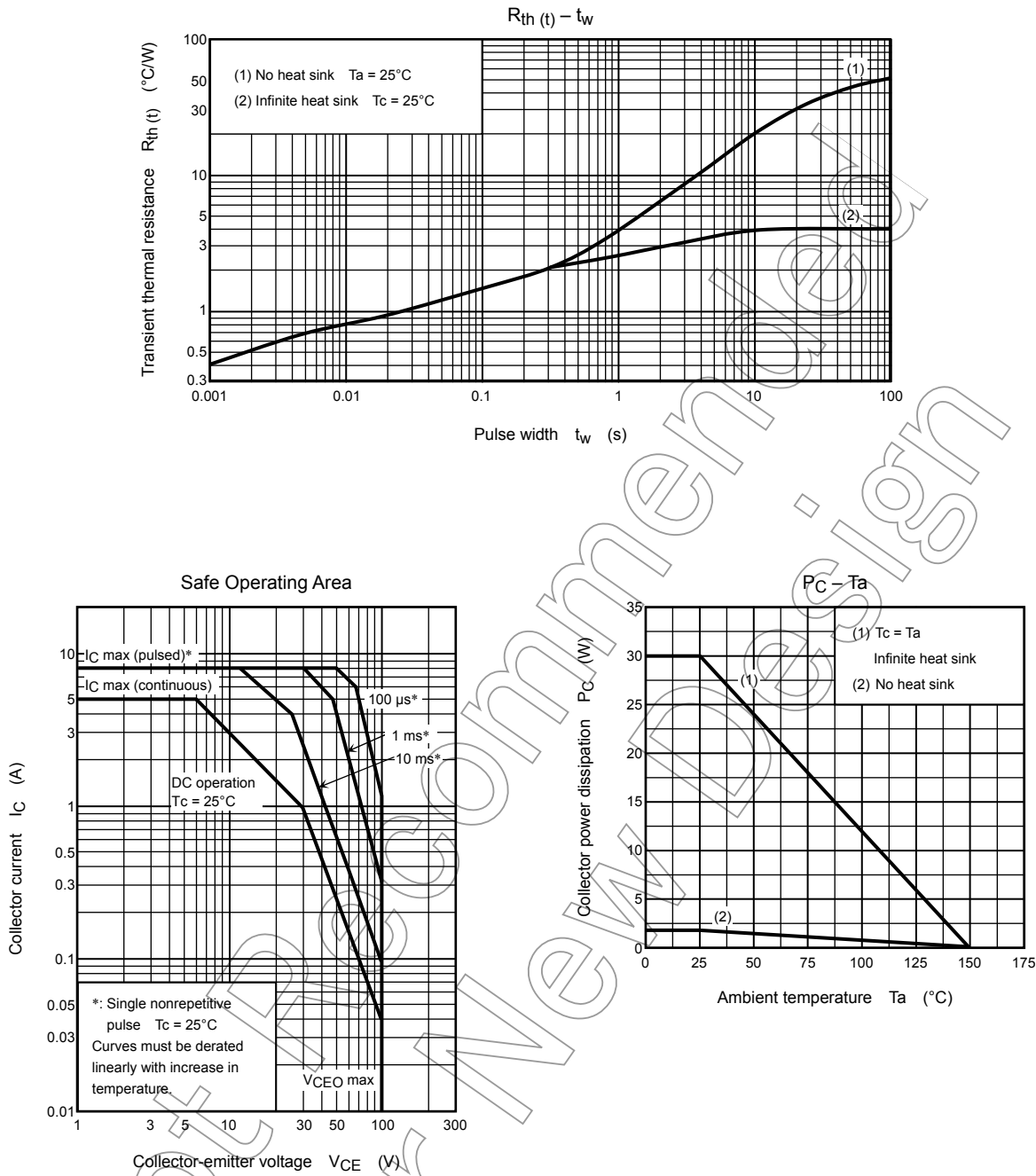
Marking



Part No. (or abbreviation code)
Lot No.

A line indicates
lead (Pb)-free package or
lead (Pb)-free finish.





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