

TOSHIBA Transistor    Silicon PNP Epitaxial Type (Darlington Power Transistor)

2SB1067

Micro-Motor Drive, Hammer Drive Applications  
Switching Applications  
Power Amplifier Applications

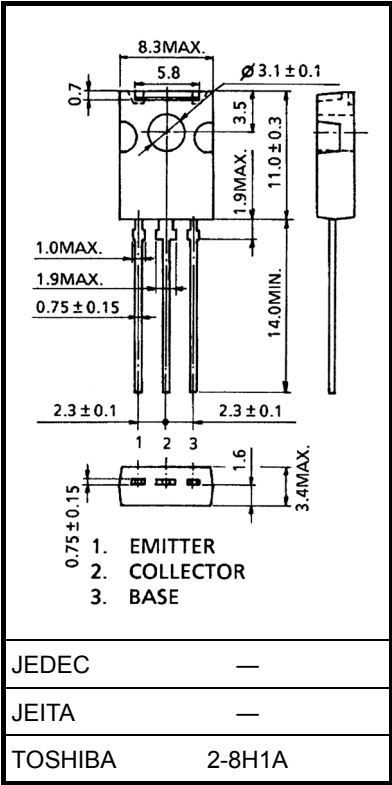
Industrial Applications

Unit: mm

- High DC current gain:  $h_{FE} = 2000$  (min) ( $V_{CE} = -2$  V,  $I_C = -1$  A)
- Low saturation voltage:  $V_{CE(sat)} = -1.5$  V (max)  
( $I_C = -1$  A,  $I_B = -1$  mA)

Absolute Maximum Ratings (Tc = 25°C)

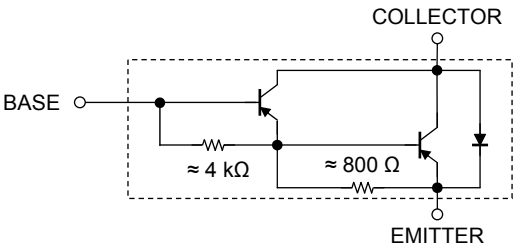
Characteristics		Symbol	Rating	Unit
Collector-base voltage		$V_{CBO}$	-80	V
Collector-emitter voltage		$V_{CEO}$	-80	V
Emitter-base voltage		$V_{EBO}$	-8	V
Collector current		$I_C$	-2	A
Base current		$I_B$	-0.5	A
Collector power dissipation	Ta = 25°C	$P_C$	1.5	W
	Tc = 25°C		10	
Junction temperature		$T_j$	150	°C
Storage temperature range		$T_{stg}$	-55 to 150	°C



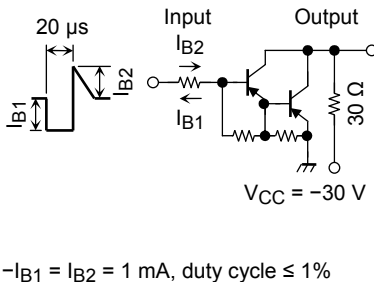
Weight: 0.82 g (typ.)

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).

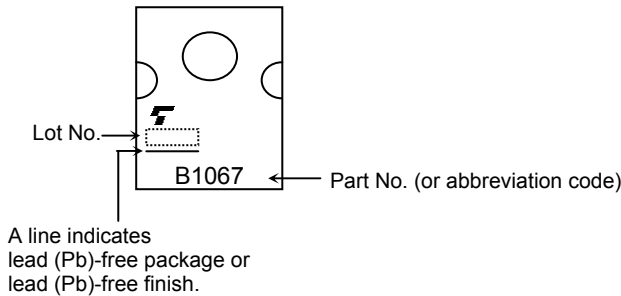
Equivalent Circuit

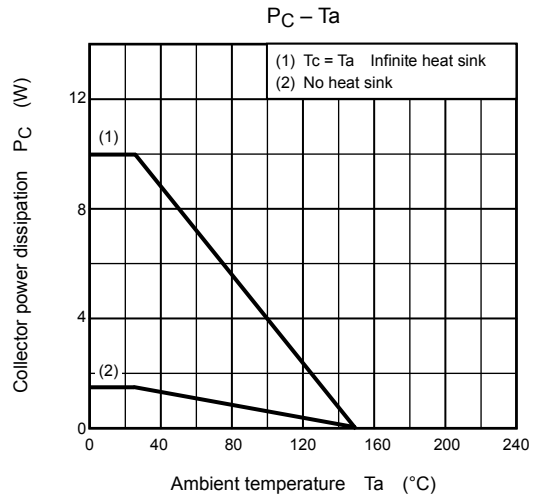
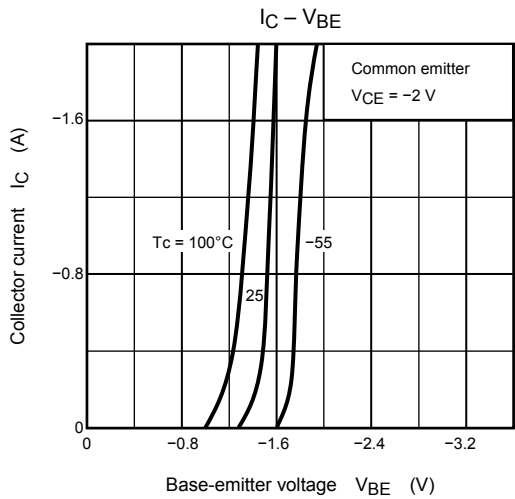
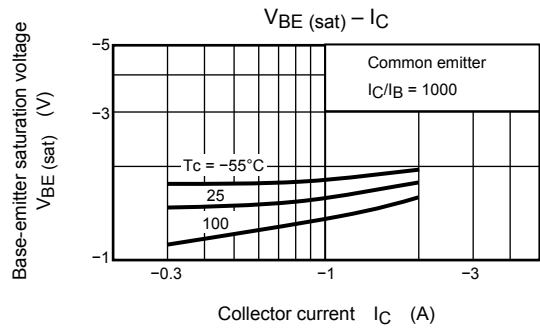
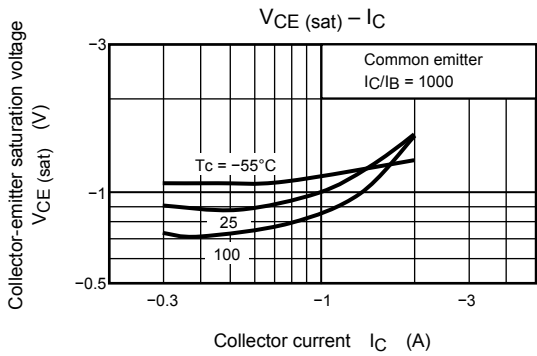
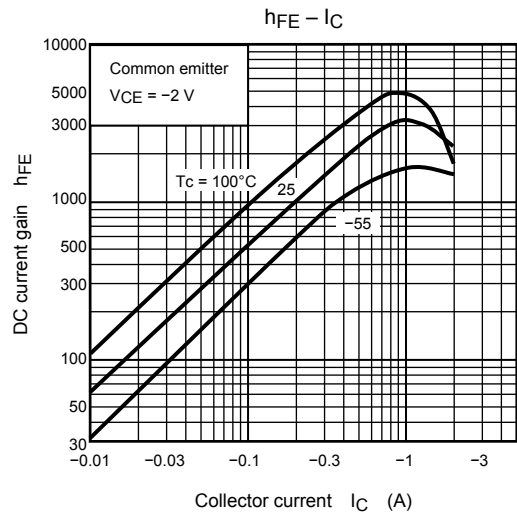
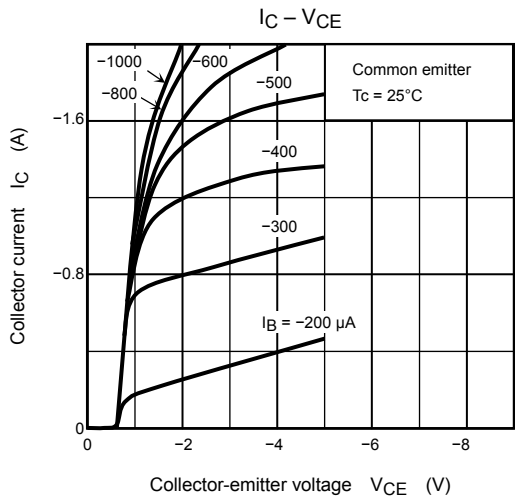


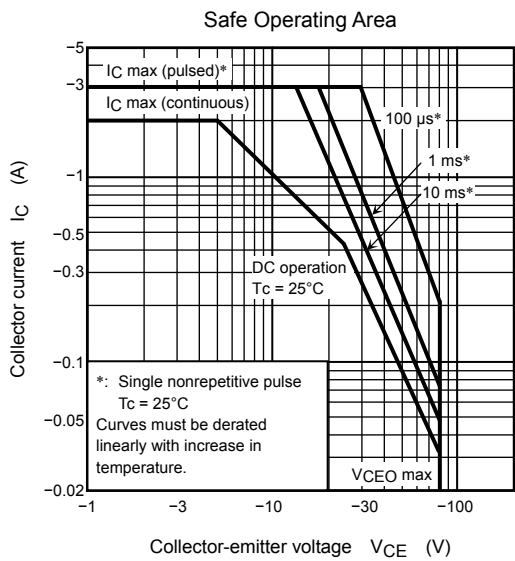
Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V <sub>CB</sub> = -80 V, I <sub>E</sub> = 0	—	—	-10	μA
Emitter cut-off current		IEBO	V <sub>EB</sub> = -8 V, I <sub>C</sub> = 0	—	—	-4	mA
Collector-emitter breakdown voltage		V <sub>(BR)</sub> CEO	I <sub>C</sub> = -10 mA, I <sub>B</sub> = 0	-80	—	—	V
DC current gain		h <sub>FE</sub>	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -1 A	2000	—	—	
Collector-emitter saturation voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = -1 A, I <sub>B</sub> = -1 mA	—	—	-1.5	V
Base-emitter saturation voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = -1 A, I <sub>B</sub> = -1 mA	—	—	-2.0	V
Transition frequency		f <sub>T</sub>	V <sub>CE</sub> = -2 V, I <sub>C</sub> = -0.5 A	—	50	—	MHz
Collector output capacitance		C <sub>ob</sub>	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz	—	30	—	pF
Switching time	Turn-on time	t <sub>on</sub>	 -I <sub>B1</sub> = I <sub>B2</sub> = 1 mA, duty cycle ≤ 1%	—	0.4	—	μs
	Storage time	t <sub>stg</sub>		—	2.0	—	
	Fall time	t <sub>f</sub>		—	0.4	—	

Marking







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