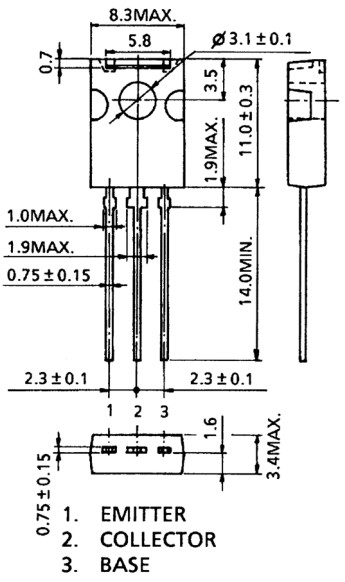
TOSHIBA Transistor Silicon PNP Epitaxial Type (Darlington Power Transistor)

2SB1067

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

Industrial Applications

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-8H1A

Weight: 0.82 g (typ.)

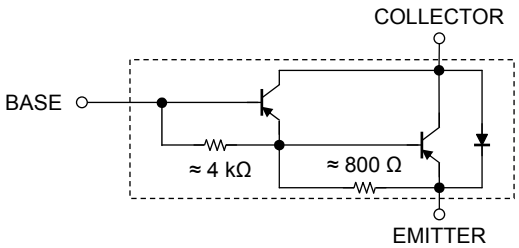
- High DC current gain: h_{FE} = 2000 (min) (V_{CE} = −2 V, I_C = −1 A)
- Low saturation voltage: $V_{CE\ (sat)}$ = −1.5 V (max)
  (I_C = −1 A, I_B = −1 mA)

Absolute Maximum Ratings (Tc = 25°C)

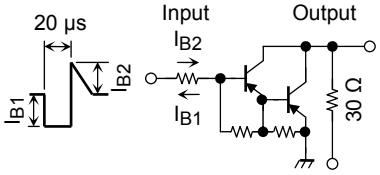
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	−80	V
Collector-emitter voltage		V_{CEO}	−80	V
Emitter-base voltage		V_{EBO}	−8	V
Collector current		I_C	−2	A
Base current		I_B	−0.5	A
Collector power dissipation	Ta = 25°C	P_C	1.5	W
	Tc = 25°C		10	
Junction temperature		T_j	150	°C
Storage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

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).

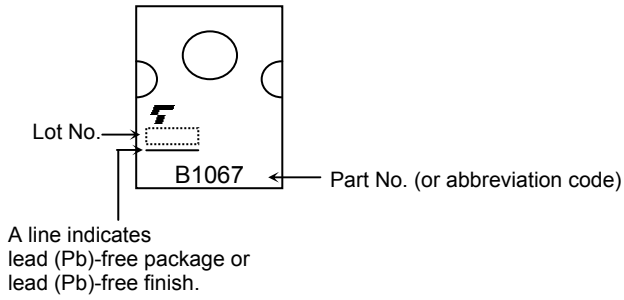
Equivalent Circuit



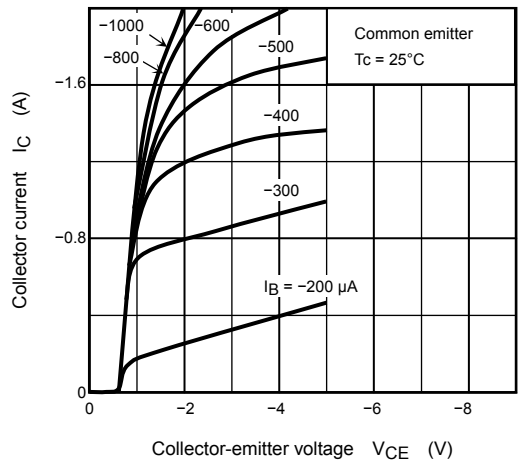
Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	V_{CB} = −80 V, I_E = 0	—	—	−10	μA
Emitter cut-off current		I_{EBO}	V_{EB} = −8 V, I_C = 0	—	—	−4	mA
Collector-emitte breakdown voltage		$V_{(BR)\ CEO}$	I_C = −10 mA, I_B = 0	−80	—	—	V
DC current gain		h_{FE}	V_{CE} = −2 V, I_C = −1 A	2000	—	—	
Collector-emitter saturation voltage		$V_{CE\ (sat)}$	I_C = −1 A, I_B = −1 mA	—	—	−1.5	V
Base-emitter saturation voltage		$V_{BE\ (sat)}$	I_C = −1 A, I_B = −1 mA	—	—	−2.0	V
Transition frequency		f_T	V_{CE} = −2 V, I_C = −0.5 A	—	50	—	MHz
Collector output capacitance		C_{ob}	V_{CB} = −10 V, I_E = 0, f = 1 MHz	—	30	—	pF
Switching time	Turn-on time	t_{on}		—	0.4	—	μs
	Storage time	t_{stg}		—	2.0	—	
	Fall time	t_f		—	0.4	—	
			$-I_{B1} = I_{B2}$ = 1 mA, duty cycle ≤ 1%				

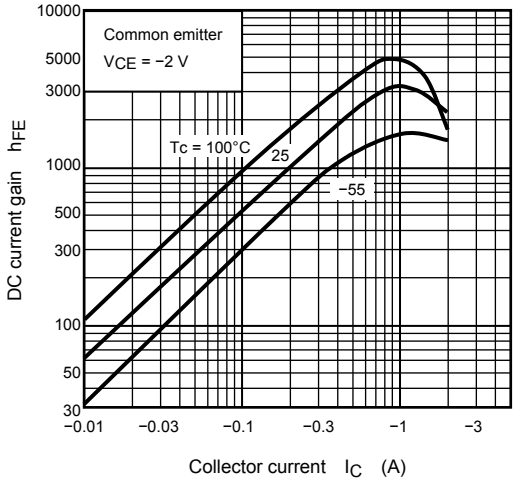
Marking



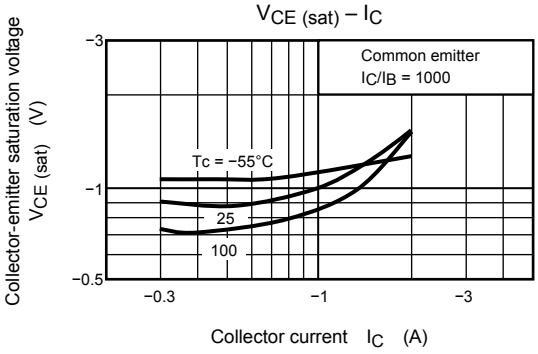
$I_C - V_{CE}$



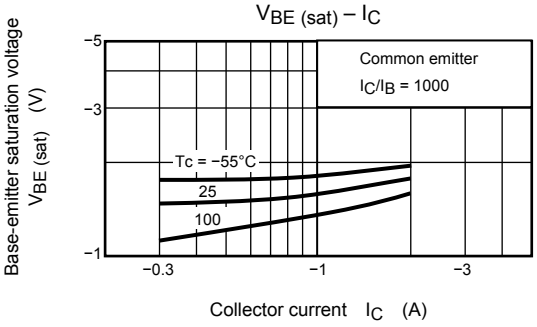
$h_{FE} - I_C$



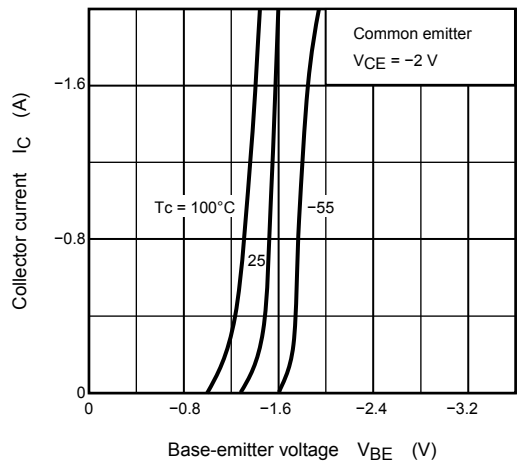
$V_{CE\ (sat)} - I_C$



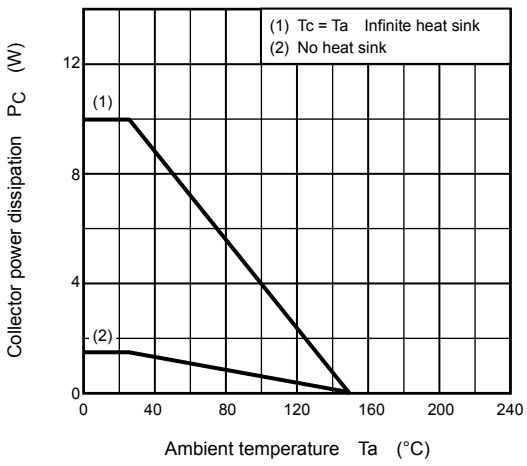
$V_{BE\ (sat)} - I_C$



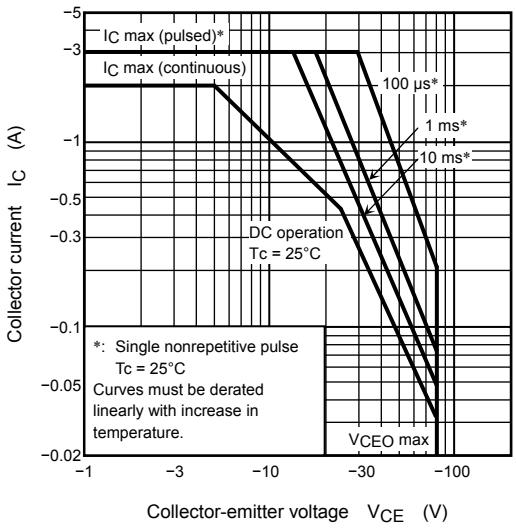
$I_C - V_{BE}$



$P_C - Ta$



Safe Operating Area



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