TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington Power Transistor)

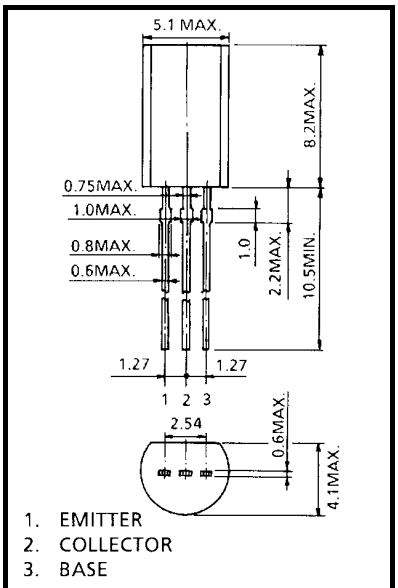
2SD2536

Switching Applications

Micro Motor Drive, Hammer Drive Applications

- High DC current gain: h_{FE} = 2000 (min) (V_{CE} = 2 V, I_C = 1 A)
- Low saturation voltage: $V_{CE\ (sat)}$ = 1.2 V (max) (I_C = 0.7 A, V_{BH} = 4.2 V)
- Zener diode included between collector and base

Unit: mm



JEDEC	TO-92MOD
JEITA	—
TOSHIBA	2-5J1A

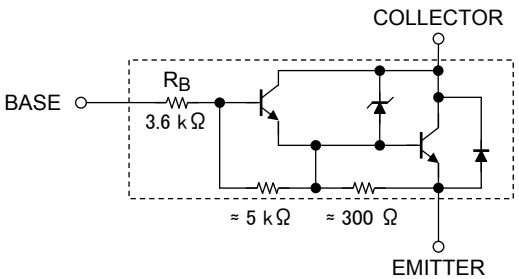
Weight: 0.36 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

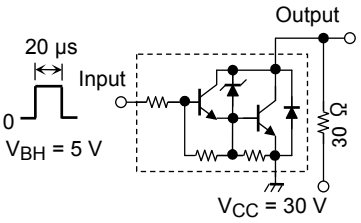
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	85	V
Collector-emitter voltage	V_{CEO}	100 ± 15	V
Emitter-base voltage	V_{EBO}	6	V
Bias voltage	V_B	20	V
Collector current	I_C	2	A
Base current	I_B	0.5	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Note1: 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).

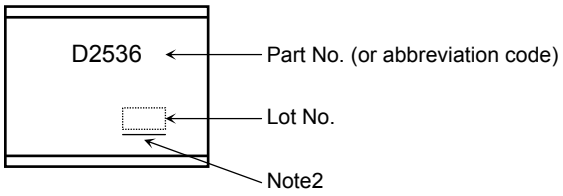
Equivalent Circuit



Electrical Characteristics (Ta = 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} = 6 V, I_C = 0	0.3	—	1.5	mA
Collector-emitter breakdown voltage		$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	85	100	115	V
Base resistance		R_B	—	2.5	3.6	4.7	kΩ
DC current gain		h_{FE}	V_{CE} = 2 V, I_C = 1 A	2000	—	—	
Collector-emitter saturation voltage		$V_{CE\ (sat)\ (1)}$	I_C = 0.7 A, V_{BH} = 4.2 V	—	—	1.2	V
		$V_{CE\ (sat)\ (2)}$	I_C = 1 A, V_{BH} = 4.2 V	—	—	1.5	
Input threshold voltage		V_{BL}	V_{CE} = 50 V, I_C = 100 μA	—	—	0.7	V
Collector output capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	20	—	pF
Unclamped inductive load energy		$E_{S/B}$	L = 10 mH, I_C = 1 A, V_{BH} = 10 V	5	—	—	mJ
Switching time	Turn-on time	t_r	 Duty cycle ≤ 1%	—	0.3	—	μs
	Storage time	t_{stg}		—	4.0	—	
	Fall time	t_f		—	0.6	—	

Marking



Note2: A line under a Lot No. identifies the indication of product Labels.
Not underlined: [[Pb]]/INCLUDES > MCV
Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

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