

TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington Power Transistor)

2SD2536

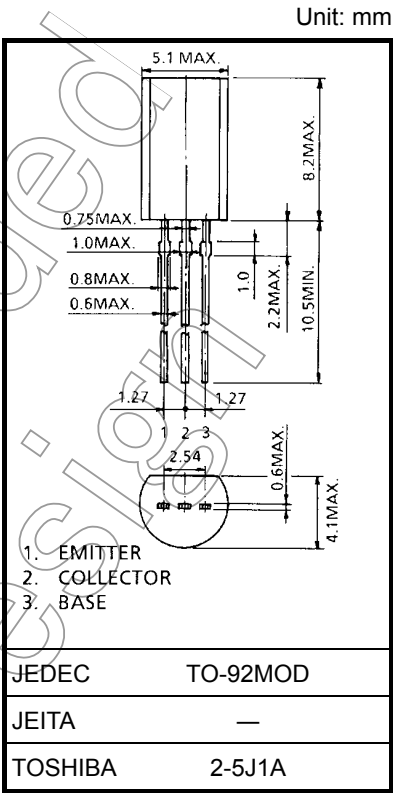
Switching Applications

Micro Motor Drive, Hammer Drive Applications

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

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

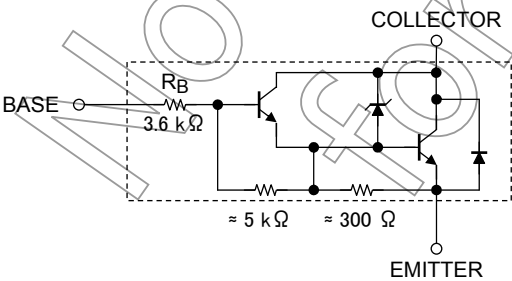
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	85	V
Collector-emitter voltage	V_{CEO}	100 ± 15	V
Emitter-base voltage	V_{EBO}	6	V
Bias voltage	V_B	20	V
Collector current	I_C	2	A
Base current	I_B	0.5	A
Collector power dissipation	P_C	0.9	W
Junction temperature	T_j	150	$^\circ\text{C}$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



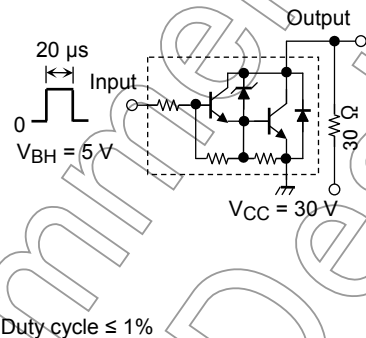
Weight: 0.36 g (typ.)

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).

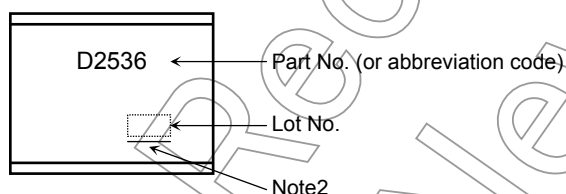
Equivalent Circuit



Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 80\text{ V}, I_E = 0$	—	—	10	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$	0.3	—	1.5	mA
Collector-emitter breakdown voltage		$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	85	100	115	V
Base resistance		R_B	—	2.5	3.6	4.7	$\text{k}\Omega$
DC current gain		h_{FE}	$V_{CE} = 2\text{ V}, I_C = 1\text{ A}$	2000	—	—	
Collector-emitter saturation voltage		$V_{CE(sat) (1)}$	$I_C = 0.7\text{ A}, V_{BH} = 4.2\text{ V}$	—	—	1.2	V
		$V_{CE(sat) (2)}$	$I_C = 1\text{ A}, V_{BH} = 4.2\text{ V}$	—	—	1.5	
Input threshold voltage		V_{BL}	$V_{CE} = 50\text{ V}, I_C = 100\text{ }\mu\text{A}$	—	—	0.7	V
Collector output capacitance		C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	20	—	pF
Unclamped inductive load energy		$E_{S/B}$	$L = 10\text{ mH}, I_C = 1\text{ A}, V_{BH} = 10\text{ V}$	5	—	—	mJ
Switching time	Turn-on time	t_r		—	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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