

TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington power transistor)

2SD2536

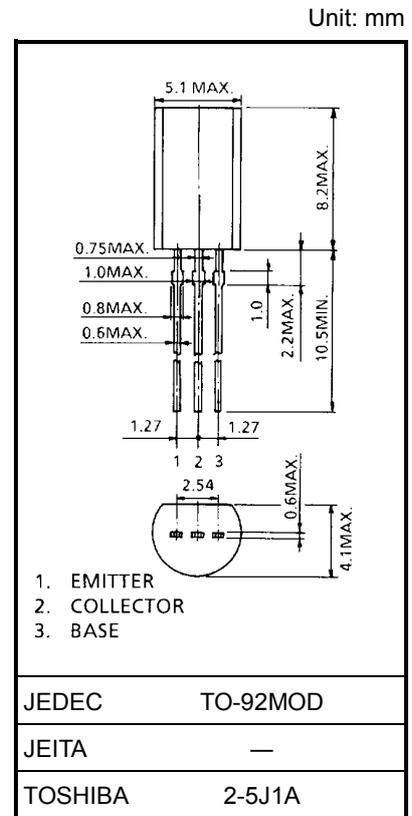
Switching Applications

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.

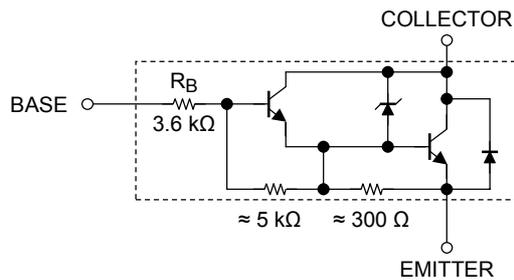
Maximum Ratings ($T_a = 25^\circ\text{C}$)

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
Collector power dissipation	P_C	0.9	W
Base current	I_B	0.5	A
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 150	$^\circ\text{C}$



Weight: 0.36 g (typ.)

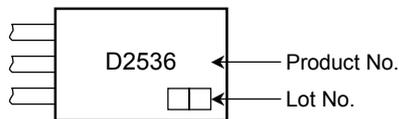
Equivalent Circuit



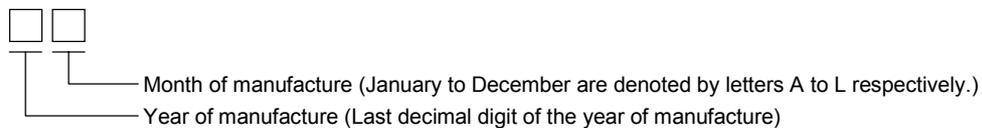
Electrical Characteristics (Ta = 25°C)

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}	$V_{CE} = 50\text{ V}, I_C = 100\ \mu\text{A}$	—	—	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



Explanation of Lot No.



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