

Preliminary TOSHIBA Transistor Silicon NPN Epitaxial Type (Darlington power transistor)

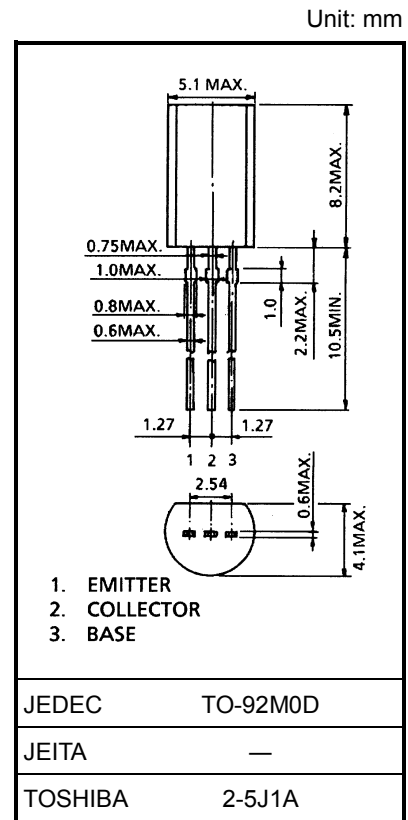
2SD2248

Hammer Drive, Pulse Motor Drive Applications
For Inductive Load Drive

- 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)
- Built-in zener diode between collector and base

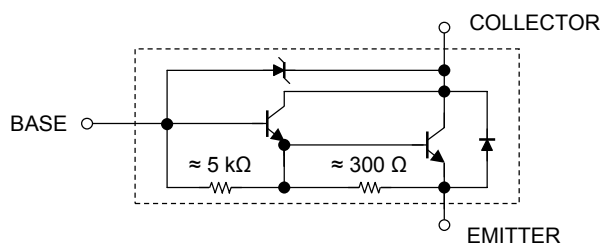
Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	80 ± 10	V
Collector-emitter voltage		V_{CEO}	80 ± 10	V
Emitter-base voltage		V_{EBO}	8	V
Collector current	DC	I_C	± 2	A
	Pulse	I_{CP}	± 3	
Base current		I_B	0.5	A
Collector power dissipation ($T_a = 25^\circ\text{C}$)		P_C	0.9	W
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55 to 150	$^\circ\text{C}$

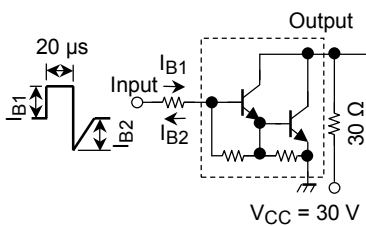


Weight: 0.36 g (typ.)

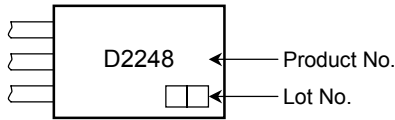
Equivalent Circuit



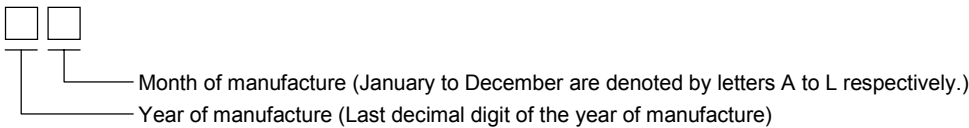
Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 60 V, I _E = 0	—	—	10	μA
Emitter cut-off current		IEBO	V _{EB} = 8 V, I _C = 0	0.8	—	4.0	mA
Collector-base breakdown voltage		V _(BR) CBO	I _C = 100 μA, I _E = 0	70	80	90	V
Collector-emitter breakdown voltage		V _(BR) CEO	I _C = 10 mA, I _B = 0	70	80	90	V
DC current gain		h _{FE} (1)	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
Emitter-collector forward voltage		V _{ECF}	I _E = 1 A, I _B = 0	—	1.2	2.0	V
Transition frequency		f _T	V _{CE} = 2 V, I _C = 0.5 A	—	100	—	MHz
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 = 1.2 A, I _B = ±50 mA	7.2	—	—	mJ
Switching time	Turn-on time	t _{on}	 I _{B1} = -I _{B2} = 1 mA, duty cycle ≤ 1%	—	0.2	—	μs
	Storage time	t _{stg}		—	4.0	—	
	Fall time	t _f		—	0.6	—	

Marking



Explanation of Lot No.



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