

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (DARLINGTON)

2SD2129

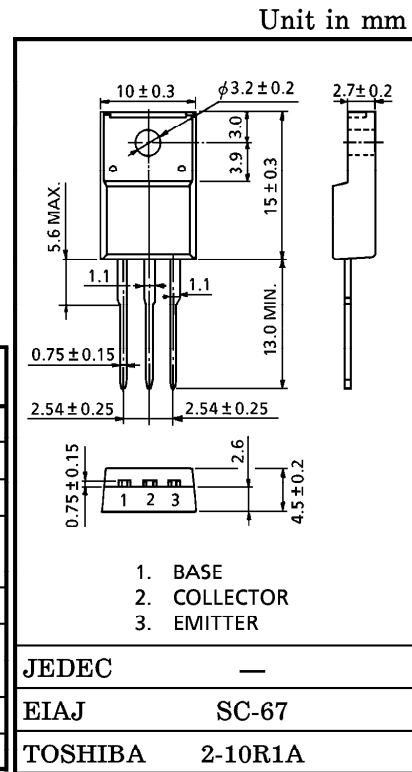
HIGH POWER SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

- High DC Current Gain : $h_{FE} = 2000$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = 1.5V$ (Max.)

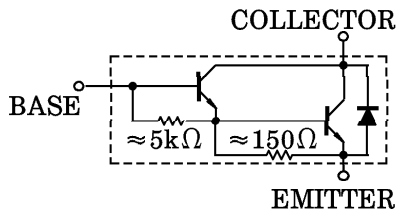
MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	3	A
	Pulse	I_{CP}	5	
Base Current		I_B	0.5	A
Collector Power Dissipation	$T_a = 25^\circ C$	P_C	2.0	W
	$T_c = 25^\circ C$		20	
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 ~ 150	$^\circ C$



Weight : 1.7g (Typ.)

EQUIVALENT CIRCUIT



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = 100V, I _E = 0	—	—	100	μA
Emitter Cut-off Current		I _{EBO}	V _{EB} = 6V, I _C = 0	—	—	2.5	mA
Collector-Emitter Breakdown Voltage		V _{(BR) CEO}	I _C = 30mA, I _B = 0	100	—	—	V
DC Current Gain		h _{FE} (1)	V _{CE} = 3V, I _C = 1.5A	2000	—	15000	
		h _{FE} (2)	V _{CE} = 3V, I _C = 3A	1000	—	—	
Collector-Emitter Saturation Voltage		V _{CE (sat)} (1)	I _C = 1.5A, I _B = 3mA	—	—	1.5	V
		V _{CE (sat)} (2)	I _C = 3A, I _B = 12mA	—	—	2.0	
Base-Emitter Saturation Voltage		V _{BE (sat)}	I _C = 1.5A, I _B = 3mA	—	—	2.0	V
Switching Time	Turn-on Time	t _{on}	<p>IN-PUT I_{B1} $20\mu s$ I_{B1} I_{B2} OUTPUT 20Ω $V_{CC} \cong 30V$</p>	—	1.0	—	μs
	Storage Time	t _{stg}		—	5.0	—	
	Fall Time	t _f		$I_{B1} = -I_{B2} = 3mA$, DUTY CYCLE ≤ 1%	—	2.0	

