

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE (DARLINGTON POWER)

2SB1020A

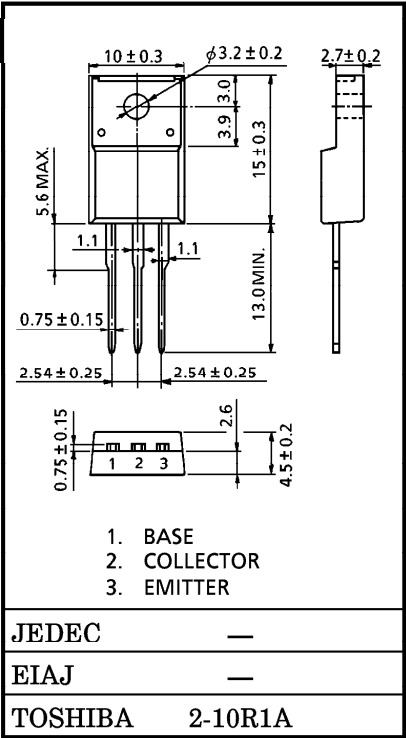
HIGH POWER SWITCHING APPLICATIONS
HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

- High DC Current Gain
: $h_{FE}=2000$ (Min.) (at $V_{CE}=-3V$, $I_C=-3A$)
- Low Saturation Voltage
: $V_{CE(sat)}=-1.5V$ (Max.) (at $I_C=-3A$)
- Complementary to 2SD1415A

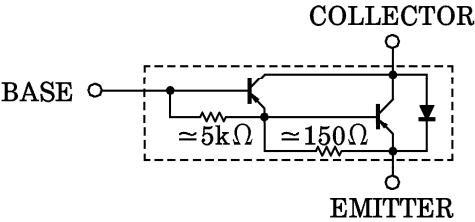
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-100	V
Collector-Emitter Voltage		V_{CEO}	-100	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current	DC	I_C	-7	A
	Pulse	I_{CP}	-10	
Base Current		I_B	-0.7	A
Collector Power Dissipation	Ta = 25°C	P_C	2.0	W
	Tc = 25°C		30	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55~150	°C

INDUSTRIAL APPLICATIONS
Unit in mm



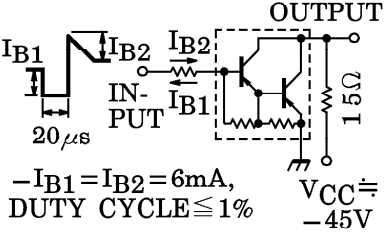
EQUIVALENT CIRCUIT



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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		IEBO	V _{EB} = -5V, I _C = 0	—	—	-4.0	mA
Collector-Emitter Breakdown Voltage		V (BR) CEO	I _C = -50mA, I _B = 0	-100	—	—	V
DC Current Gain		h _{FE} (1)	V _{CE} = -3V, I _C = -3A	2000	—	15000	
		h _{FE} (2)	V _{CE} = -3V, I _C = -7A	1000	—	—	
Collector-Emitter Saturation Voltage		V _{CE (sat)} (1)	I _C = -3A, I _B = -6mA	—	-0.95	-1.5	V
		V _{CE (sat)} (2)	I _C = -7A, I _B = -14mA	—	-1.3	-2.0	
Base-Emitter Saturation Voltage		V _{BE (sat)}	I _C = -3A, I _B = -6mA	—	-1.55	-2.5	V
Switching Time	Turn-on Time	t _{on}	 -I _{B1} = I _{B2} = 6mA, DUTY CYCLE ≤ 1%	—	0.8	—	μs
	Storage Time	t _{stg}		—	2.0	—	
	Fall Time	t _f		—	2.5	—	

