

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1451A

HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS

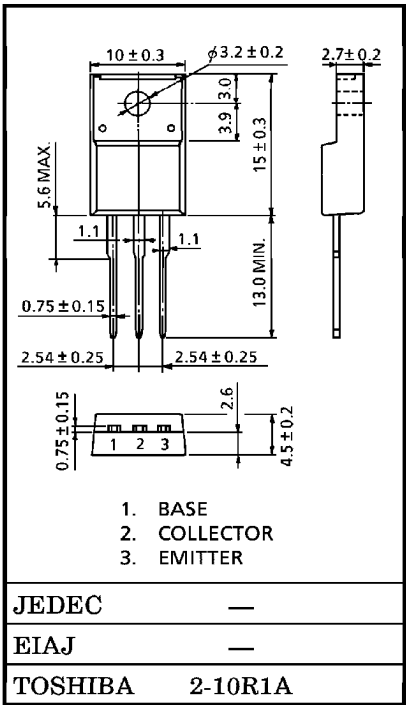
INDUSTRIAL APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage
: $V_{CE(sat)} = -0.4V$ (Max.) (at $I_C = -6A$)
- High Speed Switching Time : $t_{stg} = 1.0\mu s$ (Typ.)
- Complementary to 2SC3709A

MAXIMUM RATINGS (Ta = 25°C)

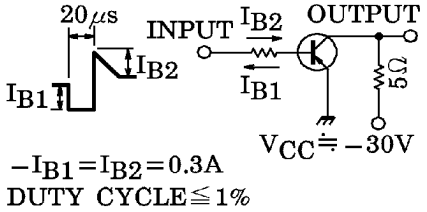
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-12	A
Base Current	I_B	-2	A
Collector Power Dissipation (Tc = 25°C)	P_C	30	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = -60V, I _E = 0	—	—	-10	μA
Emitter Cut-off Current		IEBO	V _{EB} = -6V, I _C = 0	—	—	-10	μA
Collector-Emitter Breakdown Voltage		V (BR) CEO	I _C = -50mA, I _B = 0	-50	—	—	V
DC Current Gain		h _{FE} (1) (Note)	V _{CE} = -1V, I _C = -1A	70	—	240	
		h _{FE} (2)	V _{CE} = -1V, I _C = -6A	40	—	—	
Saturation Voltage	Collector-Emitter	V _{CE} (sat)	I _C = -6A, I _B = -0.3A	—	-0.15	-0.4	V
	Base-Emitter	V _{BE} (sat)	I _C = -6A, I _B = -0.3A	—	-0.9	-1.2	
Transition Frequency		f _T	V _{CE} = -5V, I _C = -1A	—	70	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = -10V, I _E = 0, f = 1MHz	—	320	—	pF
Switching Time	Turn-on Time	t _{on}	 20μs INPUT I_{B2} I_{B1} OUTPUT I_C I_E V_{CC} ≐ -30V -I_{B1} = I_{B2} = 0.3A DUTY CYCLE ≤ 1%	—	0.3	—	μs
	Storage Time	t _{stg}		—	1.0	—	
	Fall Time	t _f		—	0.2	—	

(Note) h_{FE} (1) Classification O : 70~140, Y : 120~240

