

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3303

HIGH CURRENT SWITCHING APPLICATIONS

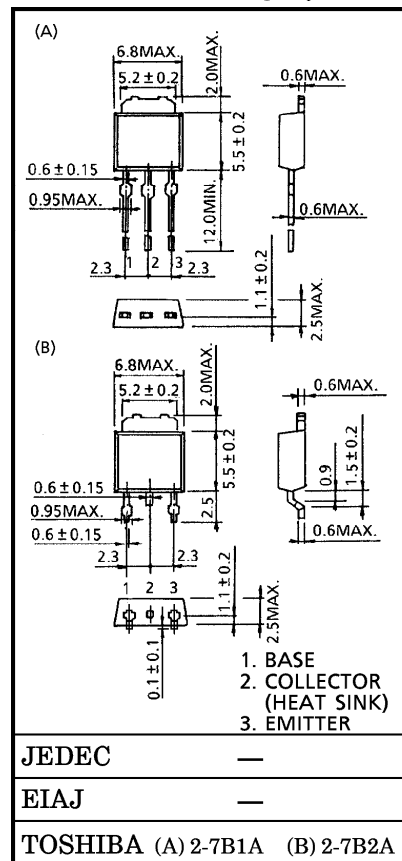
INDUSTRIAL APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.4\text{ V (Max.) (at } I_C = 3\text{ A)}$
- High Speed Switching Time : $t_{stg} = 1.0\ \mu\text{s (Typ.)}$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	DC	I_C	5
	Pulse	I_{CP}	8
Base Current	I_B	1	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	1.0
	$T_c = 25^\circ\text{C}$		20
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$

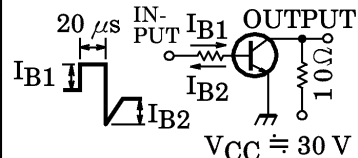


Weight : 0.36 g

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = 100 V, I _E = 0	—	—	1	μA
Emitter Cut-off Current		IEBO	V _{EB} = 7 V, I _C = 0	—	—	1	μA
Collector-Emitter Breakdown Voltage		V(BR) CEO	I _C = 10 mA, I _B = 0	80	—	—	V
DC Current Gain		h _{FE} (1) (Note)	V _{CE} = 1 V, I _C = 1 A	70	—	240	
		h _{FE} (2)	V _{CE} = 1 V, I _C = 3 A	40	—	—	
Collector-Emitter Saturation Voltage		V _{CE(sat)}	I _C = 3 A, I _B = 0.15 A	—	0.2	0.4	V
Base-Emitter Saturation Voltage		V _{BE(sat)}	I _C = 3 A, I _B = 0.15 A	—	0.9	1.2	V
Transition Frequency		f _T	V _{CE} = 4 V, I _C = 1 A	—	120	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	—	80	—	pF
Switching Time	Turn-on Time	t _{on}	 <p>V_{CE} = 30 V</p>	—	0.2	—	μs
	Storage Time	t _{stg}		—	1.0	—	
	Fall Time	t _f		I _{B1} = -I _{B2} = 0.15 A, DUTY CYCLE ≤ 1%	—	0.1	

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

