

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

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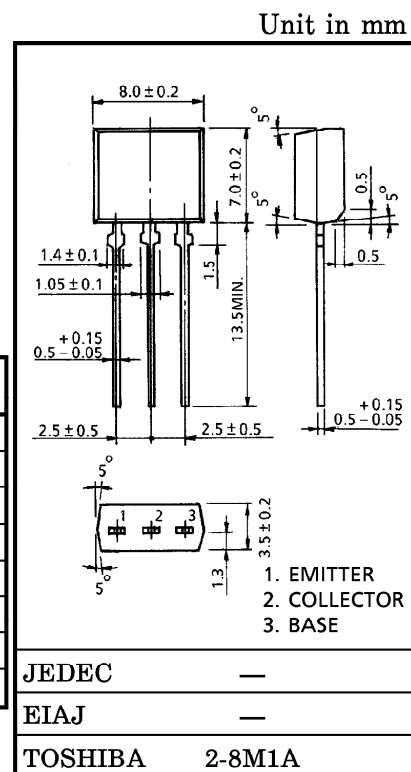
SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING
APPLICATIONS

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- High Speed Switching
: $t_r = 1.0\mu s$ (Max.), $t_f = 1.0\mu s$ (Max.)
- High Collector Breakdown Voltage : $V_{CEO} = 400V$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	500	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	2	A
Base Current	I_B	0.5	A
Collector Power Dissipation	P_C	1.3	W
Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$



Weight : 0.55g (Typ.)

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 400V, I_E = 0$	—	—	100	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 7V, I_C = 0$	—	—	1	mA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1mA, I_E = 0$	500	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	400	—	—	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 5V, I_C = 0.1A$	20	—	—	
	$h_{FE(2)}$	$V_{CE} = 5V, I_C = 1A$	8	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}, I_C = 1A, I_B = 0.2A$	—	—	1.0	V
	Base-Emitter	$V_{BE(sat)}, I_C = 1A, I_B = 0.2A$	—	—	1.5	
Switching Time	Rise Time	t_r	—	—	1.0	μs
	Storage Time	t_{stg}	—	—	2.5	
	Fall Time	t_f	—	—	1.0	

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