

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

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SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING

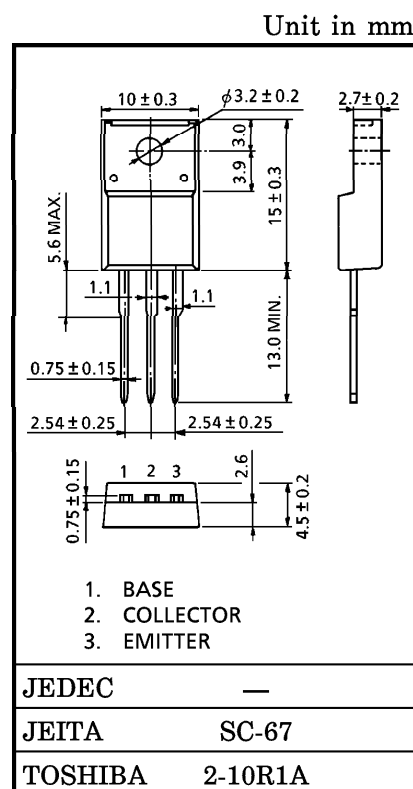
APPLICATIONS

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- Excellent Switching Times : $t_r=0.7\mu s$ (Max.), $t_f=0.5\mu s$ (Max.)
- High Collectors Breakdown Voltage : $V_{CEO}=800V$

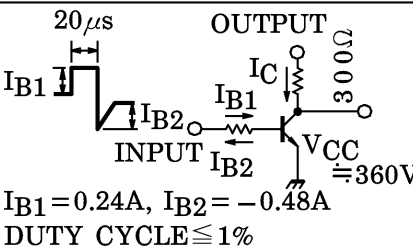
MAXIMUM RATINGS (T_c = 25°C)

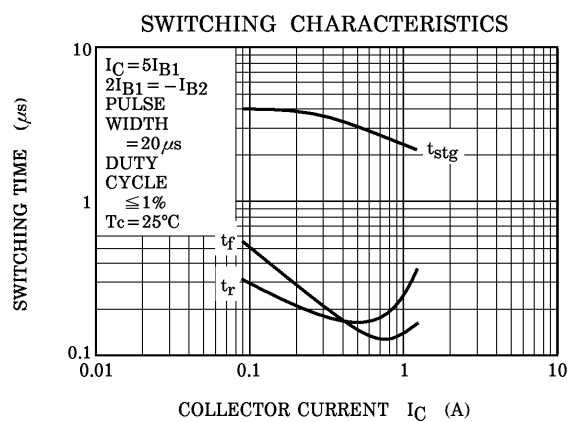
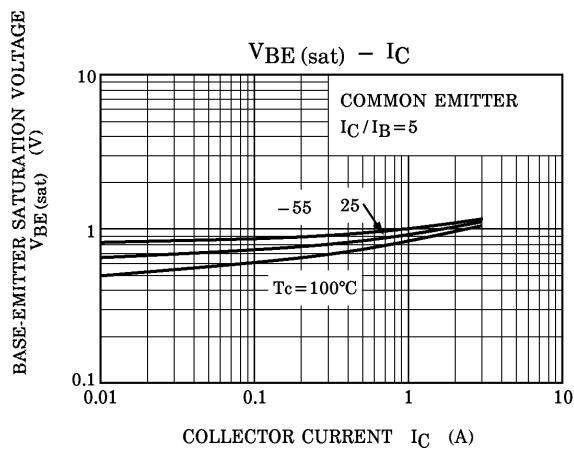
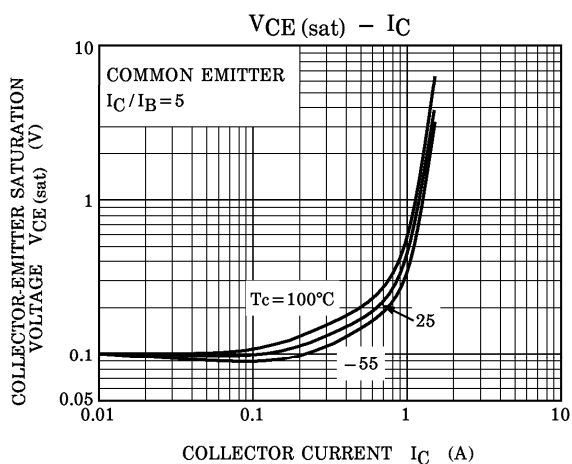
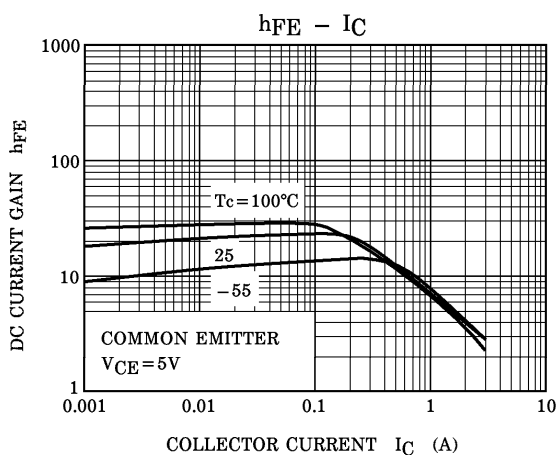
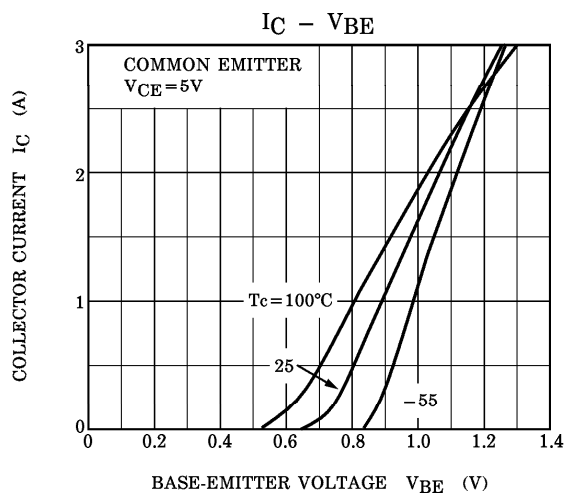
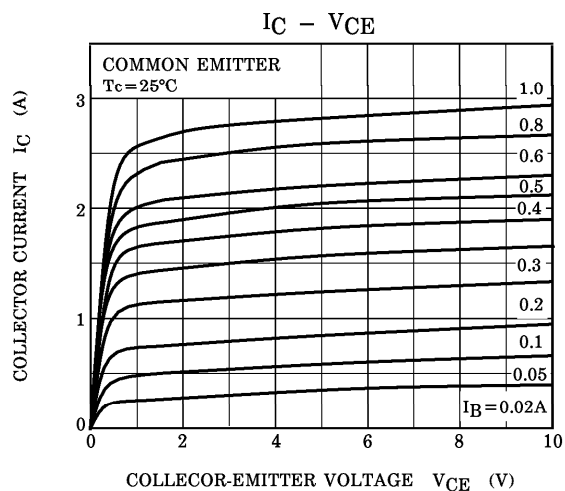
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	900	V
Collector-Emitter Voltage		V_{CEO}	800	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	3	A
	Pulse	I_{CP}	5	
Base Current		I_B	1	A
Collector Power	$T_a = 25^\circ\text{C}$	P_C	2.0	W
Dissipation	$T_c = 25^\circ\text{C}$		25	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55 \sim 150$	$^\circ\text{C}$

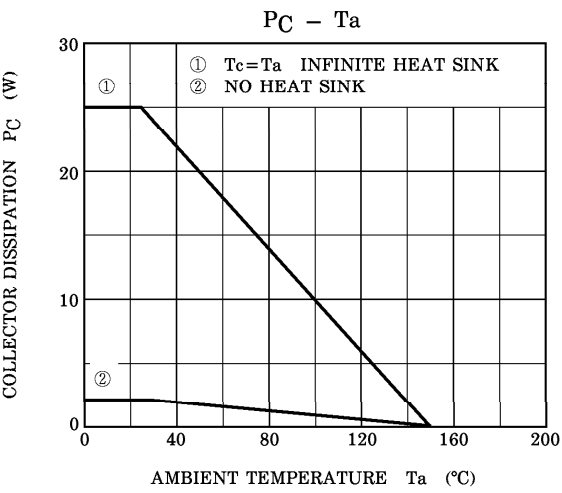
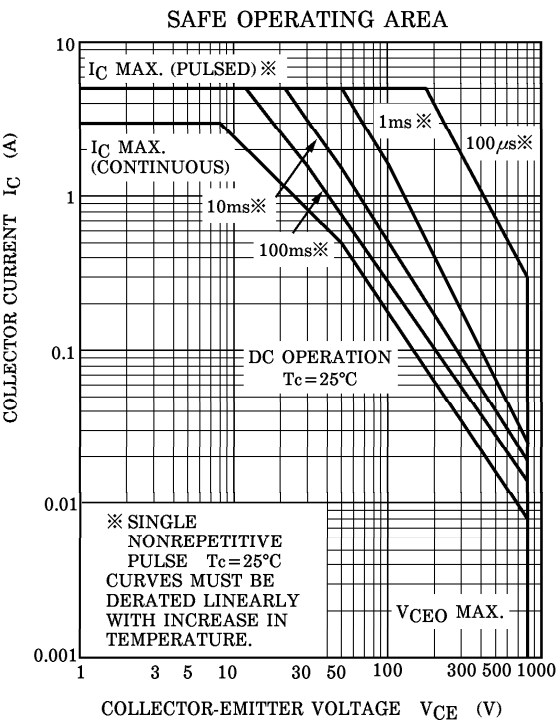


Weight : 1.7g (Typ.)

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 720\text{V}$, $I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7\text{V}$, $I_C = 0$	—	—	10	μA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1\text{mA}$, $I_E = 0$	900	—	—	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	800	—	—	V
DC Current Gain		$h_{FE}(1)$	$V_{CE} = 5\text{V}$, $I_C = 1\text{mA}$	10	—	—	
		$h_{FE}(2)$	$V_{CE} = 5\text{V}$, $I_C = 0.15\text{A}$	15			
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 1.2\text{A}$, $I_B = 0.24\text{A}$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = 1.2\text{A}$, $I_B = 0.24\text{A}$	—	—	1.3	V
Switching Time	Rise Time	t_r	 $20\mu\text{s}$ I_{B1} I_{B2} I_C 300Ω $V_{CC} = 360\text{V}$ $I_{B1} = 0.24\text{A}$, $I_{B2} = -0.48\text{A}$ $\text{DUTY CYCLE} \leq 1\%$	—	—	0.7	μs
	Storage Time	t_{stg}		—	—	4.0	
	Fall Time	t_f		—	—	0.5	





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