

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

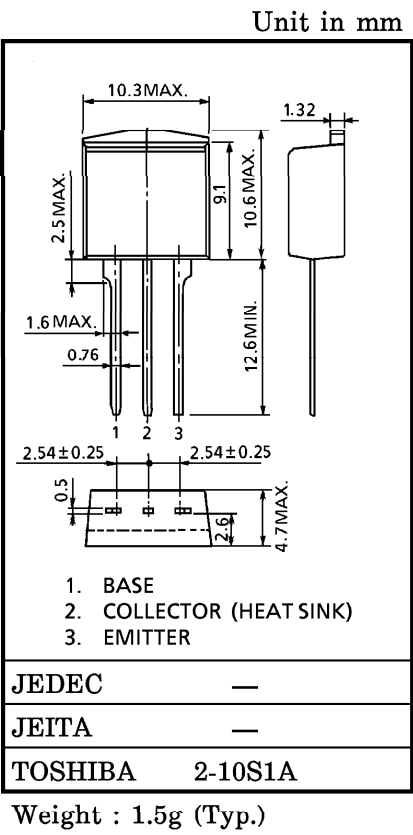
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SWITCHING REGULATOR APPLICATIONS  
HIGH VOLTAGE SWITCHING APPLICATIONS  
DC-DC CONVERTER APPLICATIONS

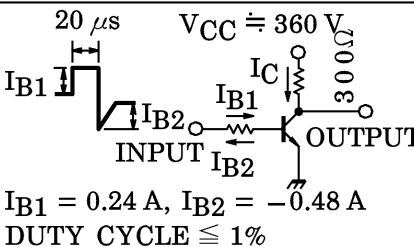
- Excellent Switching Times :  $t_f = 0.5 \mu s$  (Max.) ( $I_C = 1.2 A$ )
- High Collectors Breakdown Voltage :  $V_{CEO} = 800 V$
- High DC Current Gain :  $h_{FE} = 15$  (Min.) ( $I_C = 0.15 A$ )

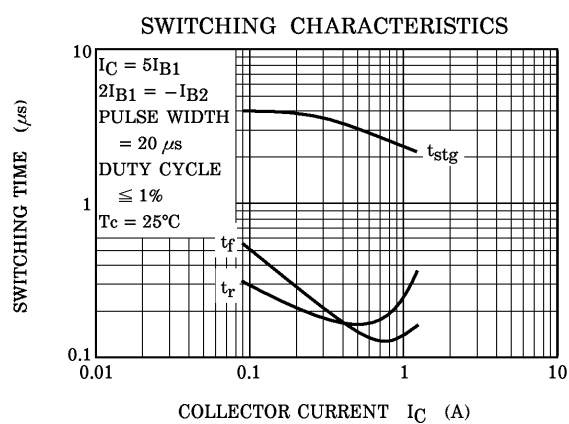
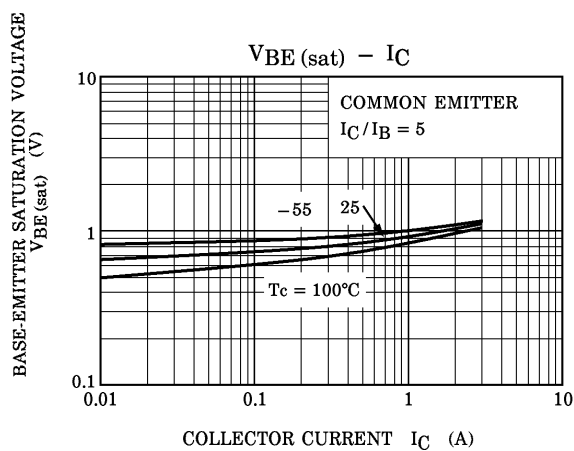
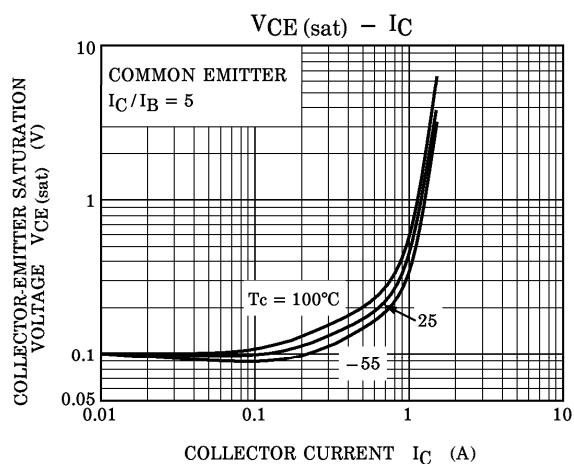
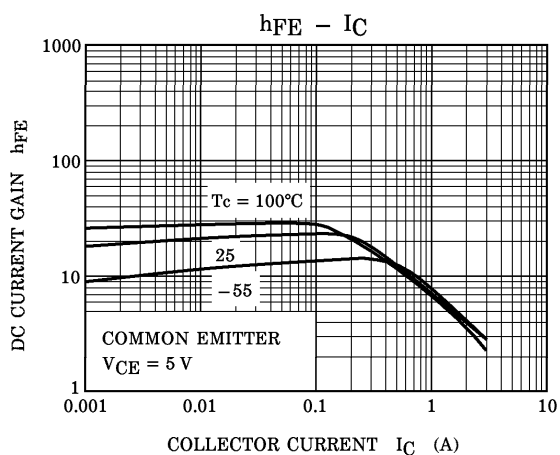
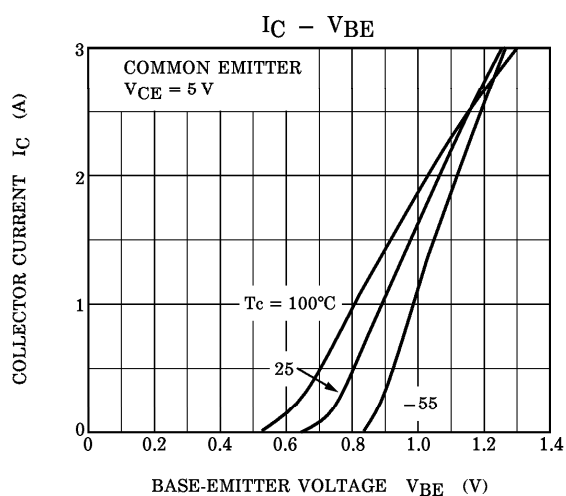
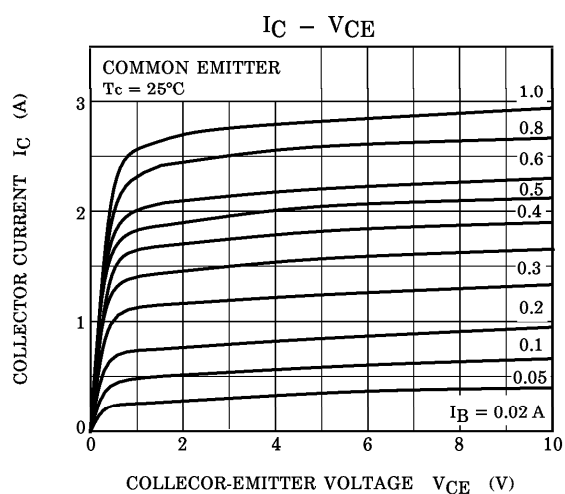
MAXIMUM RATINGS ( $T_c = 25^{\circ}C$ )

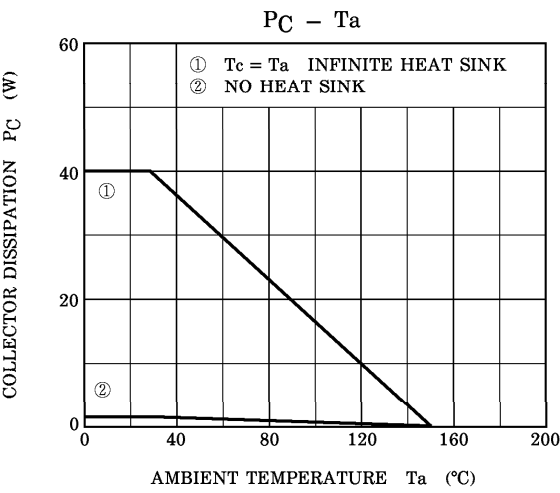
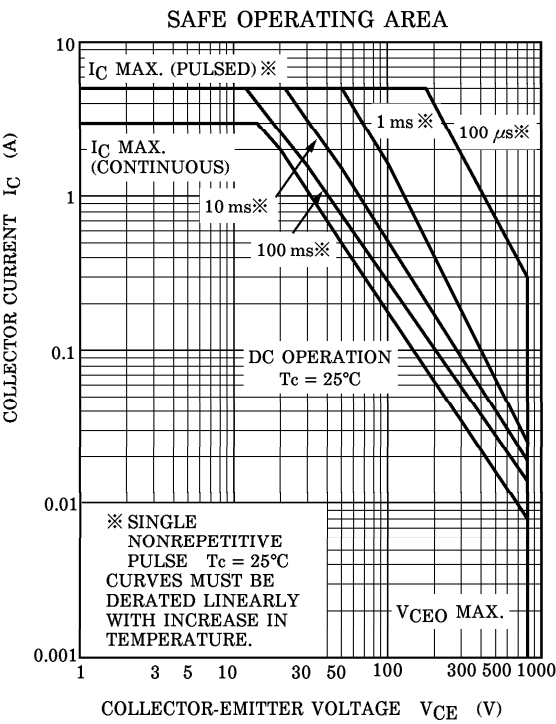
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	900	V
Collector-Emitter Voltage		$V_{CEO}$	800	V
Emitter-Base Voltage		$V_{EBO}$	7	V
Collector Current	DC	$I_C$	3	A
	Pulse	$I_{CP}$	5	
Base Current		$I_B$	1	A
Collector Power Dissipation	$T_a = 25^{\circ}C$	$P_C$	1.5	W
	$T_c = 25^{\circ}C$		40	
Junction Temperature		$T_j$	150	$^{\circ}C$
Storage Temperature Range		$T_{stg}$	-55~150	$^{\circ}C$



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	$\mu\text{A}$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 7\text{ V}, I_C = 0$	—	—	10	$\mu\text{A}$
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_B = 0$	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	$t_r$	 <p> <math>20\ \mu\text{s}</math> <math>V_{CC} \doteq 360\text{ V}</math>  <math>I_{B1}</math> <math>I_{B2}</math> <math>I_C</math> <math>300\ \Omega</math>            INPUT OUTPUT  <math>I_{B1} = 0.24\text{ A}, I_{B2} = -0.48\text{ A}</math>            DUTY CYCLE <math>\leq 1\%</math> </p>	—	—	0.7	$\mu\text{s}$
	Storage Time	$t_{stg}$		—	—	4.0	
	Fall Time	$t_f$		—	—	0.5	





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