

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE

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HIGH SPEED AND HIGH VOLTAGE SWITCHING APPLICATIONS

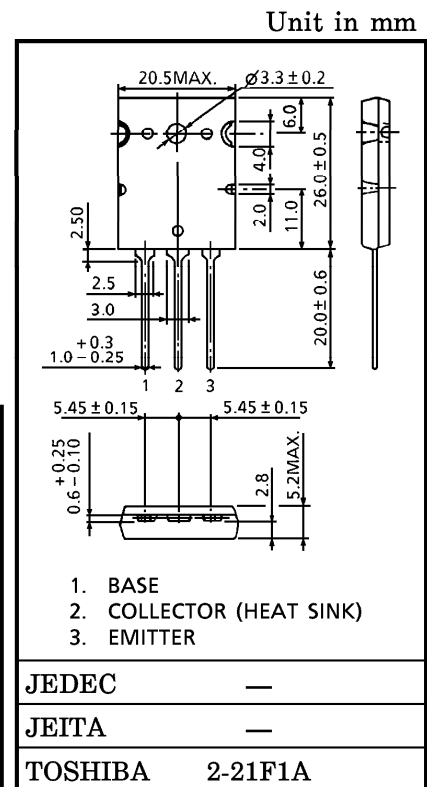
SWITCHING REGULATOR APPLICATIONS

HIGH SPEED DC-DC CONVERTER APPLICATIONS

- **Excellent Switching Times**
: $t_r = 1.0 \mu s$ (Max.), $t_f = 1.0 \mu s$ (Max.) ($I_C = 5 A$)
- **High Collector Breakdown Voltage** : $V_{CEO} = 800 V$

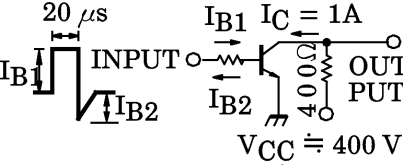
MAXIMUM RATINGS (T_c = 25°C)

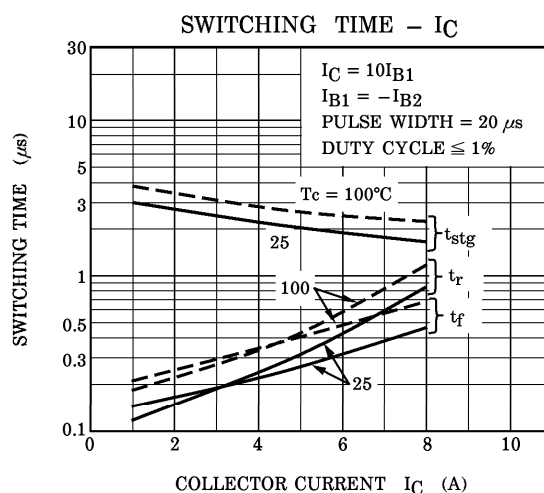
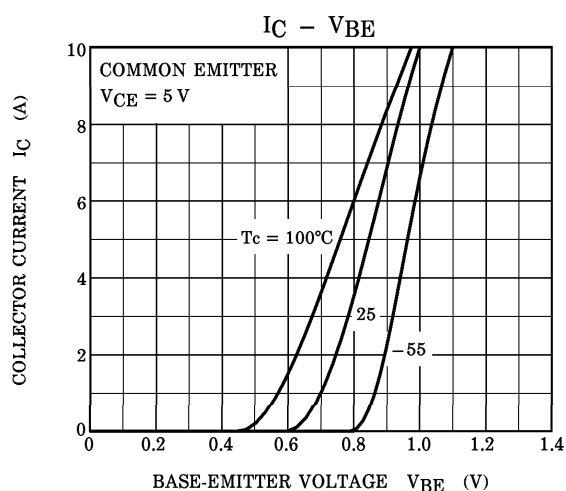
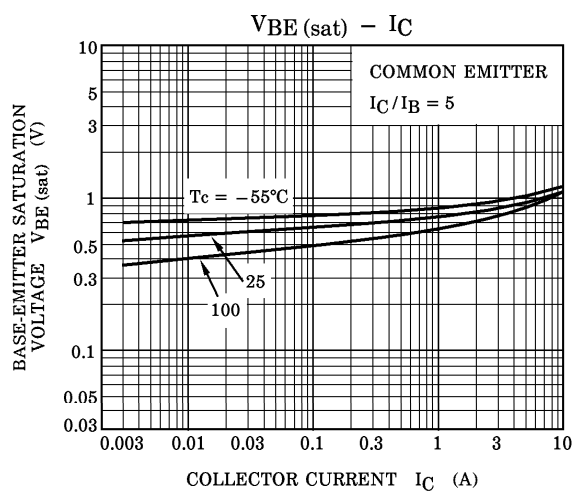
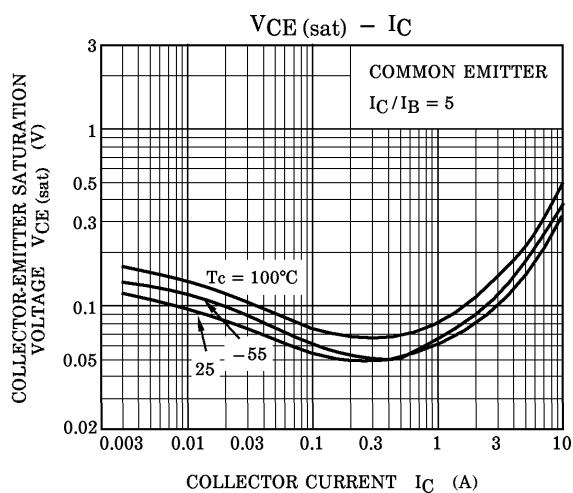
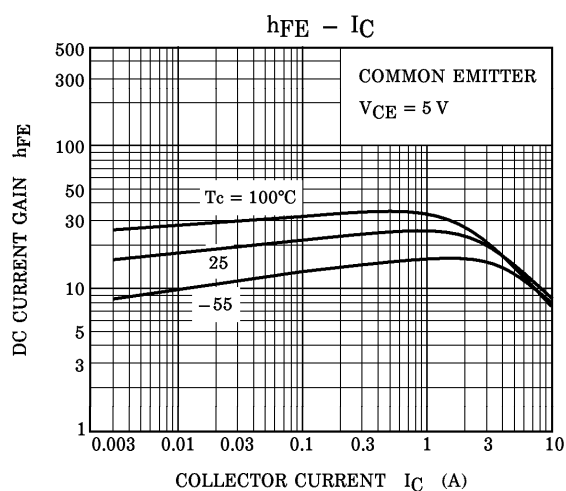
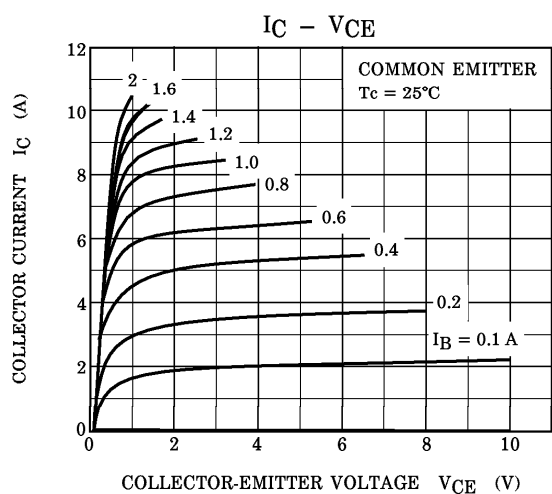
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	900	V
Collector-Emitter Voltage		V_{CEO}	800	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	10	A
	Pulse	I_{CP}	15	
Base Current		I_B	3	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)		P_C	150	W
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	$-55\sim 150$	$^\circ\text{C}$

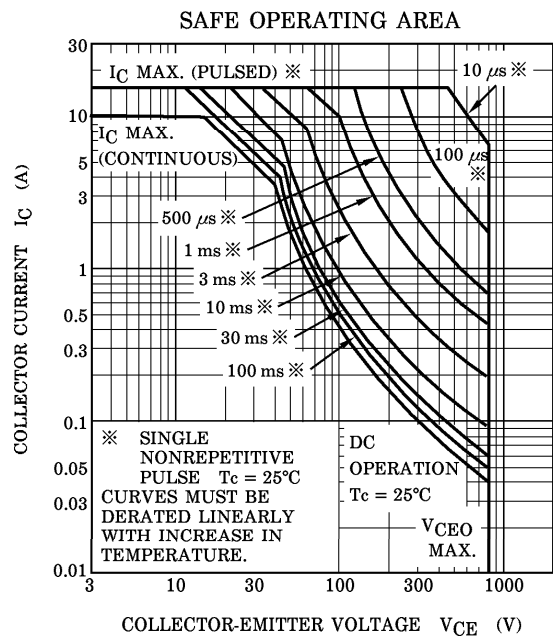
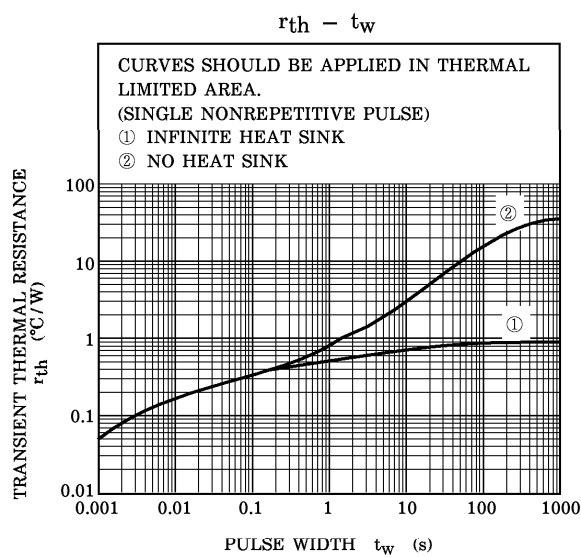


Weight : 9.8 g (Typ.)

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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 800 \text{ V}, I_E = 0$	—	—	100	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	1	mA
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		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 10 \text{ mA}$	10	—	—	
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 5 \text{ A}$	10	—	—	
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 5 \text{ A}, I_B = 1 \text{ A}$	—	—	1.0	V
Base-Emitter Saturation Voltage		$V_{BE (sat)}$	$I_C = 5 \text{ A}, I_B = 1 \text{ A}$	—	—	1.5	V
Switching Time	Rise Time	t_r	 $20 \mu\text{s}$ I_{B1} I_{B2} $I_C = 1 \text{ A}$ 400Ω $V_{CC} = 400 \text{ V}$ $I_{B1} = -I_{B2} = -0.4 \text{ A}$ $\text{DUTY CYCLE} \leq 1\%$	—	—	1.0	μs
	Storage Time	t_{stg}		—	—	3.0	
	Fall Time	t_f		—	—	1.0	





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