

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

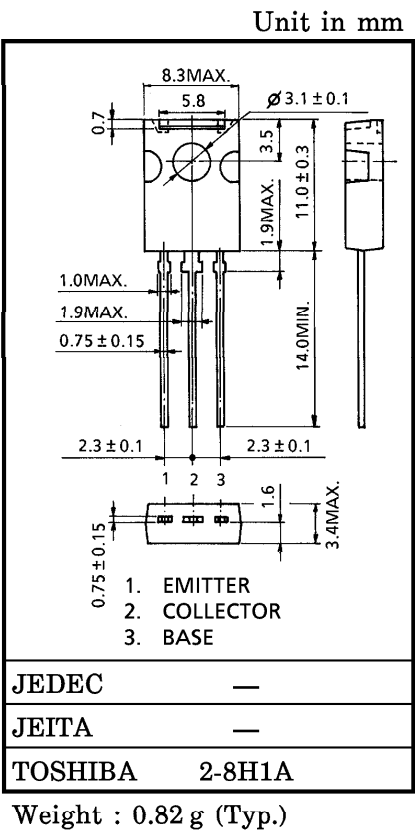
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HIGH VOLTAGE SWITCHING APPLICATIONS

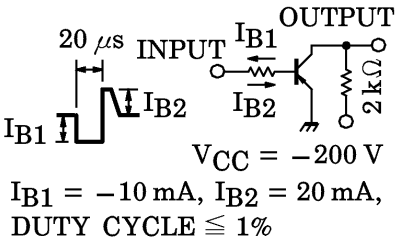
- High Voltage : $V_{CEO} = -400\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = -1\text{ V (Max.)}$
($I_C = -100\text{ mA}$, $I_B = -10\text{ mA}$)
- Collector Metal (Fin) is Fully Covered with Mold Resin

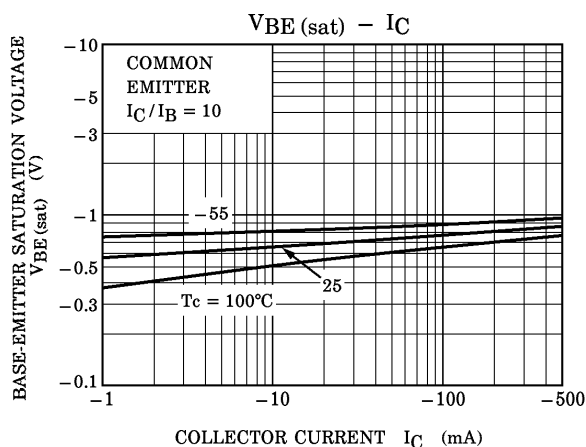
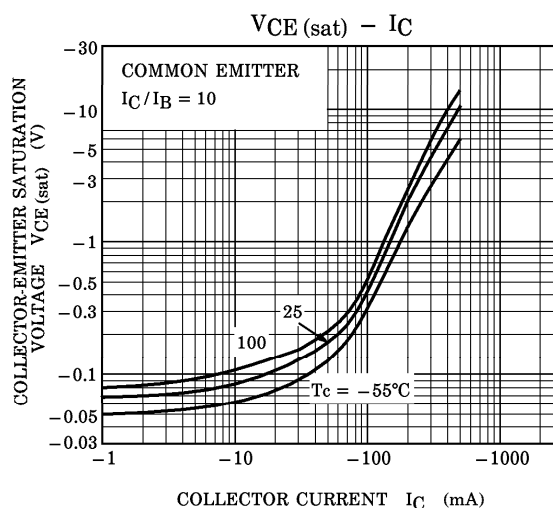
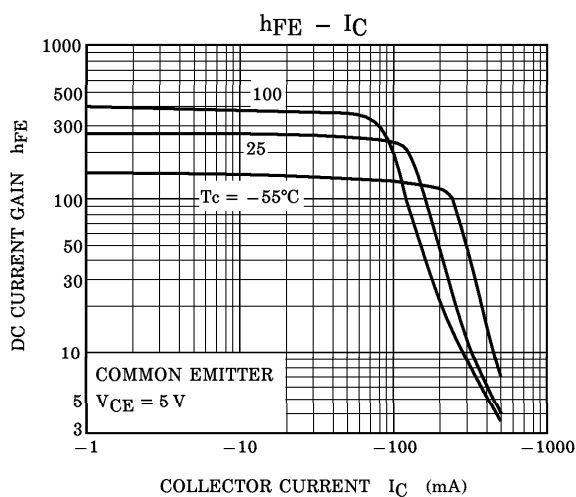
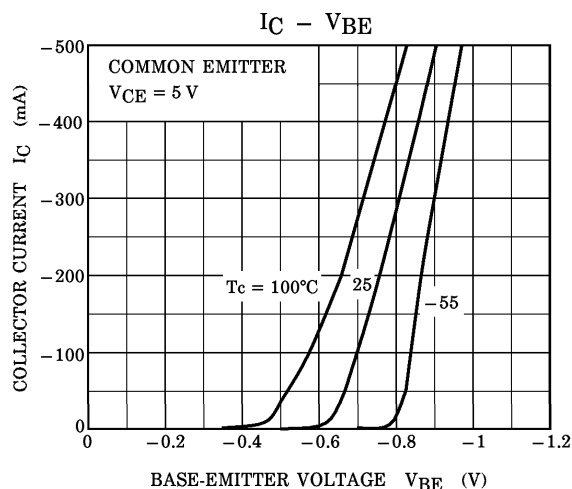
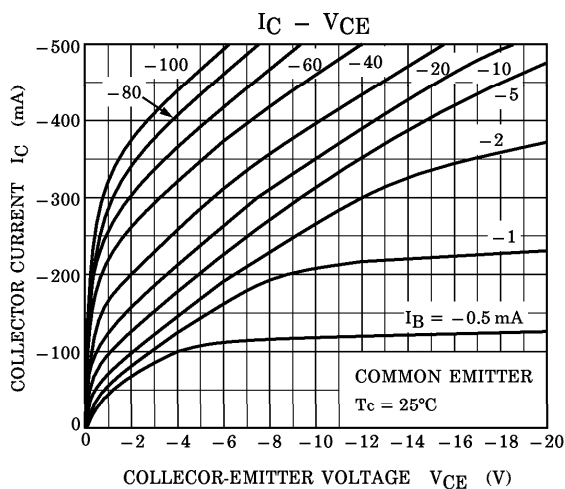
MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

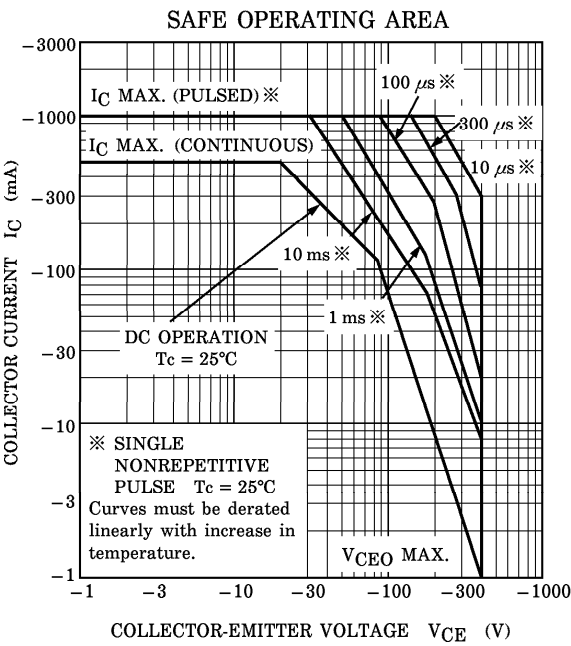
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-400	V
Collector-Emitter Voltage		V_{CEO}	-400	V
Emitter-Base Voltage		V_{EBO}	-7	V
Collector Current	DC	I_C	-0.5	A
	Pulse	I_{CP}	-1	
Base Current		I_B	-0.25	A
Collector Power Dissipation	$T_a = 25^\circ\text{C}$	P_C	1	W
	$T_c = 25^\circ\text{C}$		10	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$



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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -400\text{ V}, I_E = 0$	—	—	-10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -7\text{ V}, I_C = 0$	—	—	-1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = -10\text{ mA}, I_B = 0$	-400	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = -5\text{ V}, I_C = -20\text{ mA}$	140	—	450	
		$h_{FE(2)}$	$V_{CE} = -5\text{ V}, I_C = -100\text{ mA}$	140	—	400	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = -100\text{ mA}, I_B = -10\text{ mA}$	—	-0.4	-1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C = -100\text{ mA}, I_B = -10\text{ mA}$	—	-0.76	-0.9	V
Transition Frequency		f_T	$V_{CE} = -5\text{ V}, I_C = -50\text{ mA}$	—	35	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	18	—	pF
Switching Time	Turn-on Time	t_{on}	 $20\ \mu\text{s}$ INPUT I_{B1} OUTPUT I_{B2} $V_{CC} = -200\text{ V}$ $I_{B1} = -10\text{ mA}, I_{B2} = 20\text{ mA},$ DUTY CYCLE $\leq 1\%$	—	0.2	—	μs
	Storage Time	t_{stg}		—	2.3	—	μs
	Fall Time	t_f		—	0.2	—	μs





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