

TOSHIBA TRANSISTOR SILICON PNP TRIPLE DIFFUSED TYPE

2SA1971

HIGH VOLTAGE SWITCHING APPLICATIONS

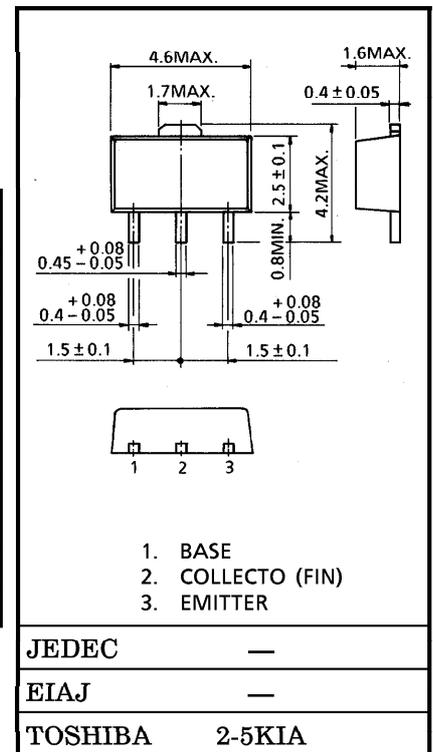
Unit in mm

- High Voltage : $V_{CE} = -400\text{ V}$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	-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	500	mW
	$T_a = 25^\circ\text{C}$ (Note)		1000	
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$

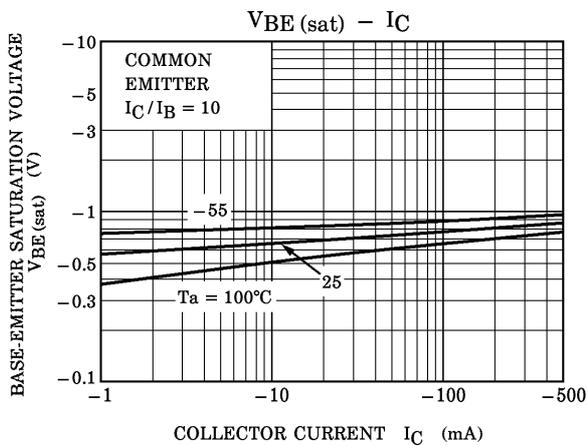
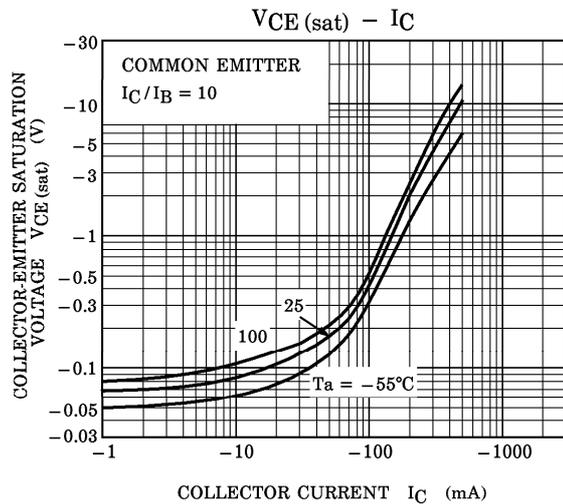
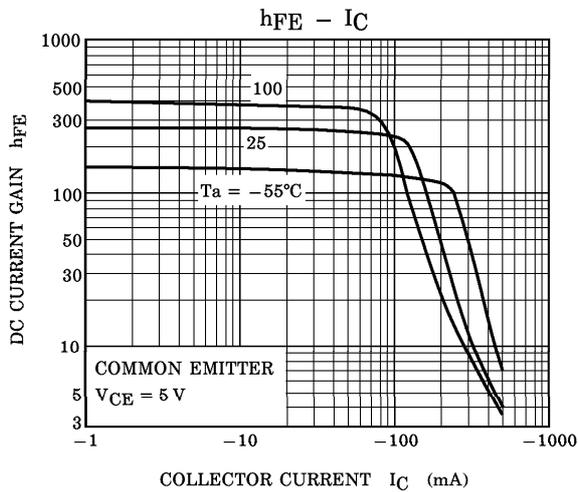
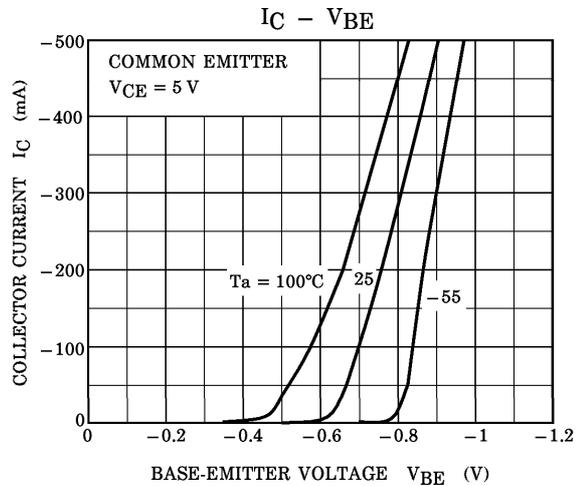
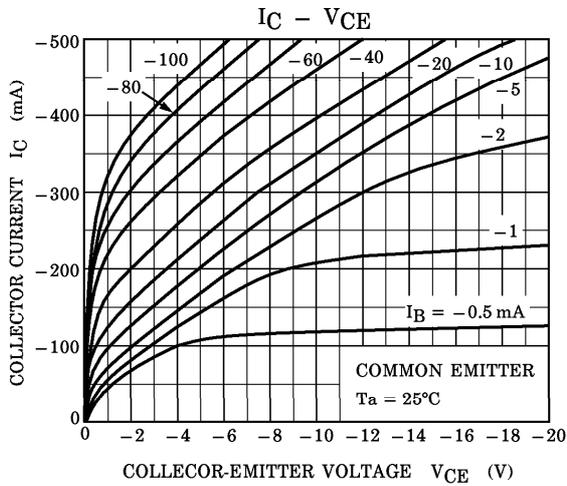
(Note) : Mounted on Ceramic Substrate ($250\text{ mm}^2 \times 0.8\text{ t}$)

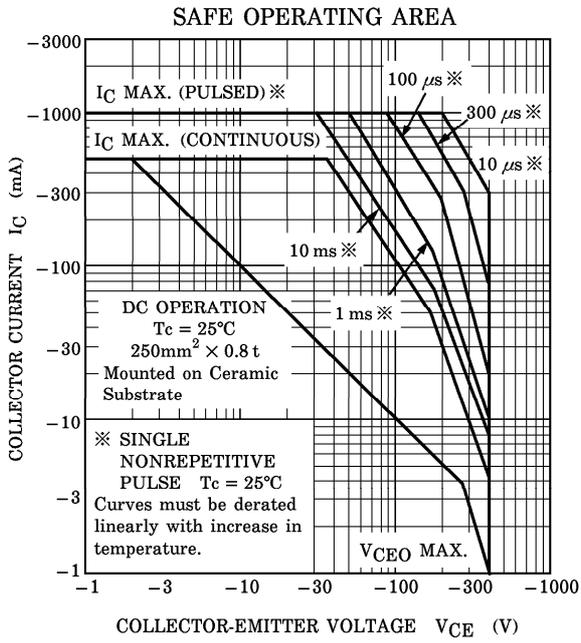


ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Weight : 0.05 g

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}			—	0.2	μs
	Storage Time	t_{stg}	—	2.3	—		
	Fall Time	t_f	—	0.2	—		





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