

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

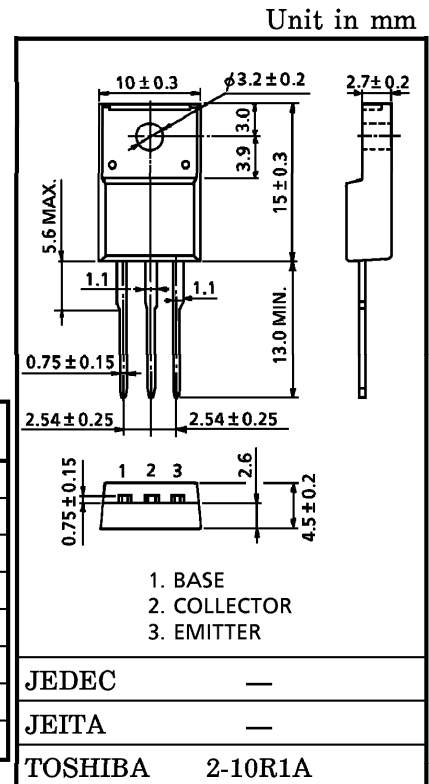
2SC5000

POWER AMPLIFIER APPLICATIONS

- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.4 \text{ V (Max.) (} I_C = 5 \text{ A)}$

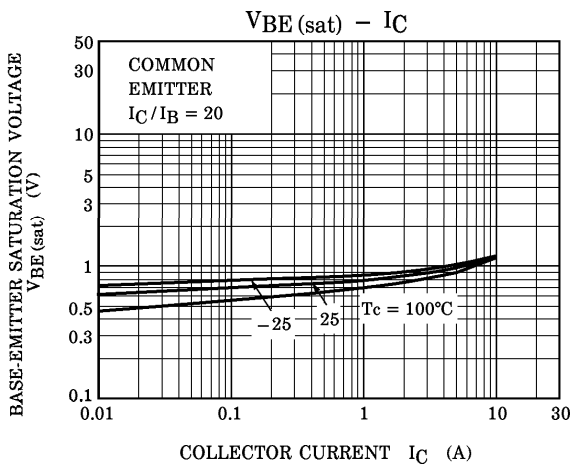
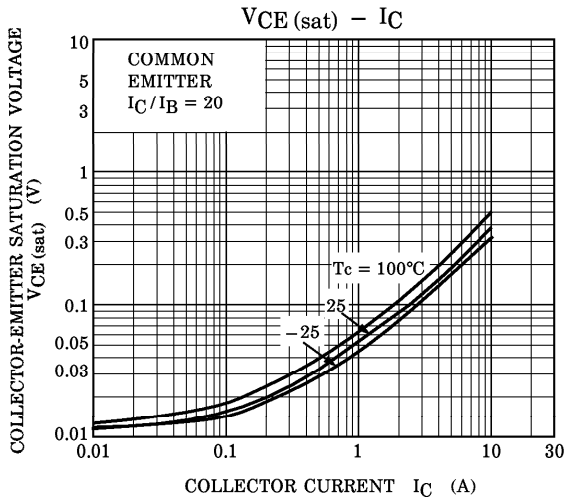
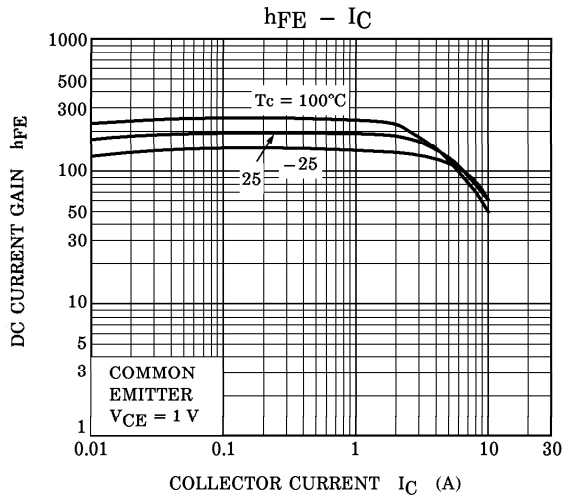
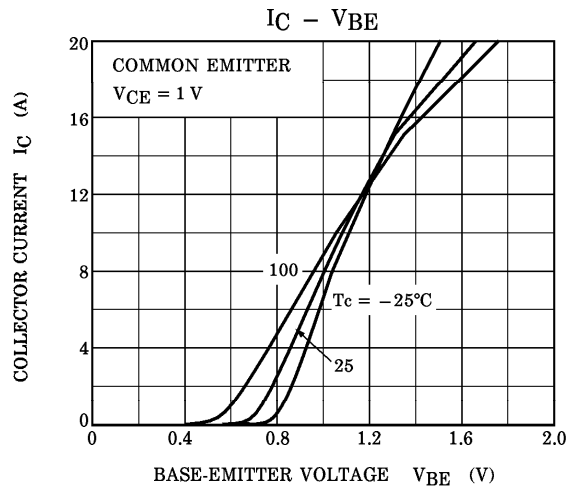
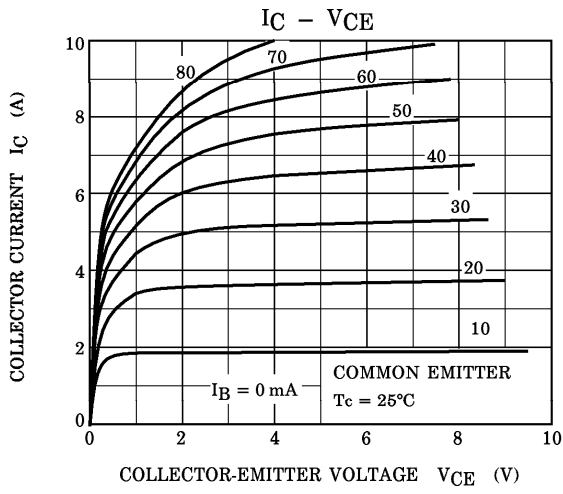
MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

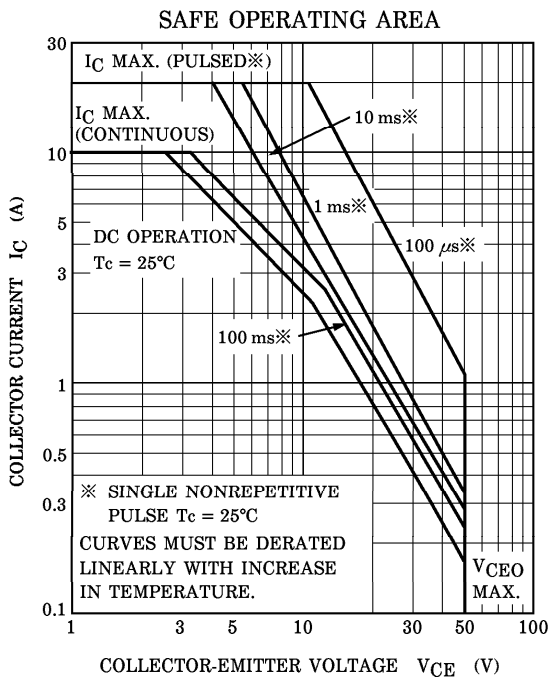
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	80	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EB0}	7	V
Collector Current	I_C	10	A
Base Current	I_B	1	A
Collector Power Dissipation	P_C	25	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-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_{CB0}	$V_{CB} = 70 \text{ V, } I_E = 0$	—	—	1	μA
Emitter Cut-off Current		I_{EB0}	$V_{EB} = 7 \text{ V, } I_C = 0$	—	—	1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10 \text{ mA, } I_B = 0$	50	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 1 \text{ V, } I_C = 1 \text{ A}$	120	—	400	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = 5 \text{ A, } I_B = 0.25 \text{ A}$	—	0.19	0.4	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = 5 \text{ A, } I_B = 0.25 \text{ A}$	—	0.96	1.4	
Transition Frequency		f_T	$V_{CE} = 1 \text{ V, } I_C = 1 \text{ A}$	—	90	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10 \text{ V, } I_E = 0, f = 1 \text{ MHz}$	—	90	—	pF





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