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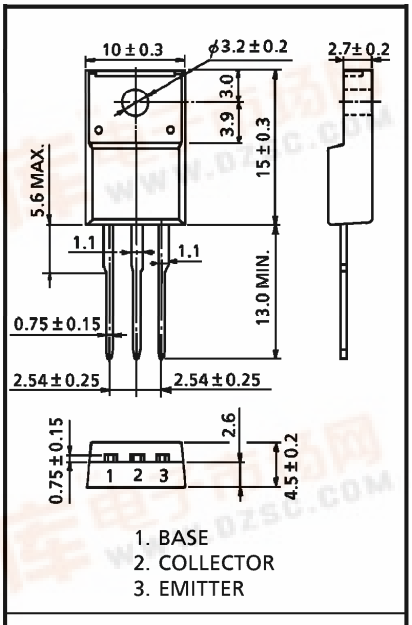
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

2SC5000

POWER AMPLIFIER APPLICATIONS

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

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-10R1A

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	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	°C
Storage Temperature Range	T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = 70 V, I_E = 0	—	—	1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB} = 7 V, I_C = 0	—	—	1	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)\ CEO}$	I_C = 10 mA, I_B = 0	50	—	—	V
DC Current Gain		$h_{FE\ (1)}$	V_{CE} = 1 V, I_C = 1 A	120	—	400	
Saturation Voltage	Collector-Emitter	$V_{CE\ (sat)}$	I_C = 5 A, I_B = 0.25 A	—	0.19	0.4	V
	Base-Emitter	$V_{BE\ (sat)}$	I_C = 5 A, I_B = 0.25 A	—	0.96	1.4	
Transition Frequency		f_T	V_{CE} = 1 V, I_C = 1 A	—	90	—	MHz
Collector Output Capacitance		C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz	—	90	—	pF

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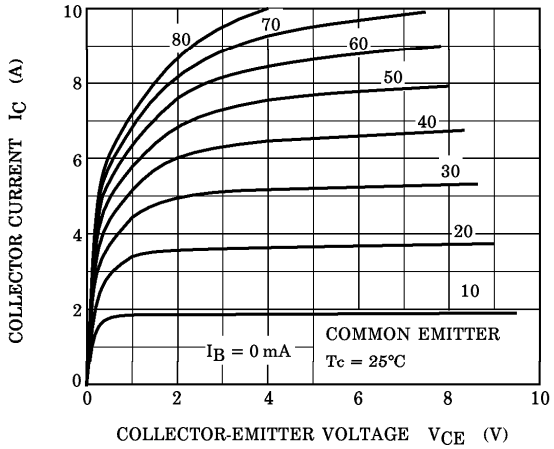
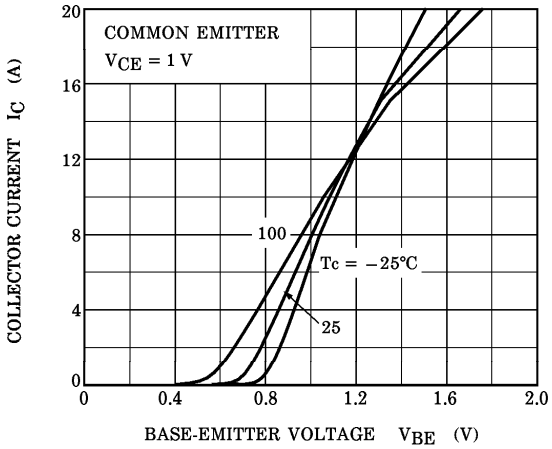
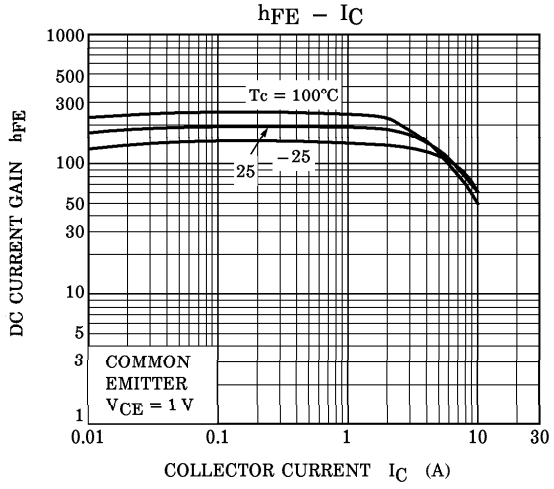
$I_C - V_{CE}$



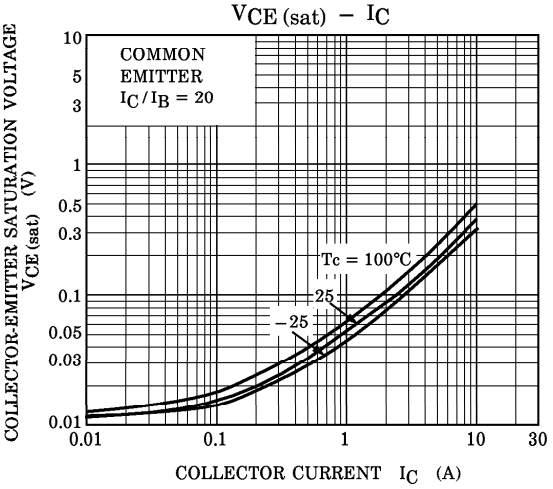
$I_C - V_{BE}$



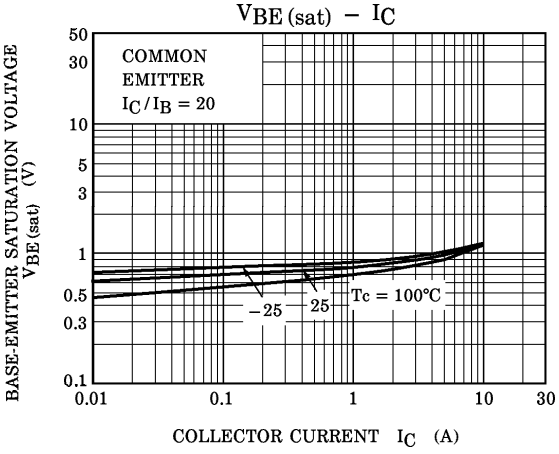
$h_{FE} - I_C$



$V_{CE\,(sat)} - I_C$



$V_{BE\,(sat)} - I_C$



SAFE OPERATING AREA