

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

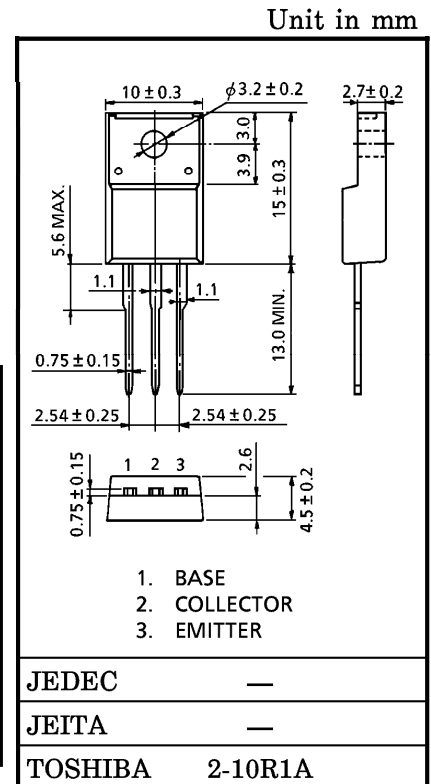
2SA1451A

HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS

- Low Collector Saturation Voltage
: $V_{CE(sat)} = -0.4V$ (Max.) (at $I_C = -6A$)
- High Speed Switching Time : $t_{stg} = 1.0\mu s$ (Typ.)
- Complementary to 2SC3709A

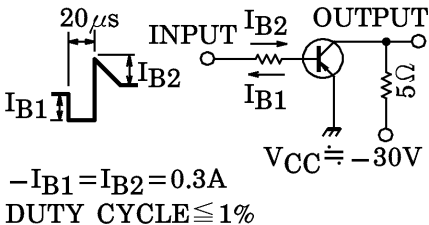
MAXIMUM RATINGS (T_c = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EB0}	-6	V
Collector Current	I_C	-12	A
Base Current	I_B	-2	A
Collector Power Dissipation ($T_c = 25^\circ\text{C}$)	P_C	30	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~150	$^\circ\text{C}$

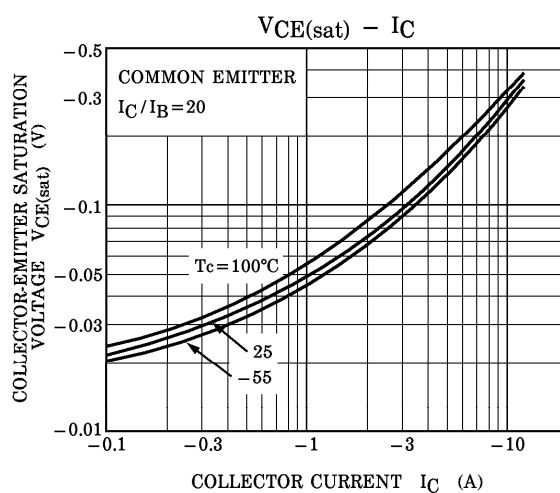
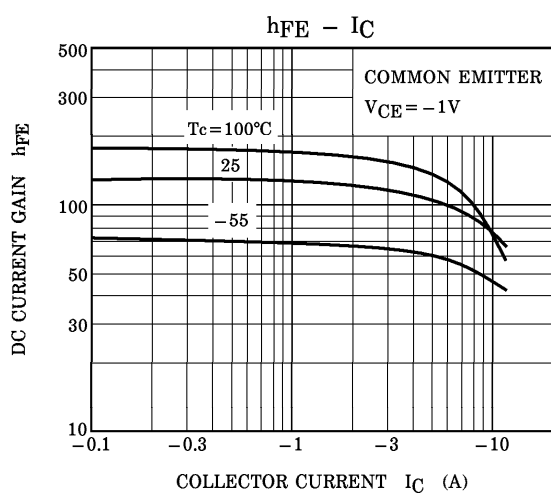
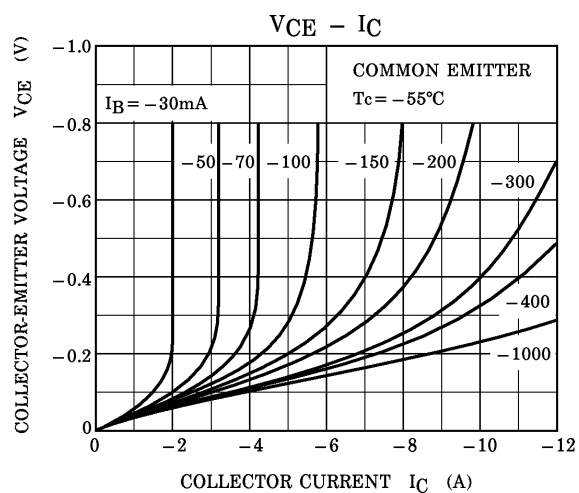
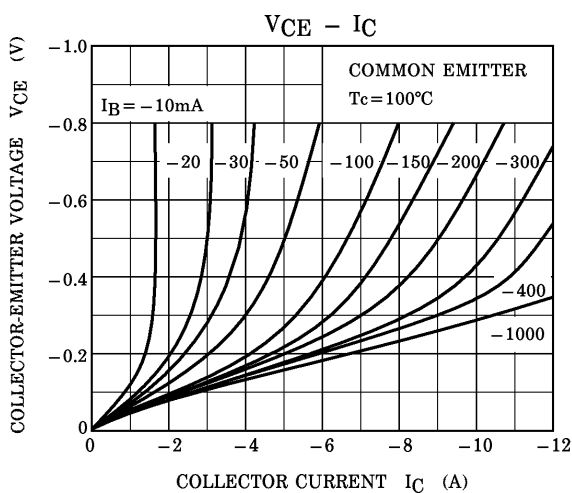
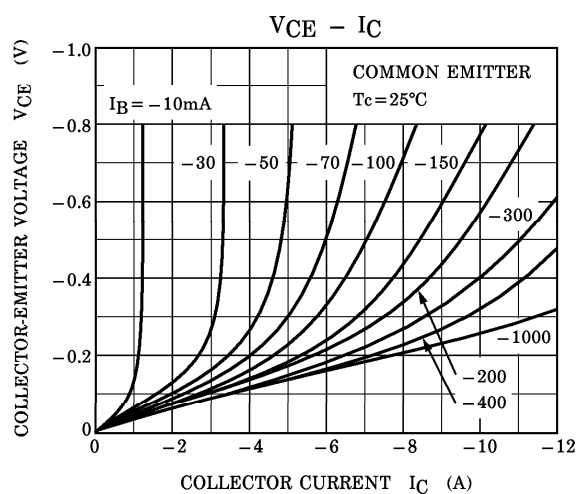
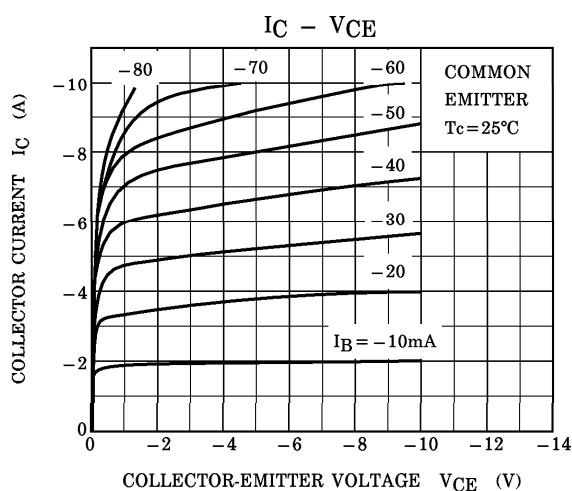


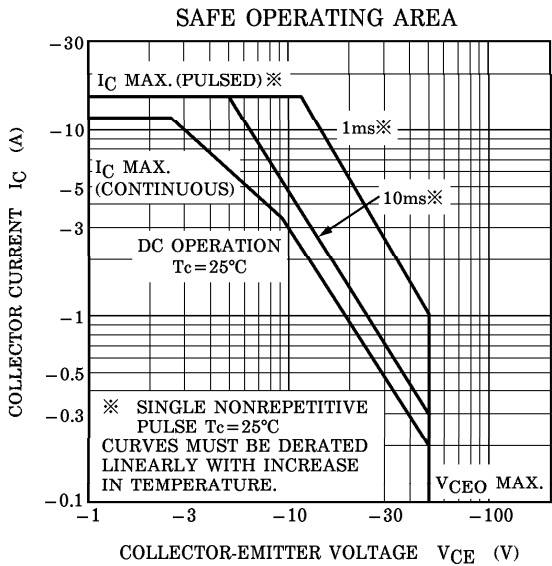
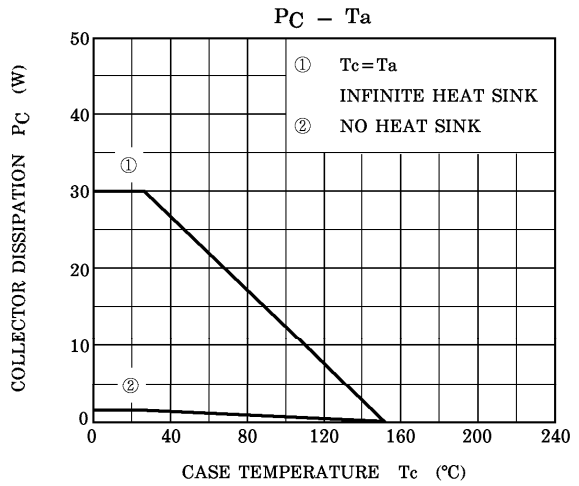
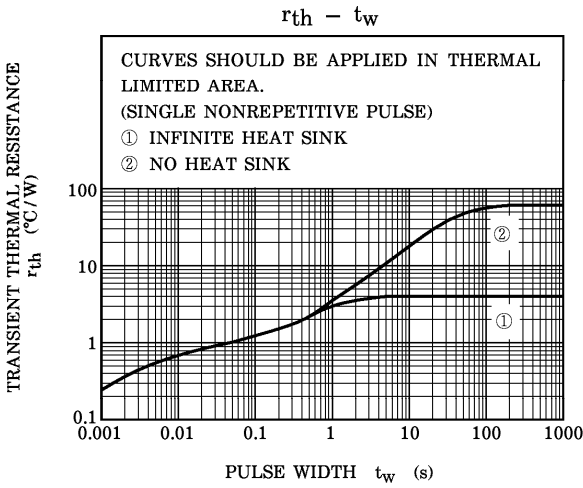
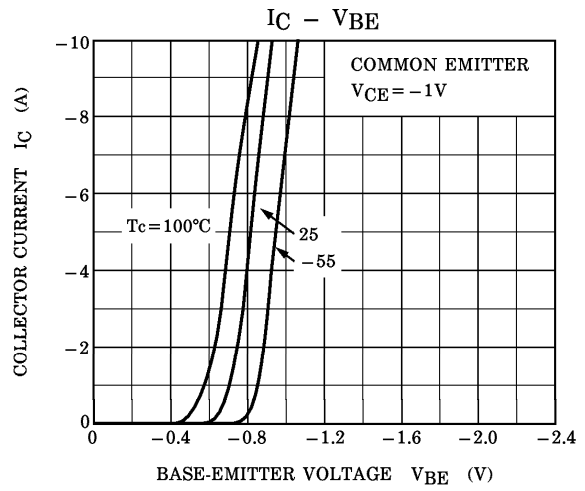
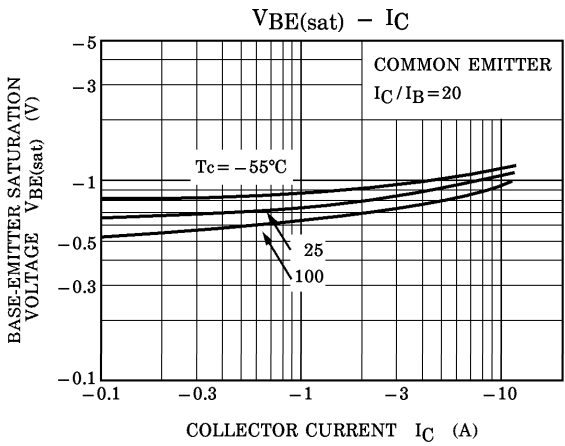
Weight : 1.7g (Typ.)

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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -60\text{V}, I_E = 0$	—	—	-10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -6\text{V}, I_C = 0$	—	—	-10	μA
Collector-Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = -50\text{mA}, I_B = 0$	-50	—	—	V
DC Current Gain		$h_{FE(1)}$ (Note)	$V_{CE} = -1\text{V}, I_C = -1\text{A}$	70	—	240	
		$h_{FE(2)}$	$V_{CE} = -1\text{V}, I_C = -6\text{A}$	40	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = -6\text{A}, I_B = -0.3\text{A}$	—	-0.15	-0.4	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = -6\text{A}, I_B = -0.3\text{A}$	—	-0.9	-1.2	
Transition Frequency		f_T	$V_{CE} = -5\text{V}, I_C = -1\text{A}$	—	70	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	—	320	—	pF
Switching Time	Turn-on Time	t_{on}	 $20\mu\text{s}$ INPUT I_{B2} OUTPUT I_{B1} 15Ω $V_{CC} = -30\text{V}$ $-I_{B1} = I_{B2} = 0.3\text{A}$ DUTY CYCLE $\leq 1\%$	—	0.3	—	μs
	Storage Time	t_{stg}		—	1.0	—	
	Fall Time	t_f		—	0.2	—	

(Note) $h_{FE(1)}$ Classification O : 70~140, Y : 120~240





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