

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1451A

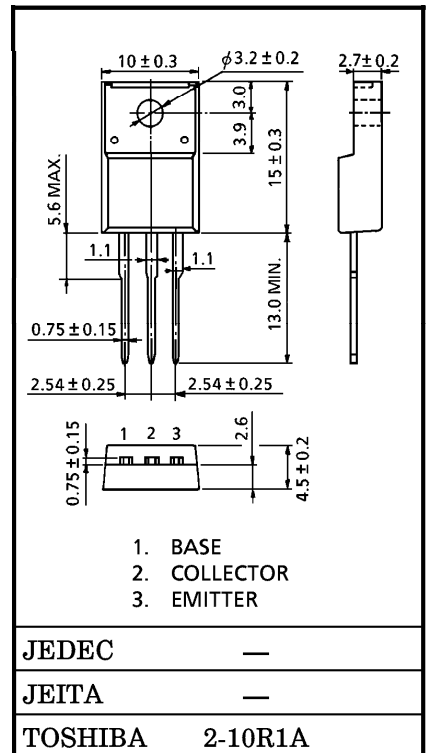
HIGH SPEED, HIGH CURRENT SWITCHING APPLICATIONS

- 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 ( $T_c = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CB0}$	-60	V
Collector-Emitter Voltage	$V_{CE0}$	-50	V
Emitter-Base Voltage	$V_{EB0}$	-6	V
Collector Current	$I_C$	-12	A
Base Current	$I_B$	-2	A
Collector Power Dissipation ( $T_c = 25^\circ C$ )	$P_C$	30	W
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

Unit in mm

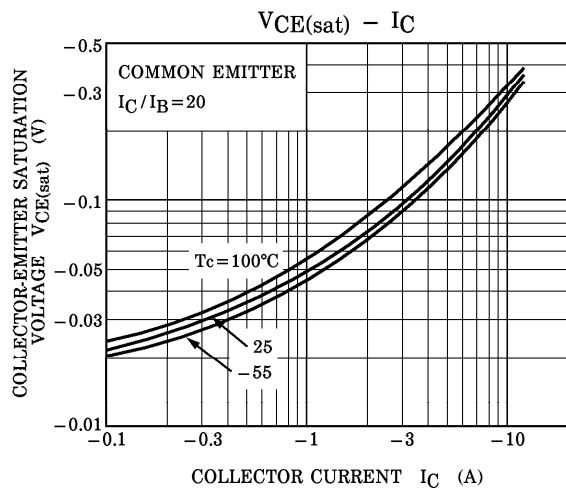
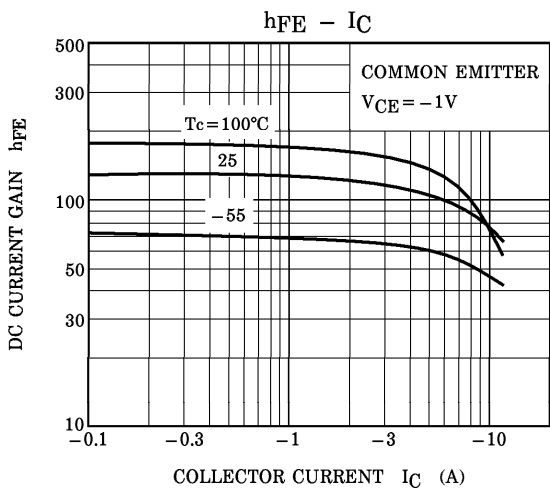
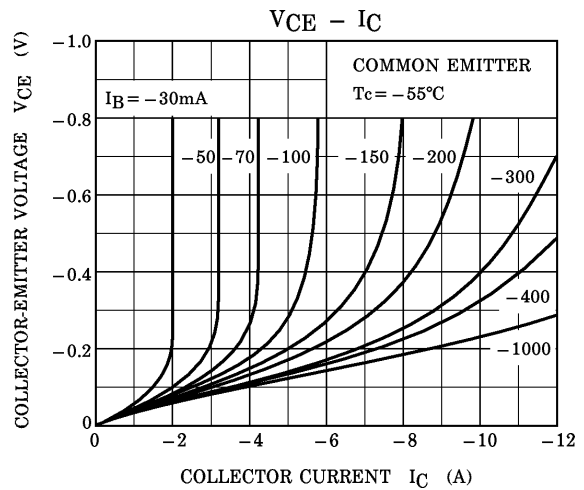
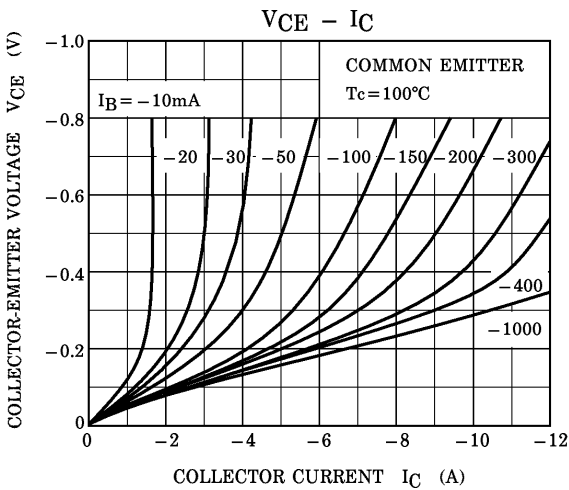
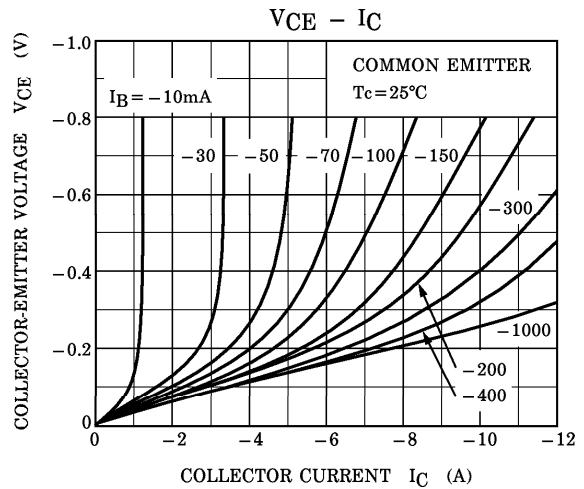
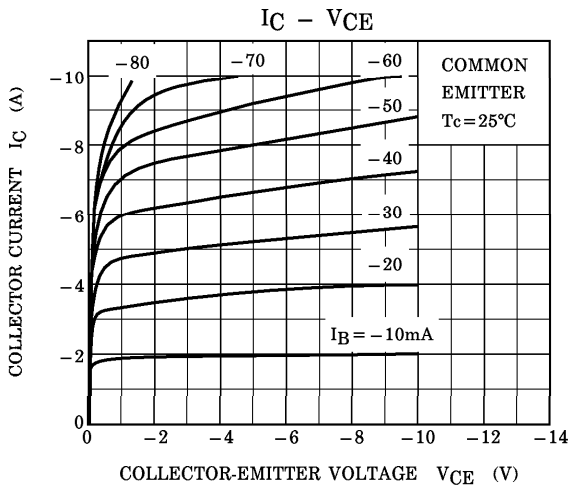


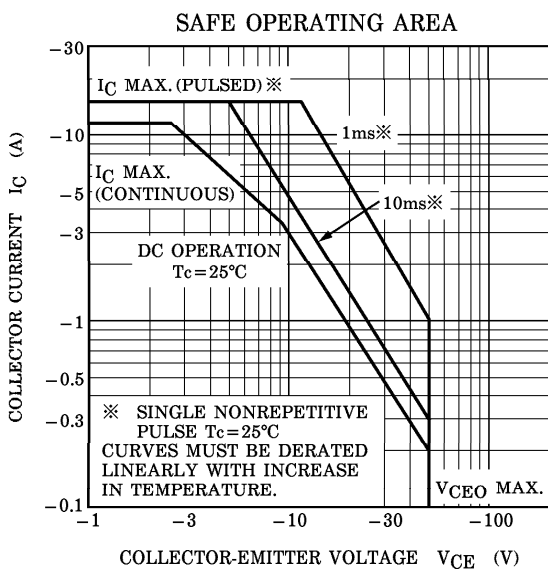
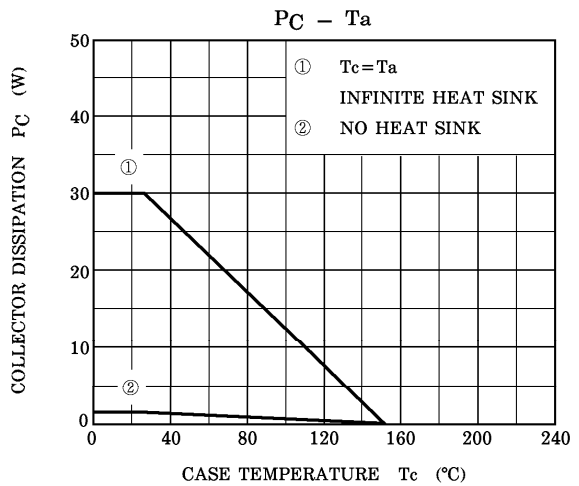
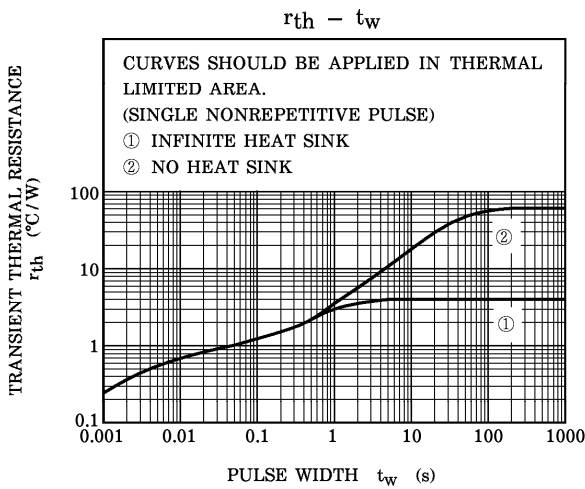
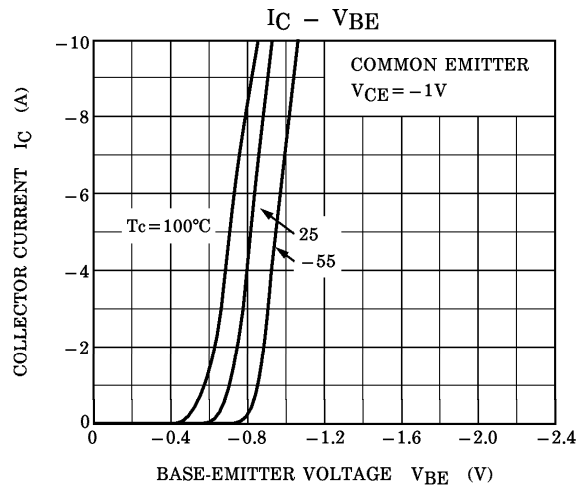
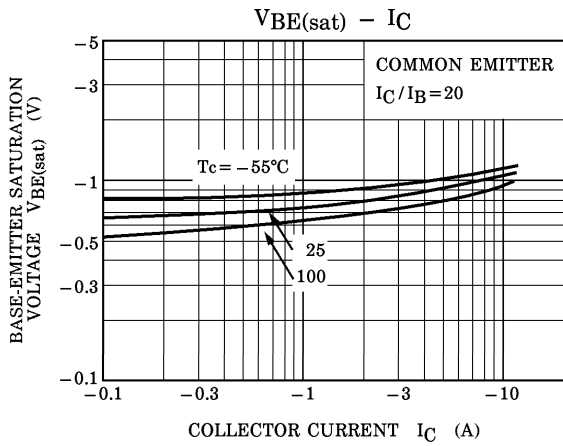
Weight : 1.7g (Typ.)

ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I <sub>CBO</sub>	V <sub>CB</sub> = -60V, I <sub>E</sub> = 0	—	—	-10	μA
Emitter Cut-off Current		I <sub>EBO</sub>	V <sub>EB</sub> = -6V, I <sub>C</sub> = 0	—	—	-10	μA
Collector-Emitter Breakdown Voltage		V <sub>(BR) CEO</sub>	I <sub>C</sub> = -50mA, I <sub>B</sub> = 0	-50	—	—	V
DC Current Gain		h <sub>FE</sub> (1) (Note)	V <sub>CE</sub> = -1V, I <sub>C</sub> = -1A	70	—	240	
		h <sub>FE</sub> (2)	V <sub>CE</sub> = -1V, I <sub>C</sub> = -6A	40	—	—	
Saturation Voltage	Collector-Emitter	V <sub>CE (sat)</sub>	I <sub>C</sub> = -6A, I <sub>B</sub> = -0.3A	—	-0.15	-0.4	V
	Base-Emitter	V <sub>BE (sat)</sub>	I <sub>C</sub> = -6A, I <sub>B</sub> = -0.3A	—	-0.9	-1.2	
Transition Frequency		f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -1A	—	70	—	MHz
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz	—	320	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>	<p> <math>20\mu s</math> INPUT <math>I_{B2}</math> OUTPUT  <math>I_{B1}</math> <math>I_{B2}</math> <math>I_{B1}</math> <math>5\Omega</math>  <math>V_{CC} = -30V</math>  <math>-I_{B1} = I_{B2} = 0.3A</math>  DUTY CYCLE <math>\leq 1\%</math> </p>	—	0.3	—	μs
	Storage Time	t <sub>stg</sub>		—	1.0	—	
	Fall Time	t <sub>f</sub>		—	0.2	—	

(Note) h<sub>FE</sub> (1) Classification    O : 70~140,    Y : 120~240





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