

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3709A

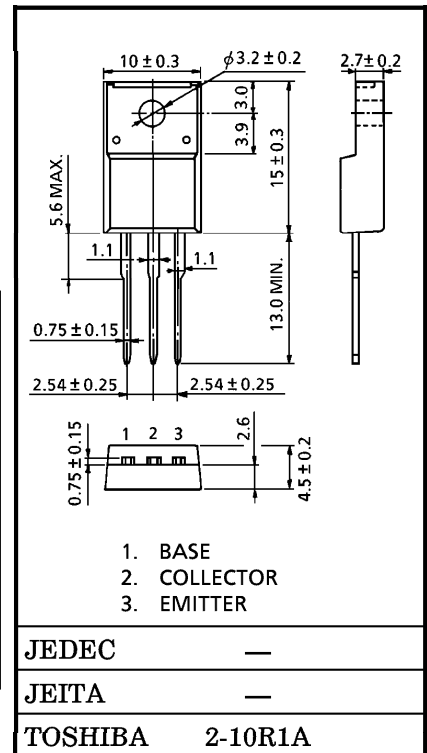
HIGH CURRENT SWITCHING APPLICATIONS

- Low Collector Saturation Voltage : $V_{CE(sat)} = 0.4V$ (Max.)
- High Speed Switching Time : $t_{stg} = 1.0\mu s$ (Typ.)
- Complementary to 2SA1451A

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	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

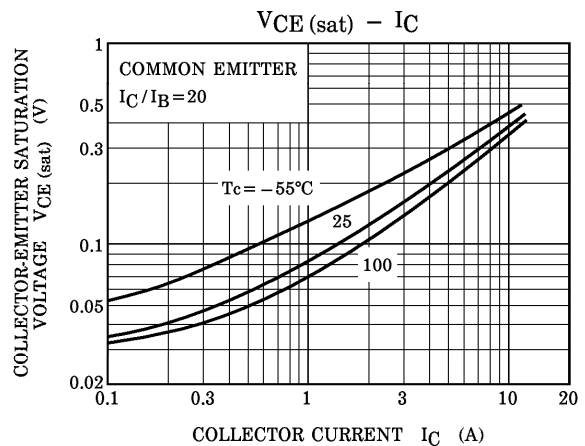
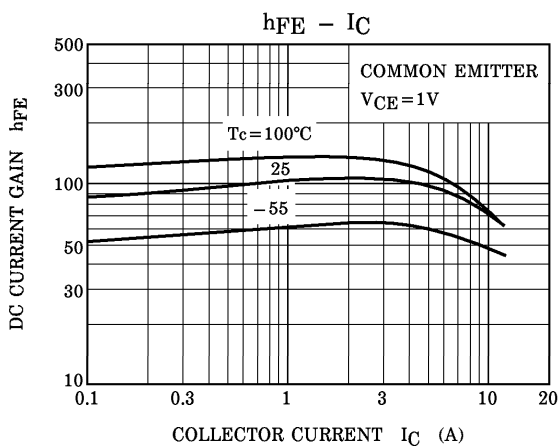
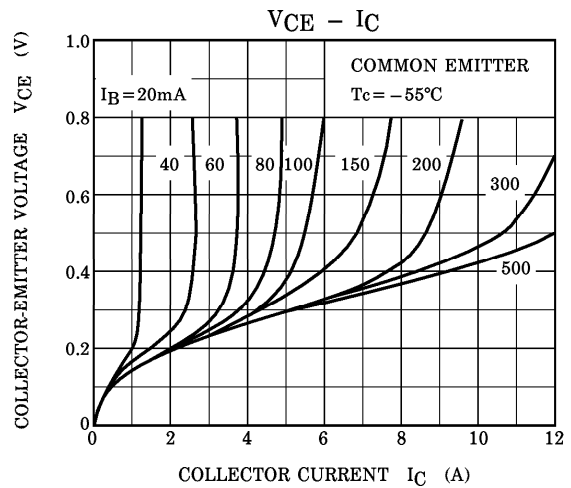
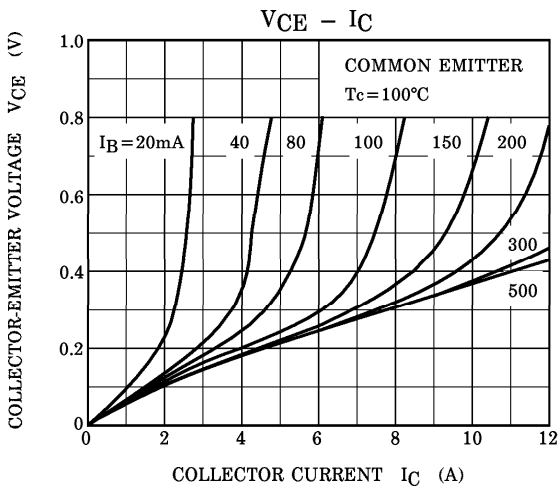
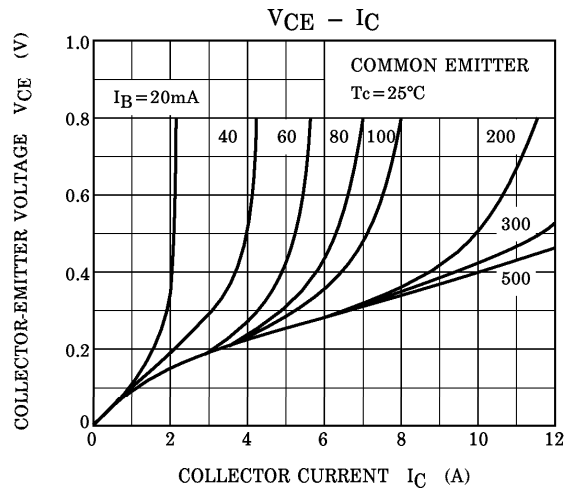
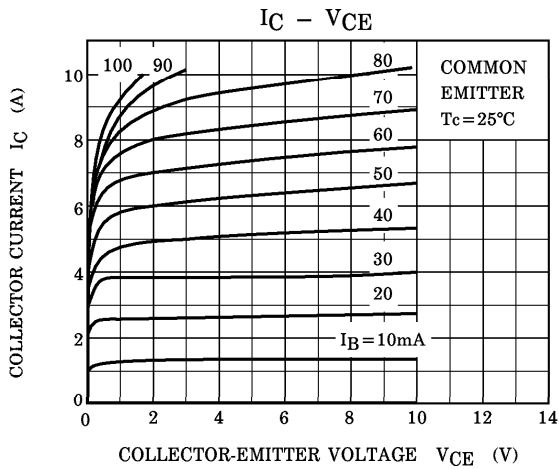


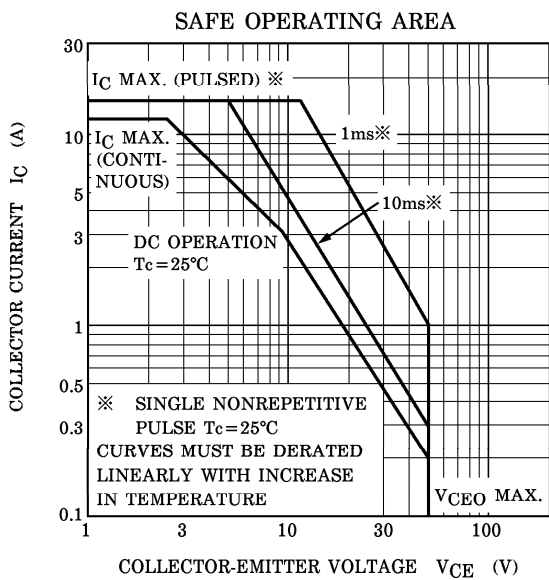
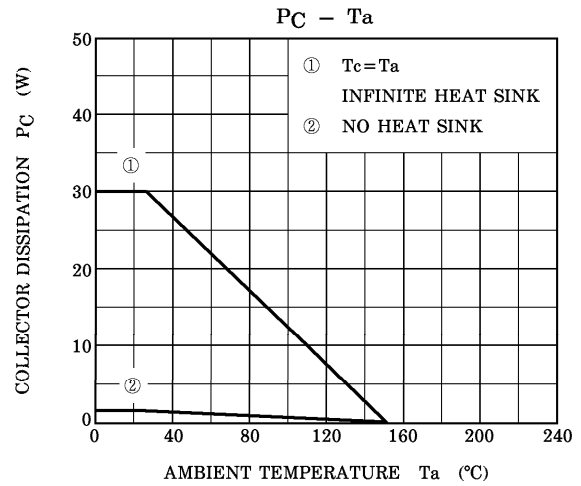
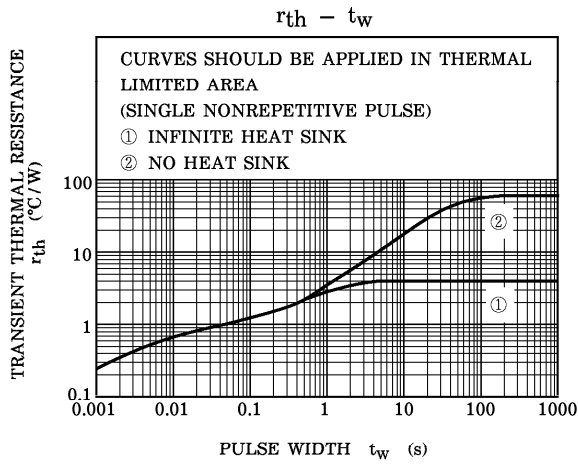
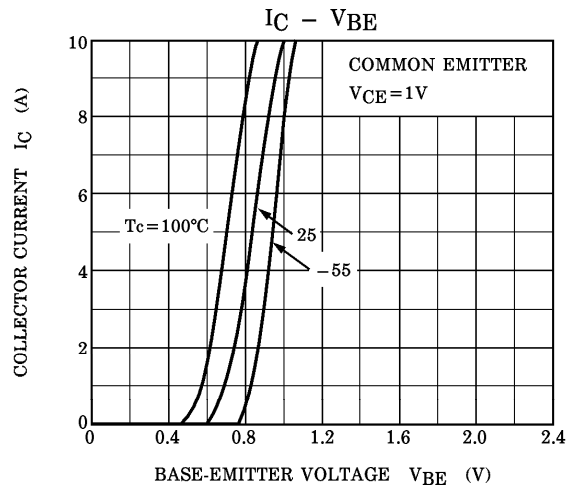
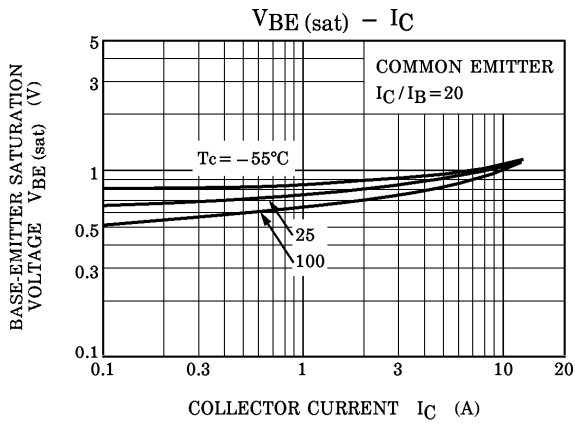
Weight : 1.7g (Typ.)

ELECTRICAL CHARACTERISTICS (T_c = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Collector Cut-off Current	I _{CBO}	V _{CB} = 60V, I _E = 0	—	—	10	μA	
Emitter Cut-off Current	I _{EBO}	V _{EB} = 6V, I _C = 0	—	—	10	μA	
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = 50mA, I _B = 0	50	—	—	V	
DC Current Gain	h _{FE} (1) (Note)	V _{CE} = 1V, I _C = 1A	70	—	240		
	h _{FE} (2)	V _{CE} = 1V, I _C = 6A	40	—	—		
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C = 6A, I _B = 0.3A	—	0.25	0.4	V	
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C = 6A, I _B = 0.3A	—	0.9	1.2	V	
Transition Frequency	f _T	V _{CE} = 5V, I _C = 1A	—	90	—	MHz	
Collector Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	180	—	pF	
Switching Time	Turn-on Time	t _{on}	<p>20 μs I_{B1} INPUT I_{B2} OUTPUT 5 Ω V_{CC} = 30V DUTY CYCLE ≤ 1%</p>	—	0.2	—	μs
	Storage Time	t _{stg}		—	1.0	—	
	Fall Time	t _f		I _{B1} = -I _{B2} = 0.3A, DUTY CYCLE ≤ 1%	—	0.2	

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





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