

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

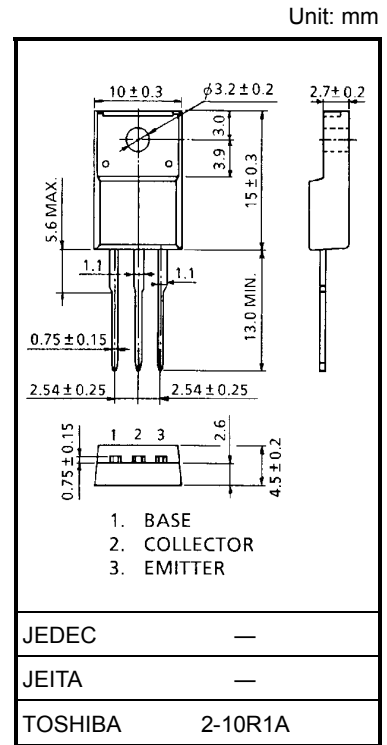
2SC3710A

High-Current Switching Applications

- Low collector saturation voltage: $V_{CE(sat)} = 0.4\text{ V (max)}$
- High-speed switching: $t_{stg} = 1.0\ \mu\text{s (typ.)}$
- Complementary to 2SA1452A

Maximum Ratings (Tc = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	12	A
Base current	I_B	2	A
Collector power dissipation (Tc = 25°C)	P_C	30	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55 to 150	°C



Electrical Characteristics (Tc = 25°C)

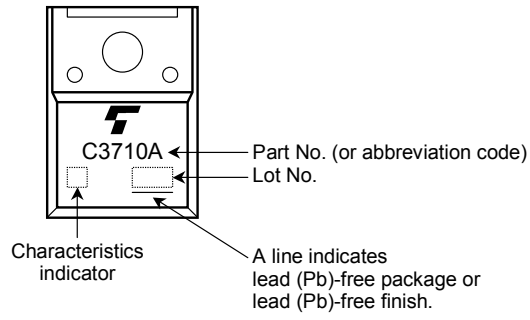
Weight: 1.7 g (typ.)

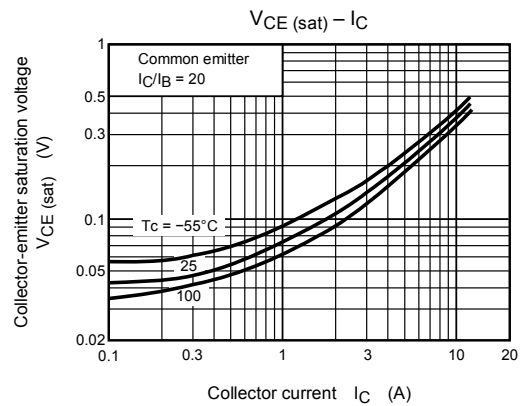
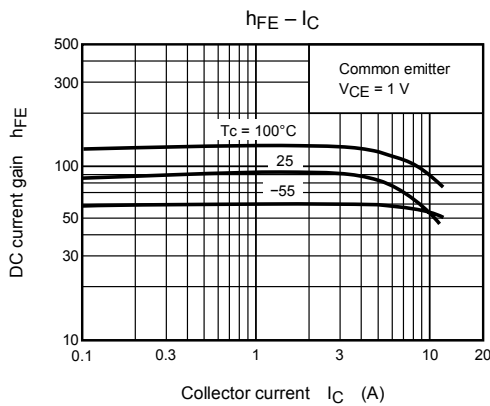
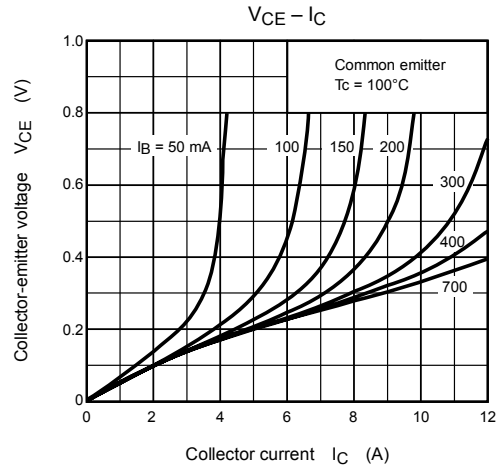
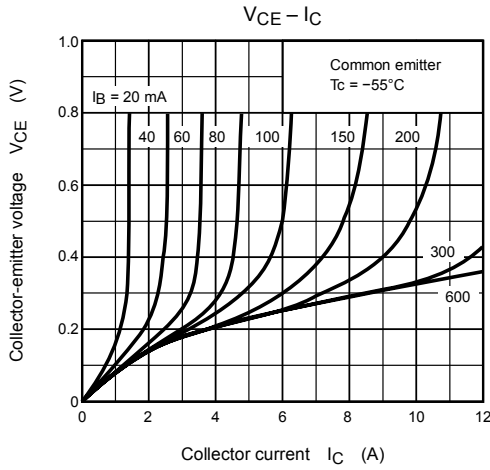
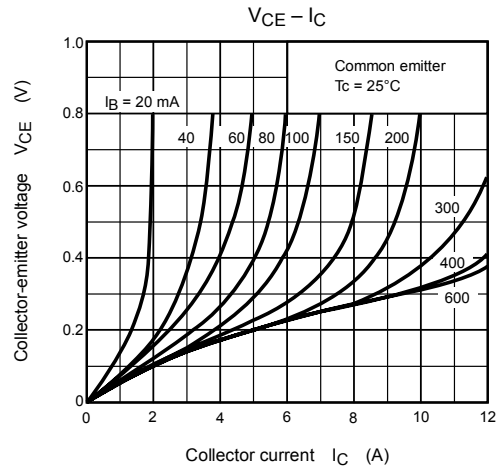
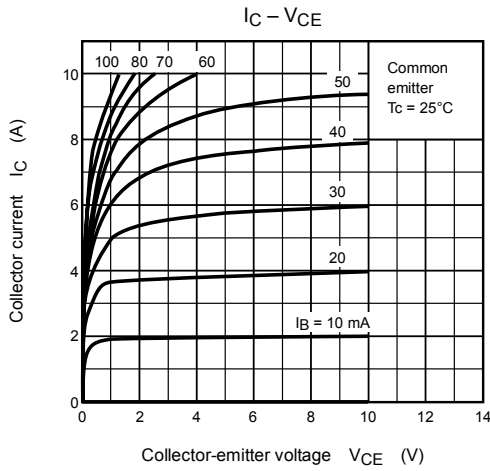
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 80\text{ V}, I_E = 0$	—	—	10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0$	—	—	10	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 50\text{ mA}, I_B = 0$	80	—	—	V
DC current 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	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 6\text{ A}, I_B = 0.3\text{ A}$	—	0.2	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 6\text{ A}, I_B = 0.3\text{ A}$	—	0.9	1.2	V
Transition frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	—	80	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	220	—	pF
Switching time	Turn-on time	t_{on}	—	0.2	—	μs
	Storage time	t_{stg}	—	1.0	—	
	Fall time	t_f	—	0.2	—	

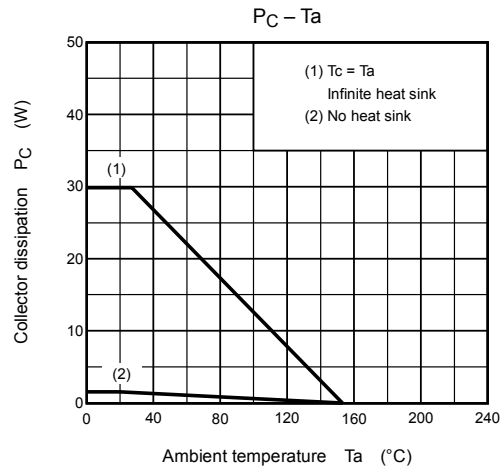
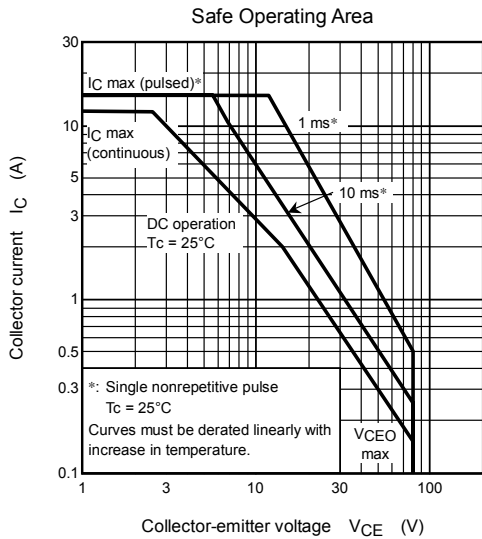
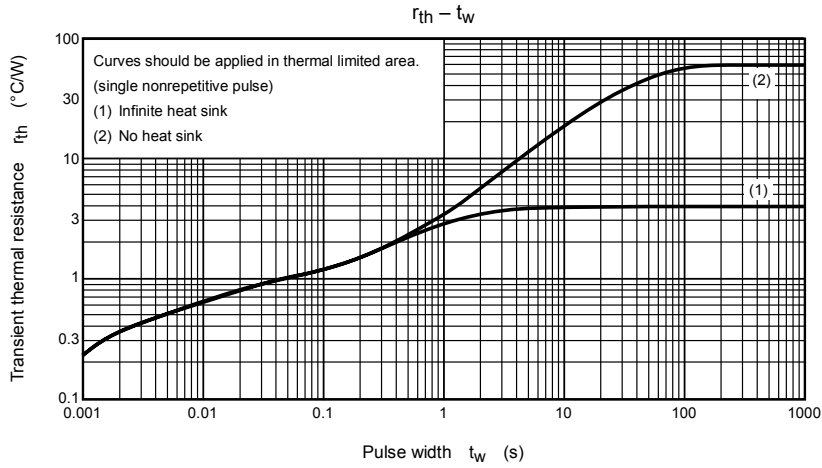
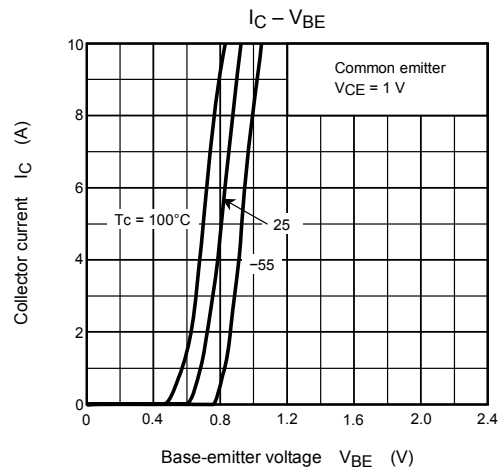
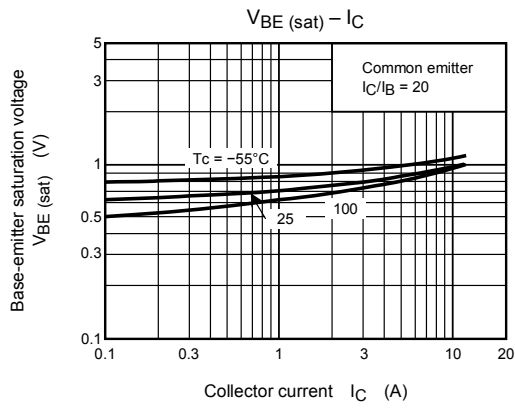
$I_{B1} = -I_{B2} = 0.3\text{ A}, \text{ duty cycle } \leq 1\%$

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

Marking







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