

TOSHIBA Transistor Silicon NPN Triple Diffused Mesa Type

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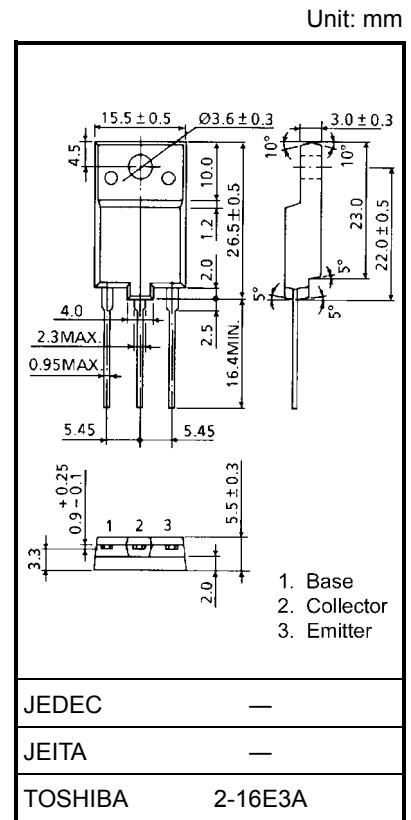
Horizontal Deflection Output for Super High Resolution Display, Color TV, Digital TV.

High Speed Switching Applications.

- High voltage: $V_{CBO} = 1500\text{ V}$
- Low saturation voltage: $V_{CE(sat)} = 3\text{ V (max)}$
- High speed: $t_f(2) = 0.1\text{ }\mu\text{s (typ.)}$

Maximum Ratings ($T_c = 25^\circ\text{C}$)

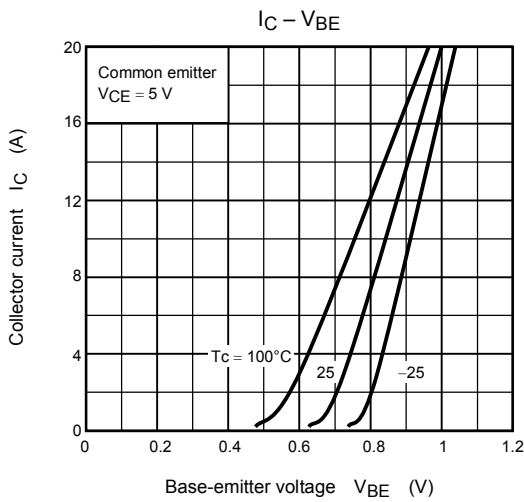
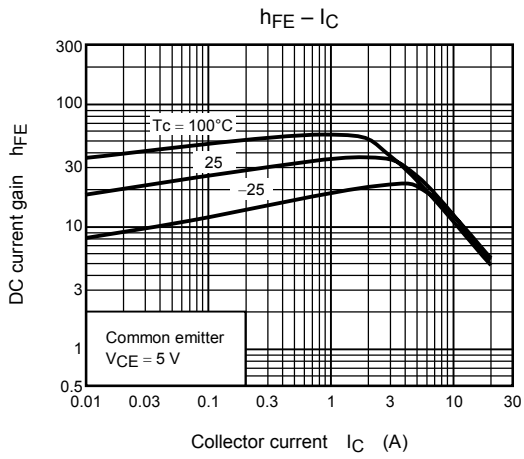
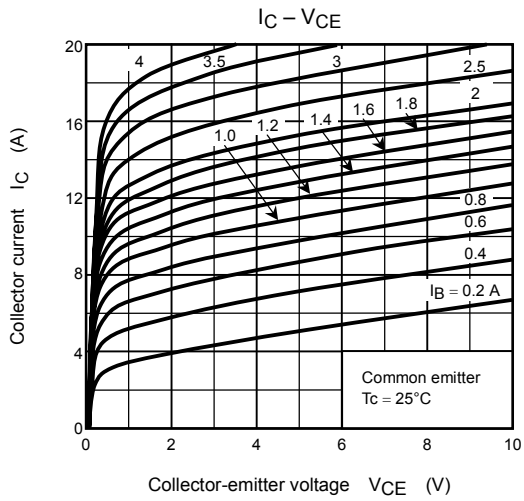
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	1500	V
Collector-emitter voltage		V_{CEO}	700	V
Emitter-base voltage		V_{EBO}	5	V
Collector current	DC	I_C	21	A
	Pulse	I_{CP}	42	
Base current		I_B	10.5	A
Collector power dissipation		P_C	75	W
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55~150	$^\circ\text{C}$

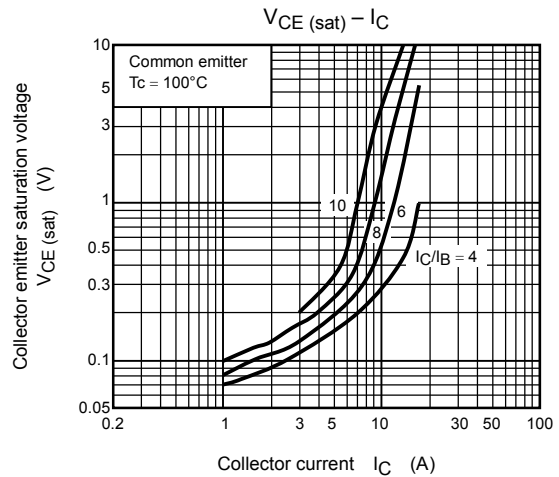
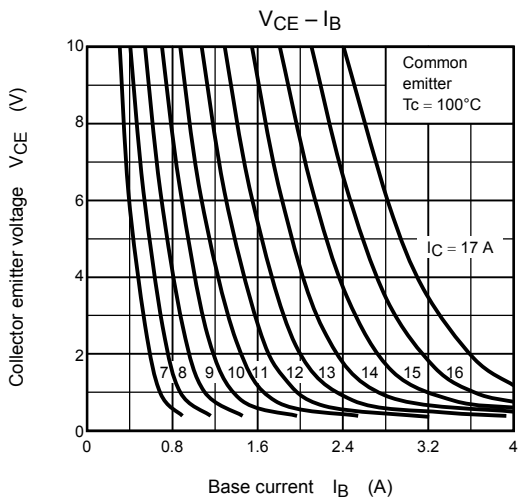
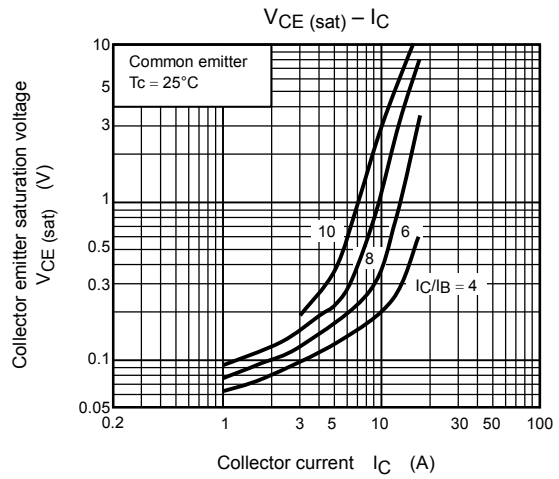
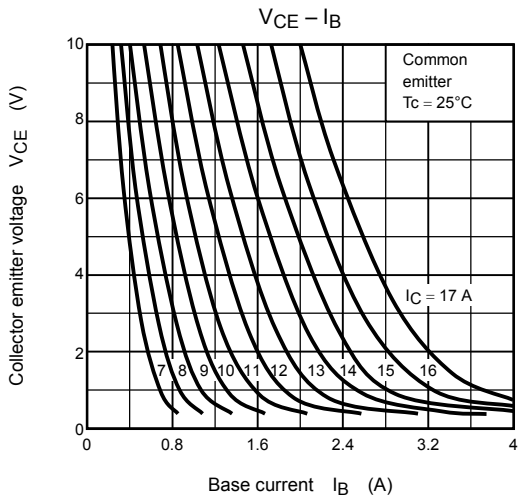
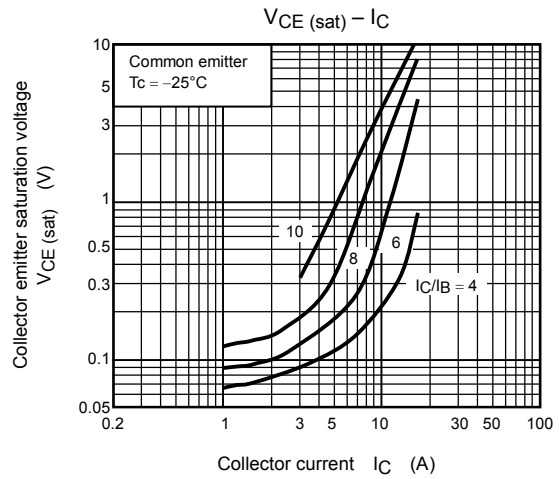
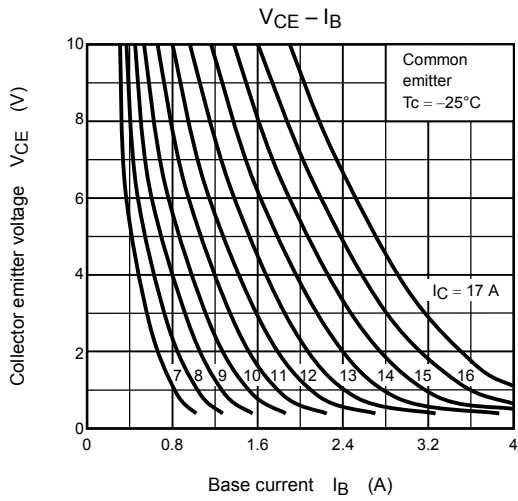


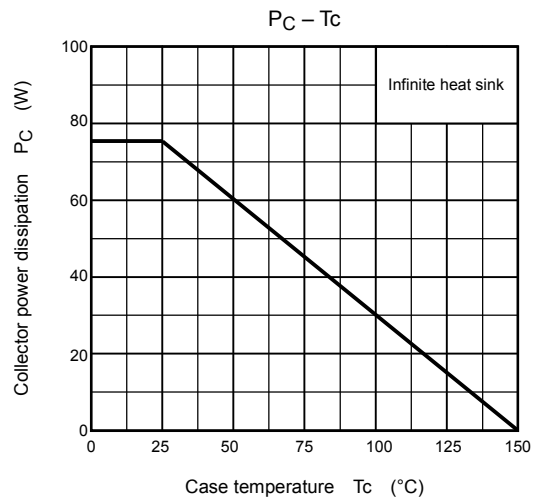
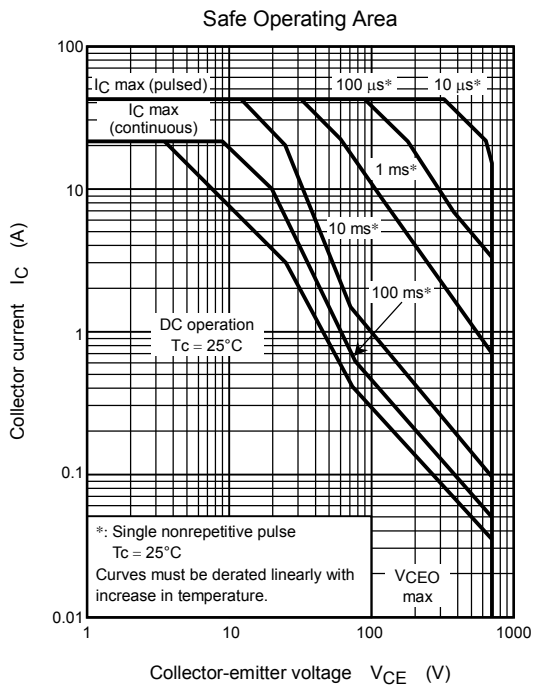
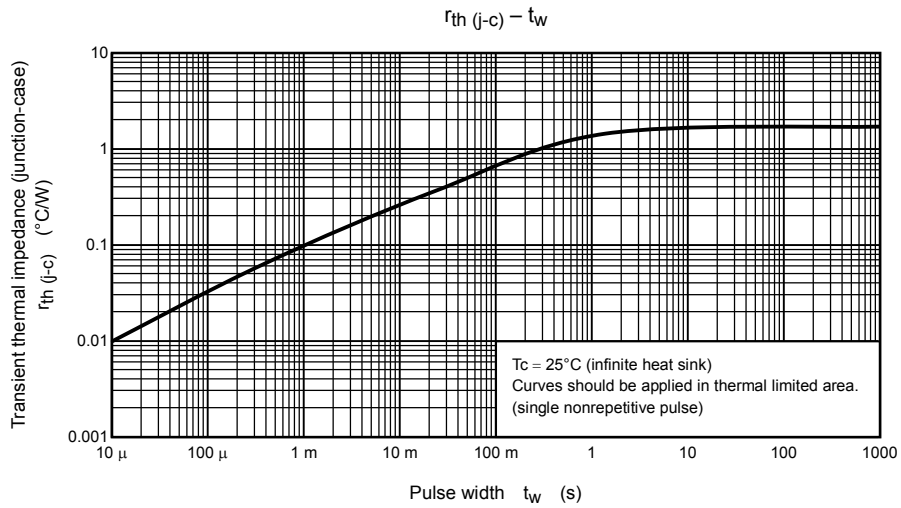
Weight: 5.5 g (typ.)

Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 1500\text{ V}, I_E = 0$	—	—	1	mA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	10	μA
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_E = 10\text{ mA}, I_B = 0$	700	—	—	V
DC current gain	$h_{FE(1)}$	$h_{FE(1)}$	$V_{CE} = 5\text{ V}, I_C = 2\text{ A}$	20	—	50	—
	$h_{FE(2)}$	$h_{FE(2)}$	$V_{CE} = 5\text{ V}, I_C = 10\text{ A}$	8	—	17	
	$h_{FE(3)}$	$h_{FE(3)}$	$V_{CE} = 5\text{ V}, I_C = 17\text{ A}$	4.8	—	8.3	
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = 17\text{ A}, I_B = 4.25\text{ A}$	—	—	3	V
Base-emitter saturation voltage		$V_{BE(sat)}$	$I_C = 17\text{ A}, I_B = 4.25\text{ A}$	—	1.0	1.5	V
Transition frequency		f_T	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$	—	2	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	240	—	pF
Switching time	Storage time	$t_{stg(1)}$	$I_{CP} = 10\text{ A}, I_{B1}(\text{end}) = 1.4\text{ A}, f_H = 64\text{ kHz}$	—	2.5	3	μs
	Fall time	$t_f(1)$		—	0.15	0.3	
	Storage time	$t_{stg(2)}$	$I_{CP} = 8\text{ A}, I_{B1}(\text{end}) = 1.1\text{ A}, f_H = 100\text{ kHz}$	—	1.6	1.8	
	Fall time	$t_f(2)$		—	0.1	0.15	







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