

TOSHIBA Transistor Silicon NPN Triple Diffused Mesa Type

2SD2638

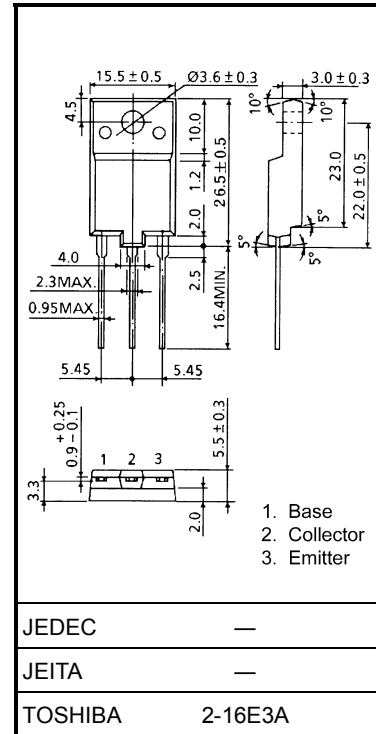
Horizontal Deflection Output for Color TV, Digital TV
High Speed Switching Applications

Unit: mm

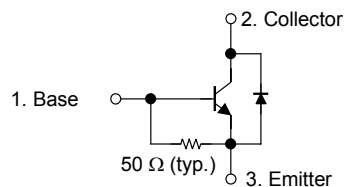
- High voltage: $V_{CBO} = 1700\text{ V}$
- Low saturation voltage: $V_{CE(sat)} = 5\text{ V (max)}$
- High speed: $t_f = 0.8\text{ }\mu\text{s (max)}$

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

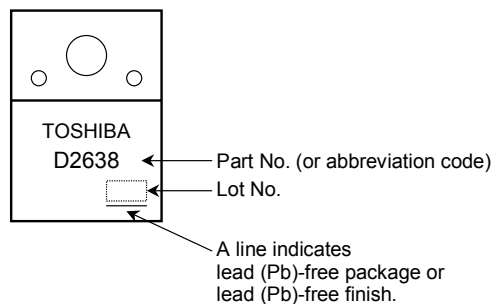
Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	1700	V
Collector-emitter voltage		V_{CEO}	750	V
Emitter-base voltage		V_{EBO}	5	V
Collector current	DC	I_C	7	A
	Pulse	I_{CP}	14	
Base current		I_B	3.5	A
Collector power dissipation		P_C	50	W
Junction temperature		T_j	150	$^\circ\text{C}$
Storage temperature range		T_{stg}	-55~150	$^\circ\text{C}$



Equivalent Circuit

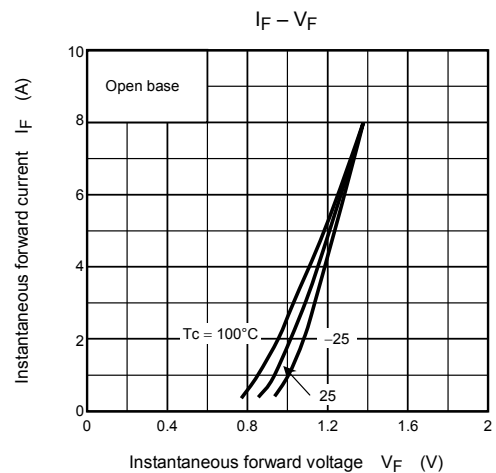
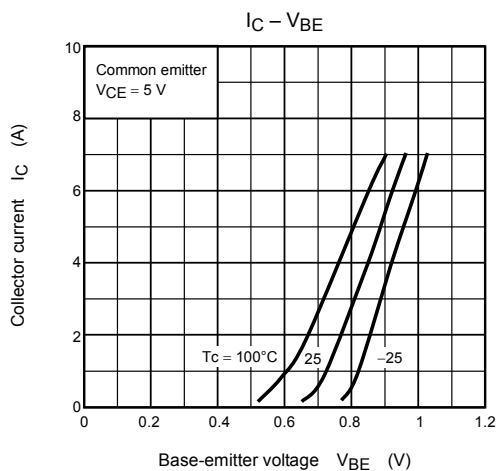
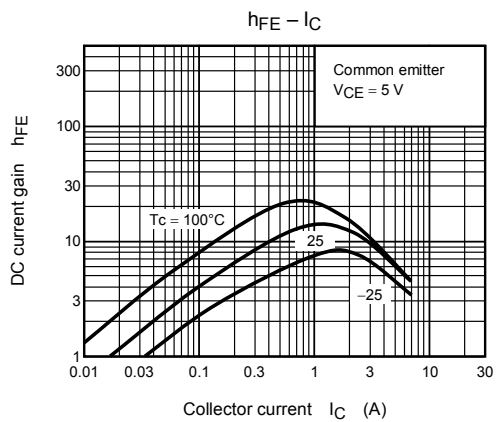
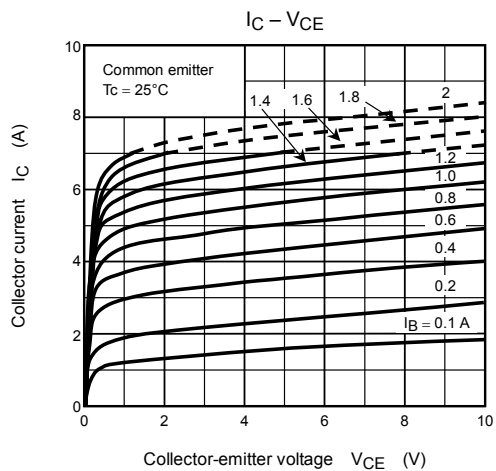


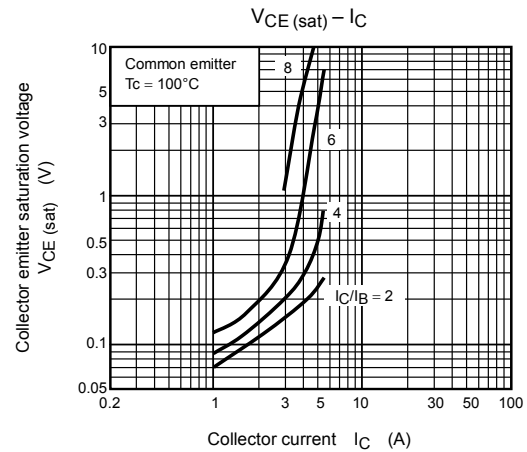
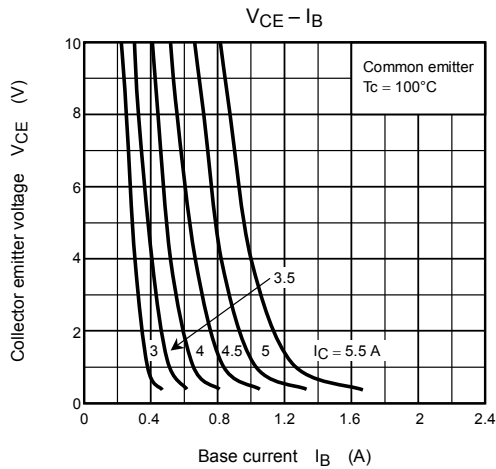
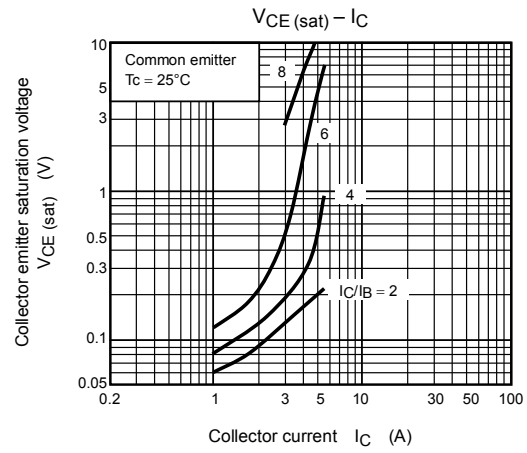
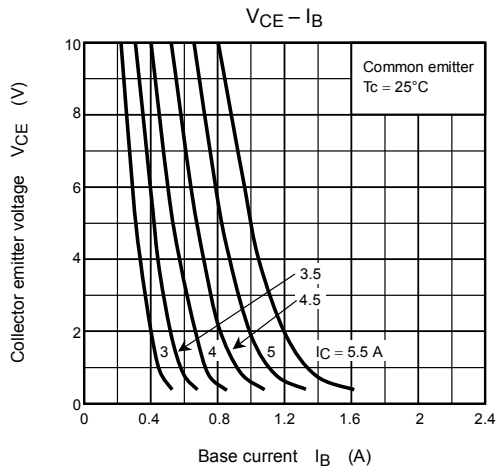
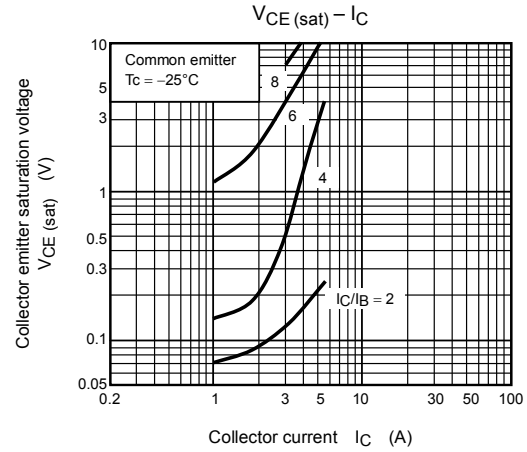
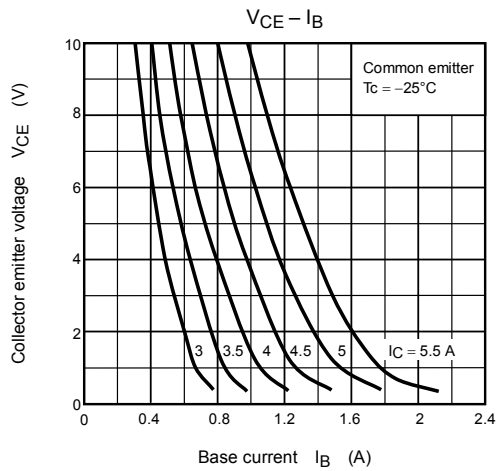
Marking

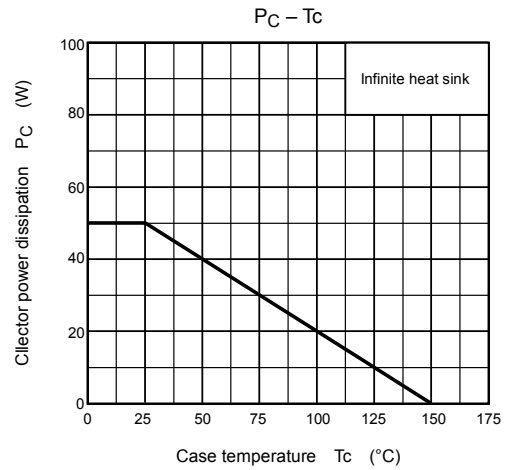
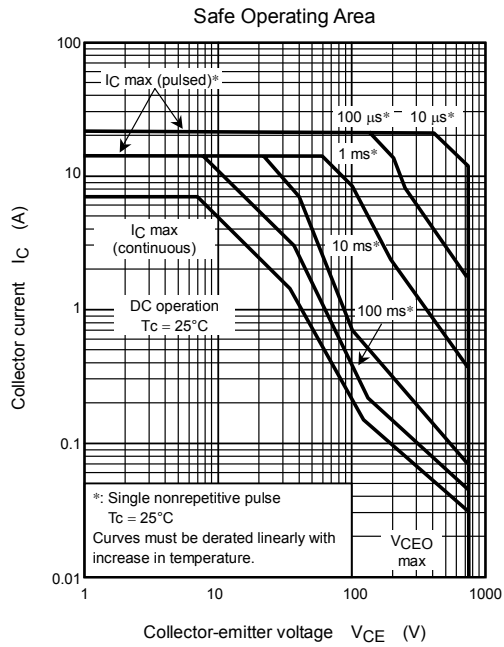
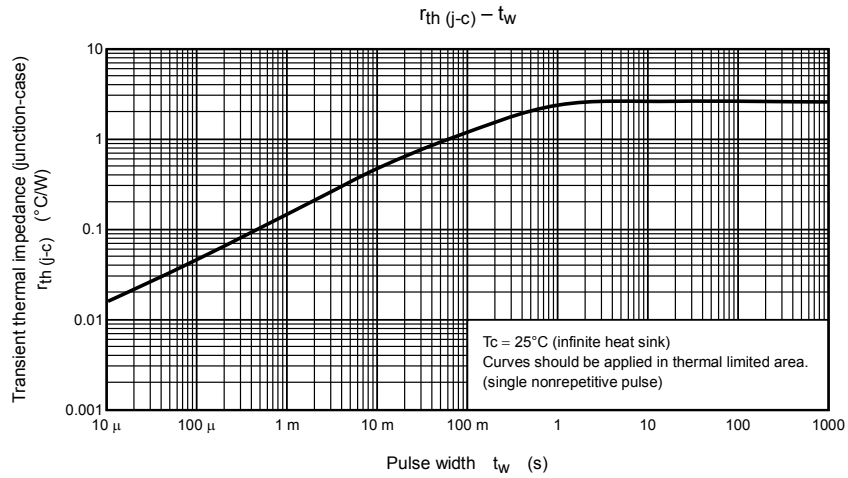


Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 1700 \text{ V}, I_E = 0$	—	—	1	mA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	66	—	200	mA
Emitter-base breakdown voltage		$V_{(BR) EBO}$	$I_E = 400 \text{ mA}, I_C = 0$	5	—	—	V
DC current gain		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	8	—	25	
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 5.5 \text{ A}$	4.5	—	7.5	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 5.5 \text{ A}, I_B = 1.2 \text{ A}$	—	—	5	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 5.5 \text{ A}, I_B = 1.2 \text{ A}$	—	1.0	1.5	V
Forward voltage (damper diode)		V_F	$I_F = 7 \text{ A}$	—	1.3	2	V
Transition frequency		f_T	$V_{CE} = 10 \text{ V}, I_C = 0.1 \text{ A}$	—	2	—	MHz
Collector output capacitance		C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	125	—	pF
Switching time	Storage time	t_{stg}	$I_{CP} = 5.5 \text{ A}, I_{B1 (end)} = 1.1 \text{ A},$ $f_H = 15.75 \text{ kHz}$	—	7	9	μs
	Fall time	t_f		—	0.4	0.8	







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