

TOSHIBA Transistor Silicon NPN Triple Diffused Mesa Type

2SD2559

Horizontal Deflection Output for Color TV

- High voltage: VCBO = 1500 V
- Low saturation voltage: $V_{CE(sat)} = 5 \text{ V (max)}$
- Built-in damper type
- Collector metal (fin) is fully covered with mold resin.

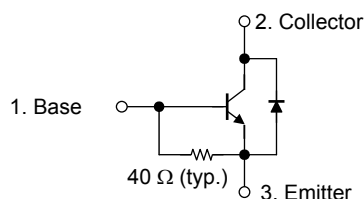
Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CB0}	1500	V
Collector-emitter voltage		V_{CEO}	600	V
Emitter-base voltage		V_{EB0}	5	V
Collector current	DC	I_C	8	A
	Pulse	I_{CP}	16	
Base current		I_B	4	A
Collector power dissipation		P_C	50	W
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	−55~150	°C

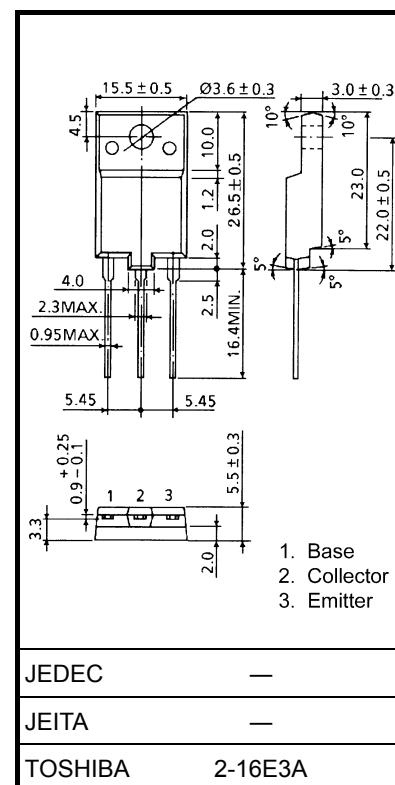
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Equivalent Circuit



Unit: mm

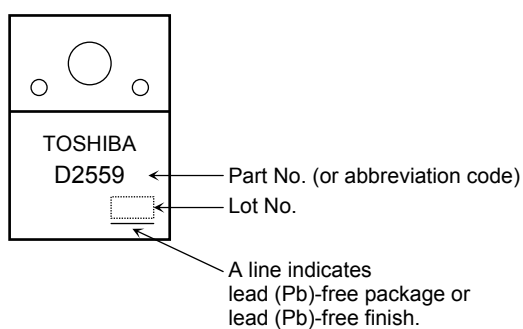


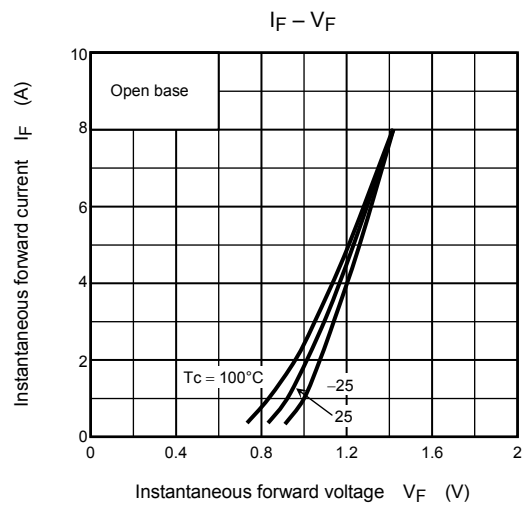
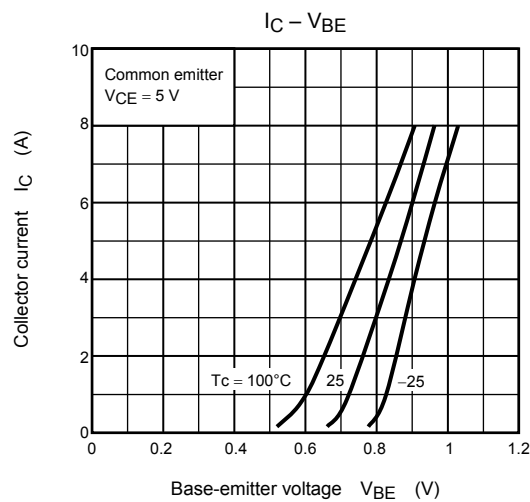
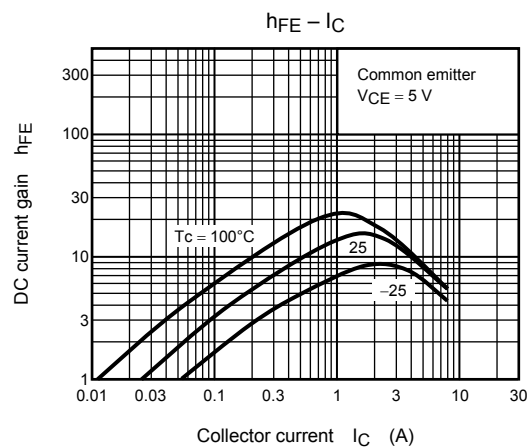
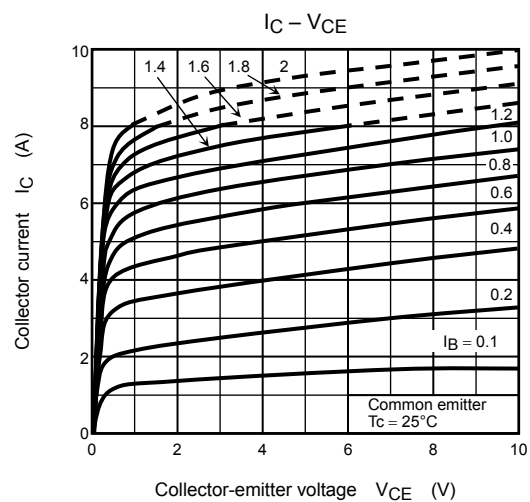
Weight: 5.5 g (typ.)

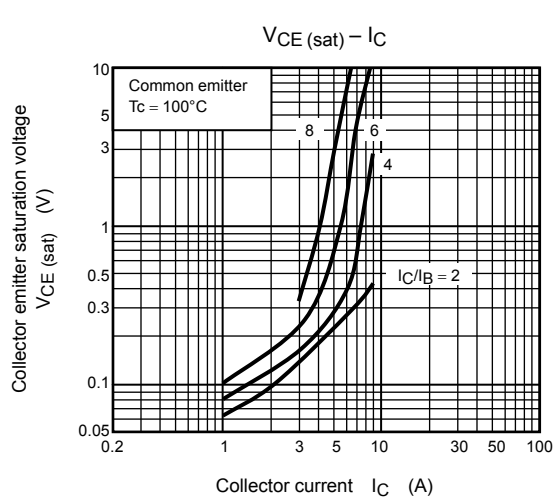
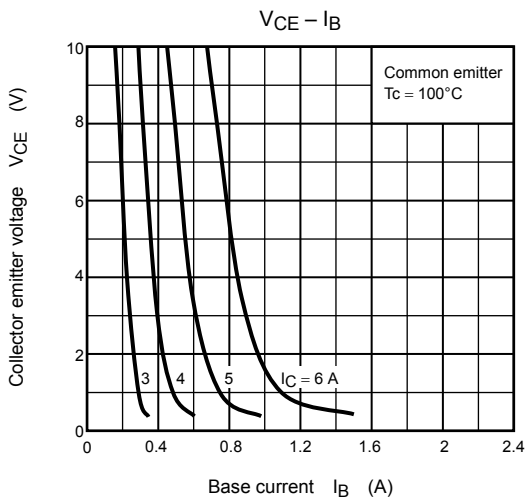
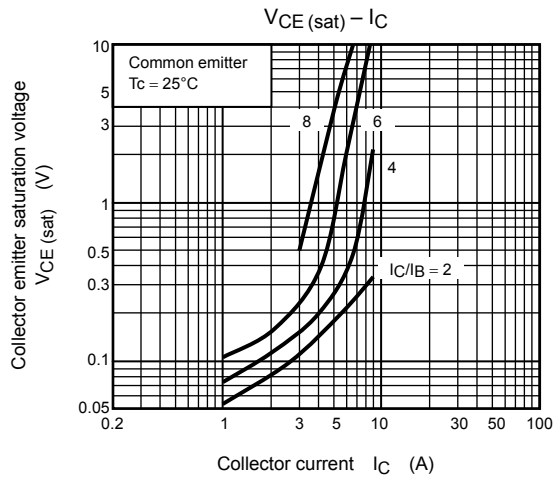
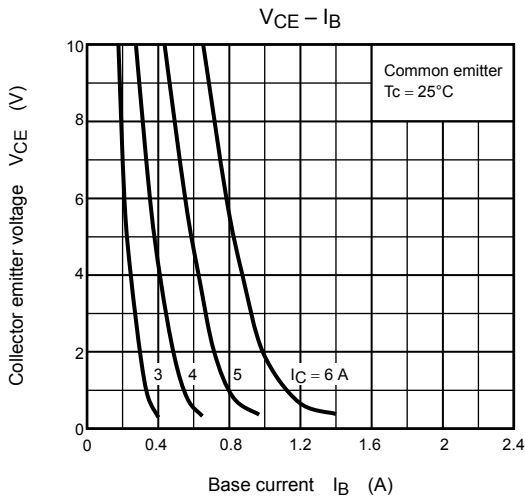
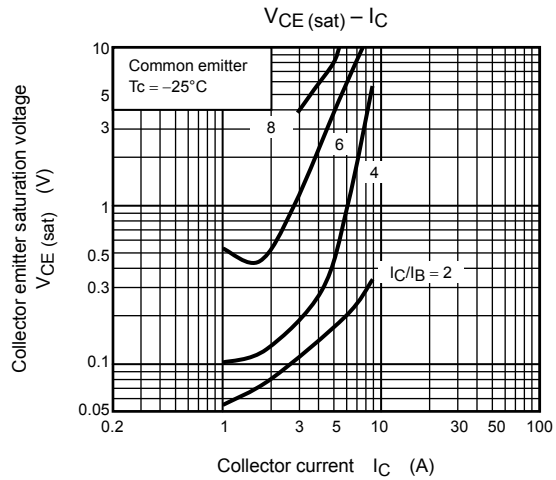
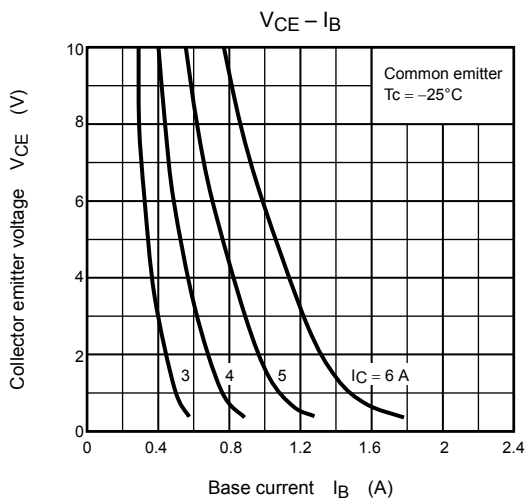
Electrical Characteristics (Tc = 25°C)

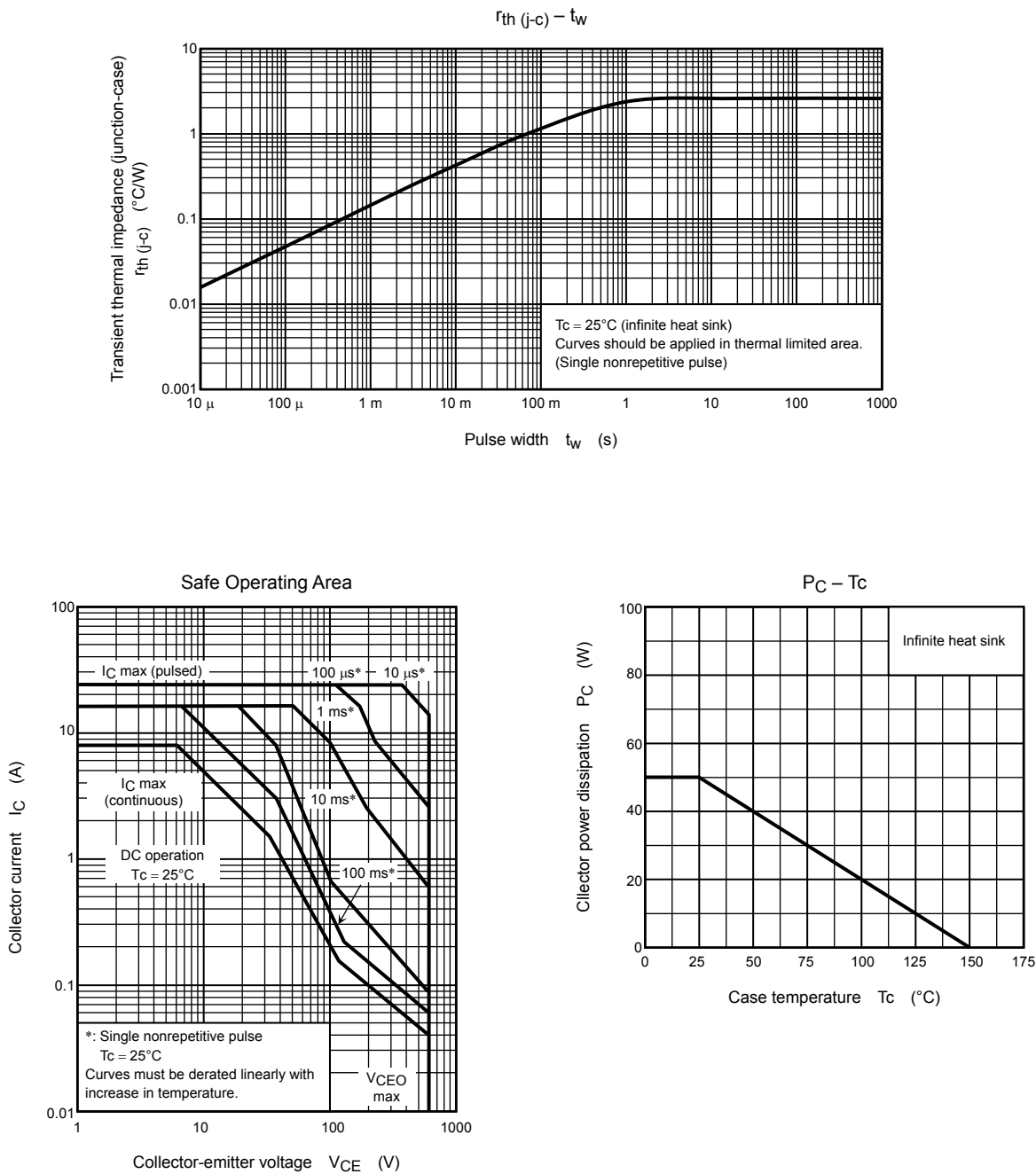
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 1500 \text{ V}, I_E = 0$	—	—	1	mA
Emitter cut-off current		I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$	83	—	250	mA
Emitter-base breakdown voltage		$V_{(BR) EBO}$	$I_E = 300 \text{ mA}, I_B = 0$	5	—	—	V
DC current gain		$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	10	—	30	—
		$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 6 \text{ A}$	5	—	9	
Collector-emitter saturation voltage		$V_{CE (sat)}$	$I_C = 6 \text{ A}, I_B = 1.2 \text{ A}$	—	—	5	V
Base-emitter saturation voltage		$V_{BE (sat)}$	$I_C = 6 \text{ A}, I_B = 1.2 \text{ A}$	—	—	1.5	V
Forward voltage (damper diode)		V_F	$I_F = 6 \text{ A}$	—	—	1.8	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}	$I_{CP} = 6 \text{ A}, I_{B1 (end)} = 1.2 \text{ A},$ $f_H = 15.75 \text{ kHz}$	—	6	8.5	μs
	Fall time	t_f		—	0.4	0.7	

Marking









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20070701-EN

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