

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SD2553

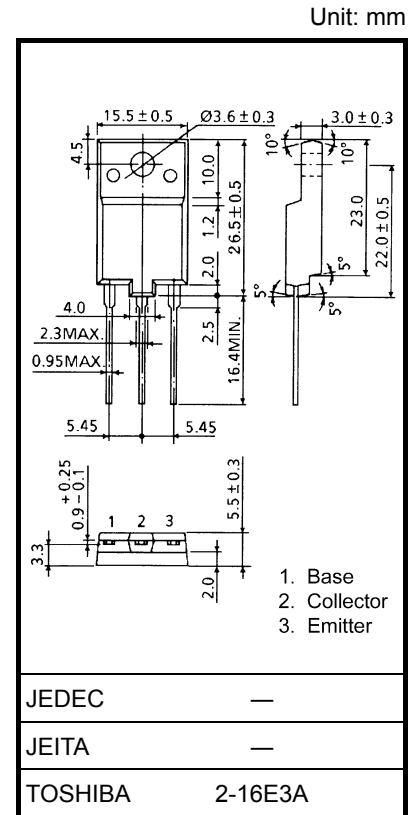
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : $V_{CB0} = 1700\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = 5\text{ V (Max.)}$
- High Speed : $t_f = 0.3\ \mu\text{s (Typ.)}$
- Built-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CB0}	1700	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	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$

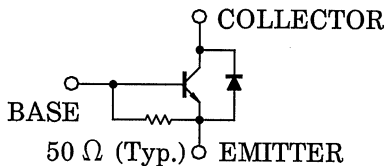


Weight: 5.5 g (typ.)

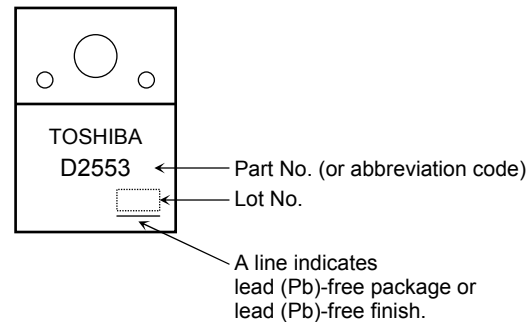
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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



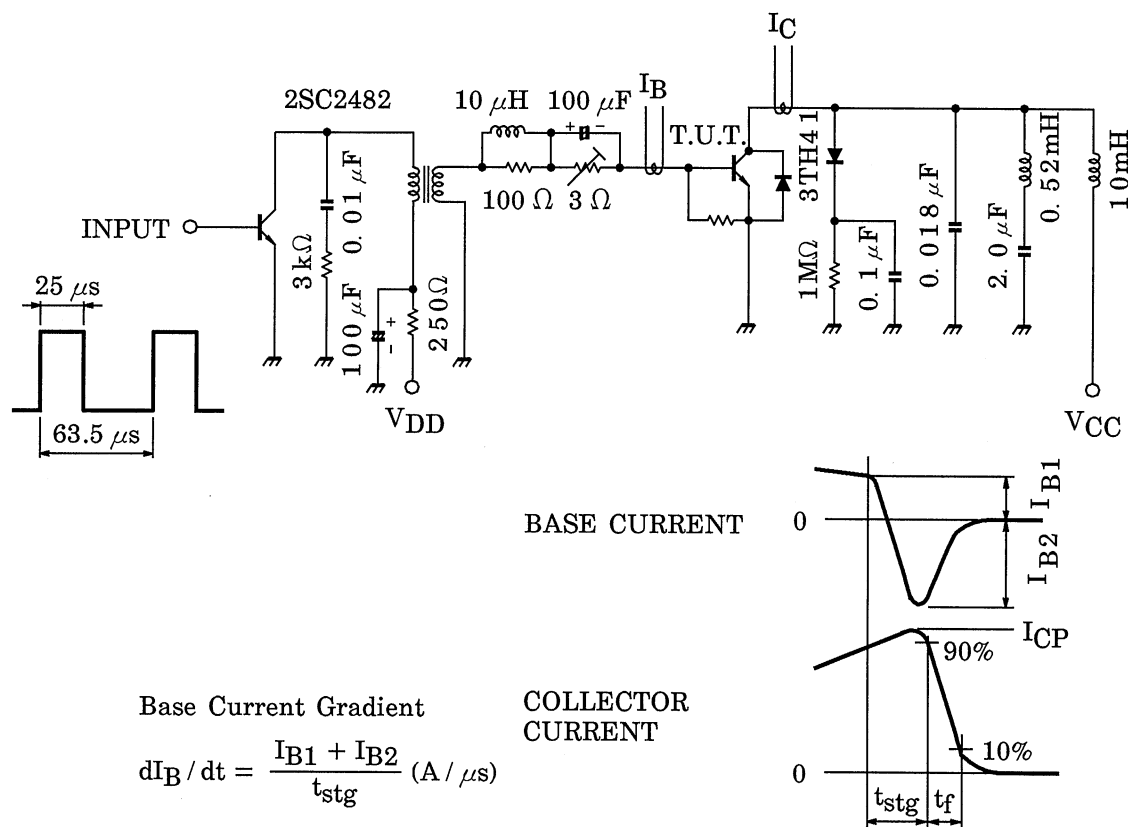
MARKING

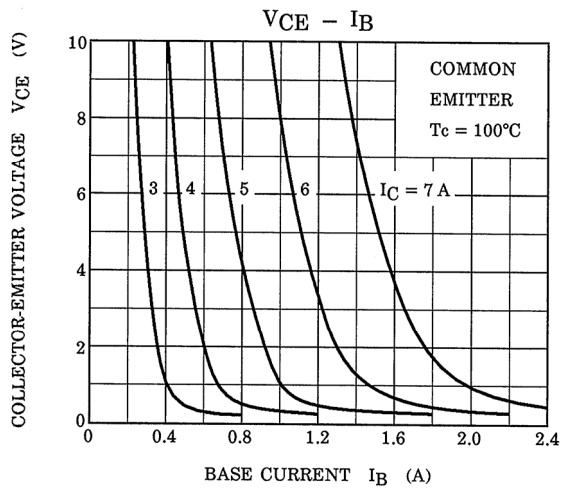
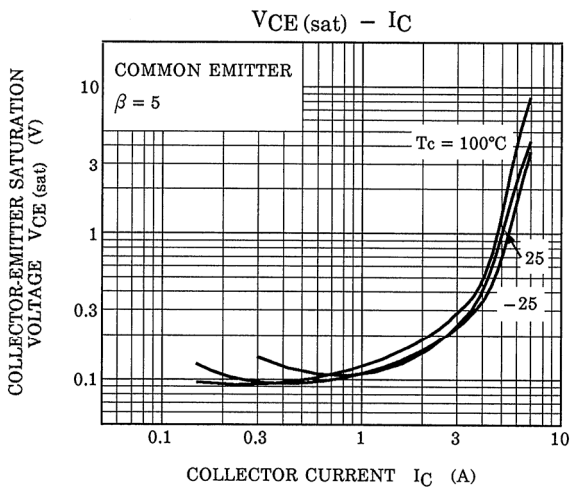
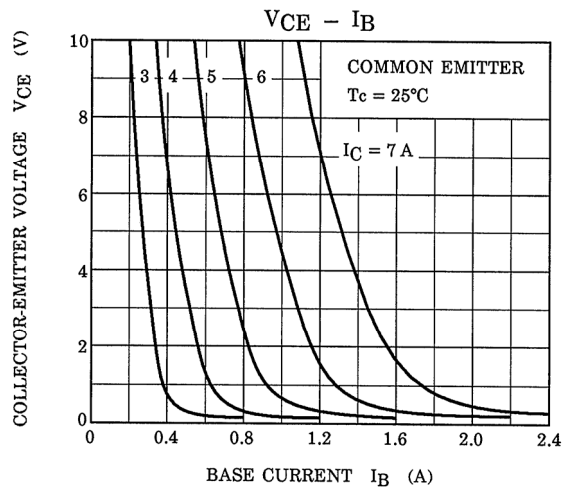
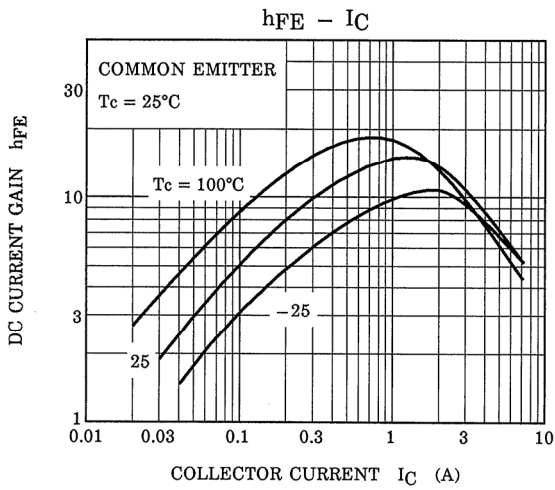
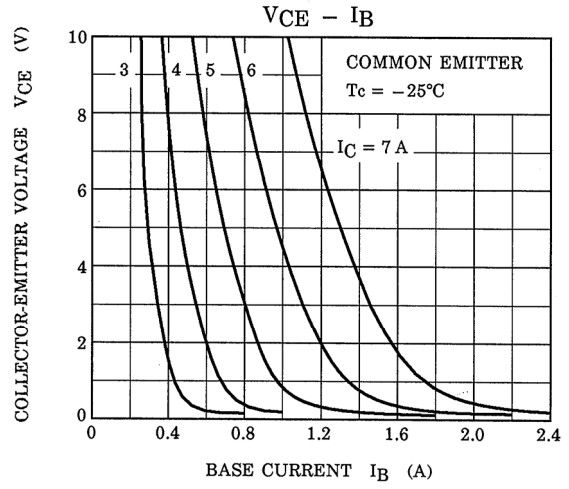
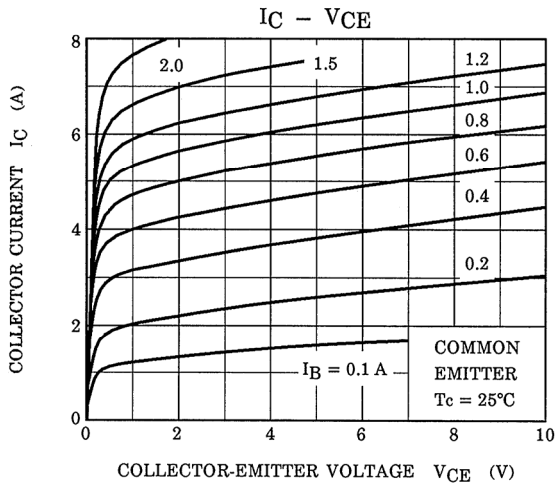


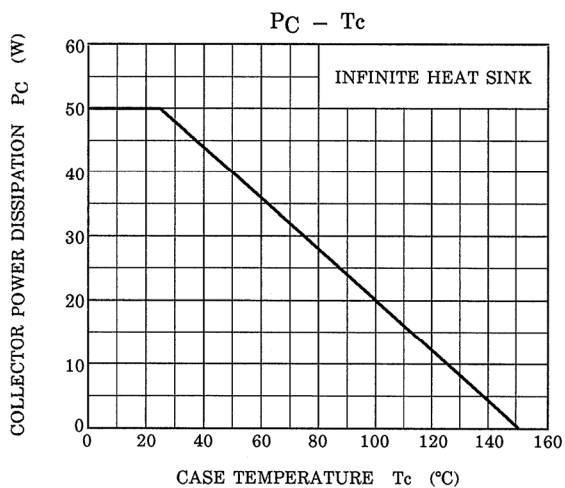
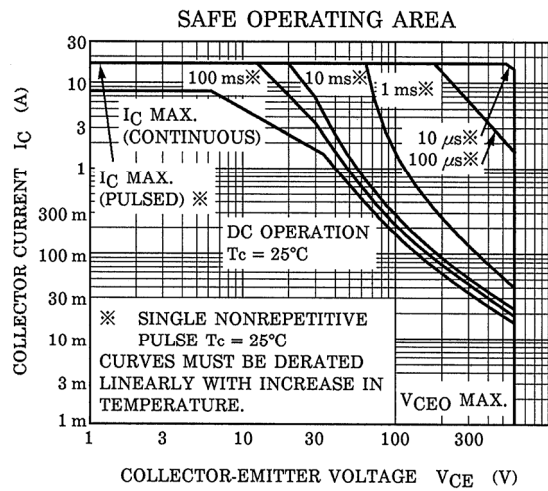
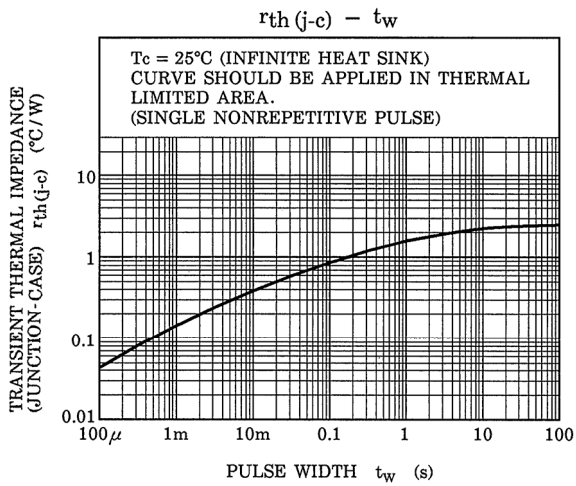
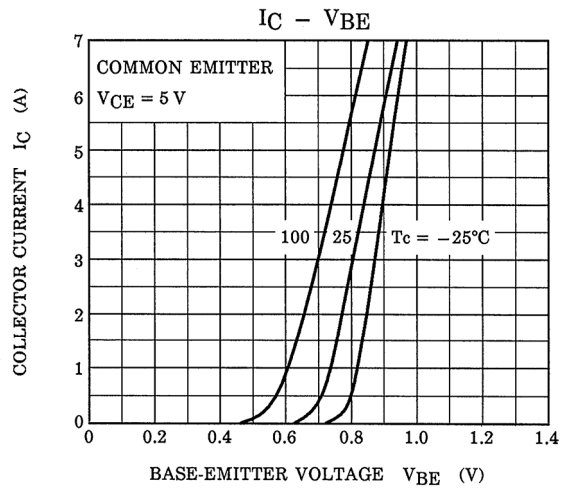
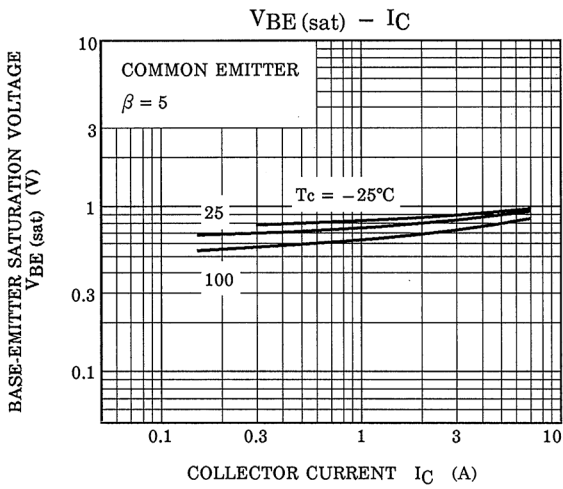
ELECTRICAL CHARACTERISTICS (T_c = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Collector Cut-off Current		I _{CBO}	V _{CB} = 1700 V, I _E = 0	—	—	1	mA
Emitter Cut-off Current		I _{EBO}	V _{EB} = 5 V, I _C = 0	66	—	200	mA
Emitter-Base Breakdown Voltage		V _{(BR) EBO}	I _C = 400 mA, I _E = 0	5	—	—	V
DC Current Gain		h _{FE} (1)	V _{CE} = 5 V, I _C = 1 A	8	—	28	—
		h _{FE} (2)	V _{CE} = 5 V, I _C = 6 A	5	—	9	
Collector-Emitter Saturation Voltage		V _{CE (sat)}	I _C = 6 A, I _B = 1.2 A	—	—	5	V
Base-Emitter Saturation Voltage		V _{BE (sat)}	I _C = 6 A, I _B = 1.2 A	—	0.9	1.2	V
Forward Voltage (Damper Diode)		V _F	I _F = 8 A	—	1.6	2.0	V
Transition Frequency		f _T	V _{CE} = 10 V, I _C = 0.1 A	—	2	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	—	155	—	pF
Switching Time (Fig. 1)	Storage Time	t _{stg}	I _{CP} = 6 A, I _{B1} (end) = 1.5 A f _H = 15.75 kHz	—	9	12	μs
	Fall Time	t _f		—	0.3	0.7	

Fig.1 SWITCHING TIME TEST CIRCUIT







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20070701-EN

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