

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

**2SC5404**HORIZONTAL DEFLECTION OUTPUT FOR HIGH  
RESOLUTION

Unit: mm

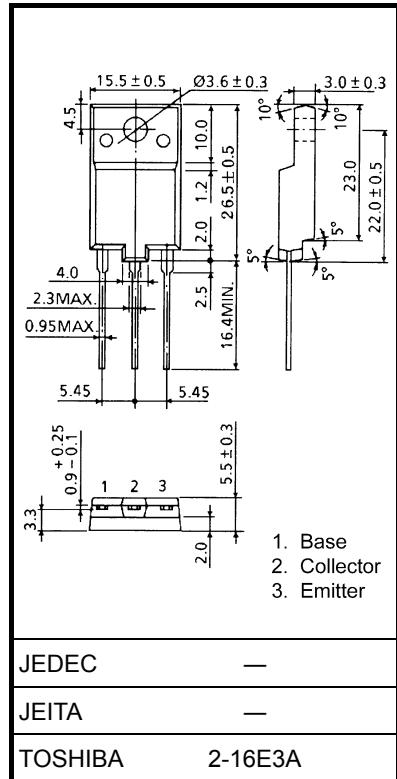
DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage :  $V_{CBO} = 1500$  V
- Low Saturation Voltage :  $V_{CE}(\text{sat}) = 3$  V (Max.)
- High Speed :  $t_f = 0.15$   $\mu$ s (Typ.)
- 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	$V_{CBO}$	1500	V
Collector-Emitter Voltage	$V_{CEO}$	600	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	DC	$I_C$	A
	Pulse	$I_{CP}$	
Base Current	$I_B$	4.5	A
Collector Power Dissipation	$P_C$	50	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ\text{C}$



Weight: 5.5 g (typ.)

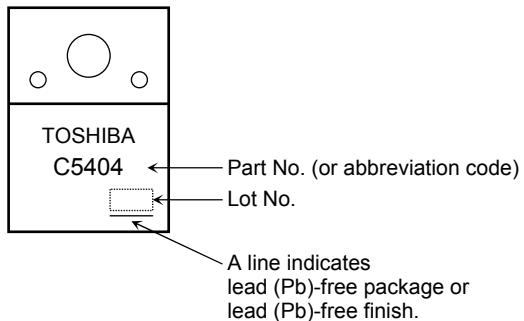
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

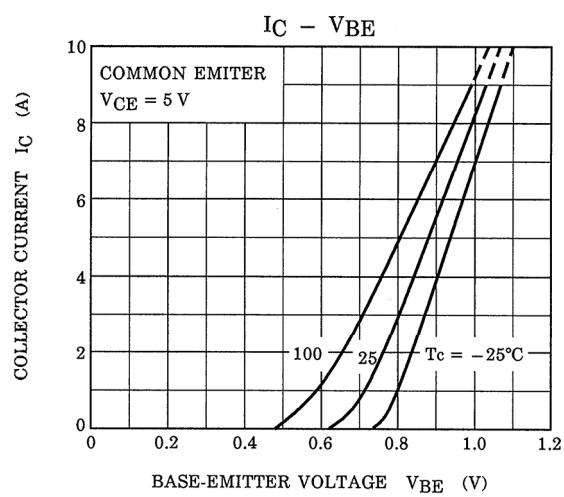
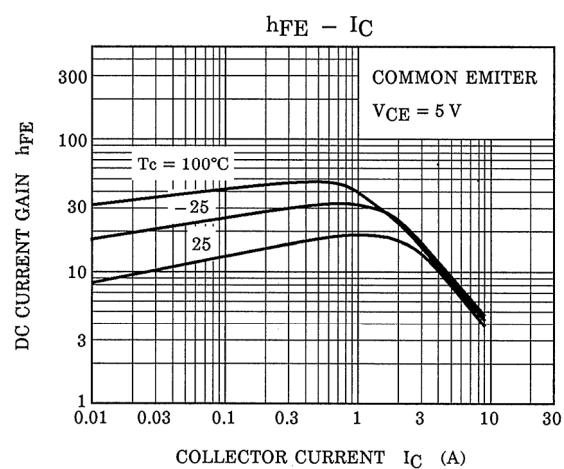
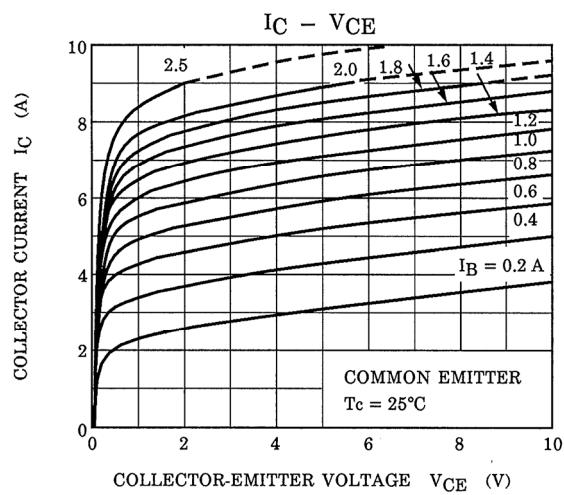
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc.).

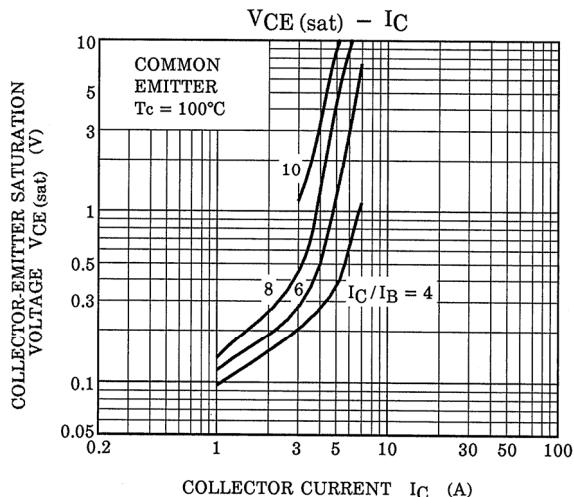
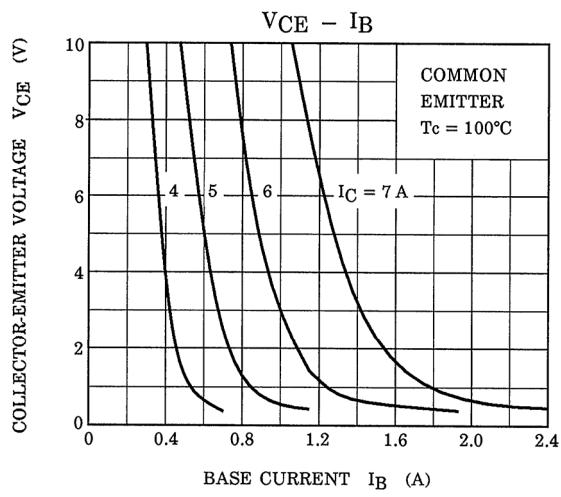
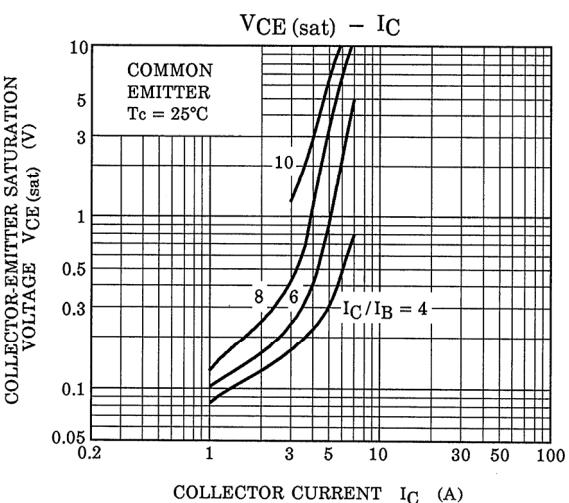
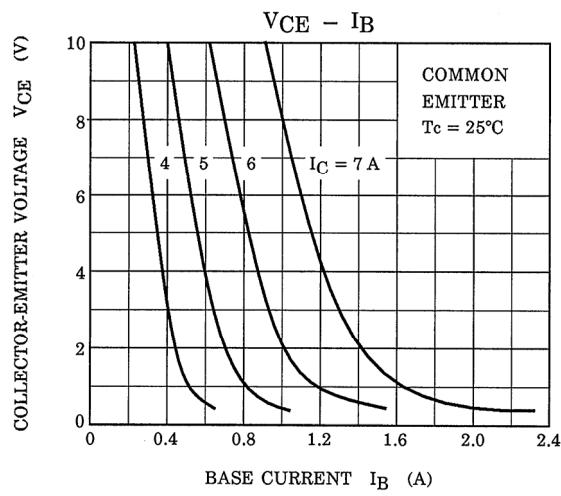
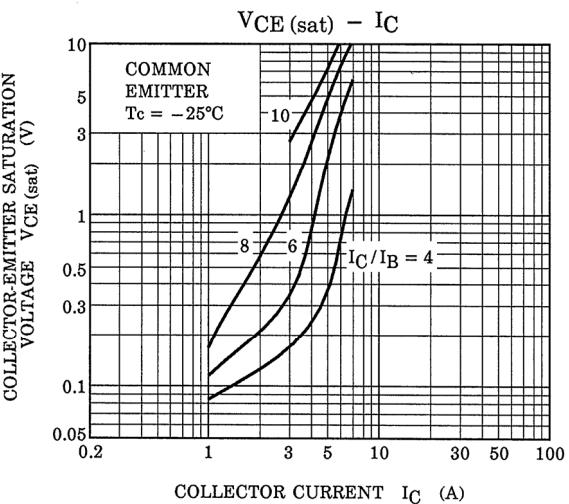
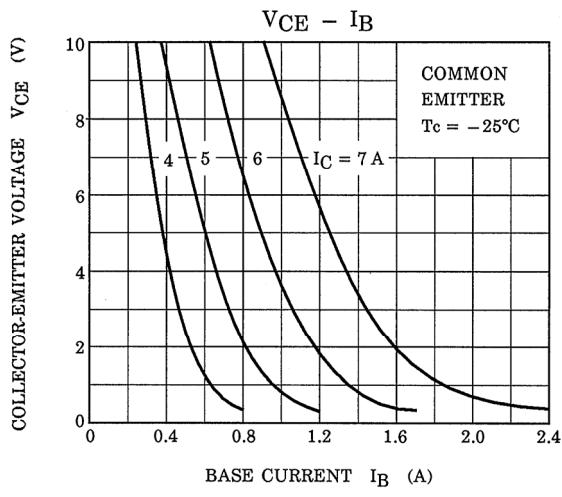
ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)

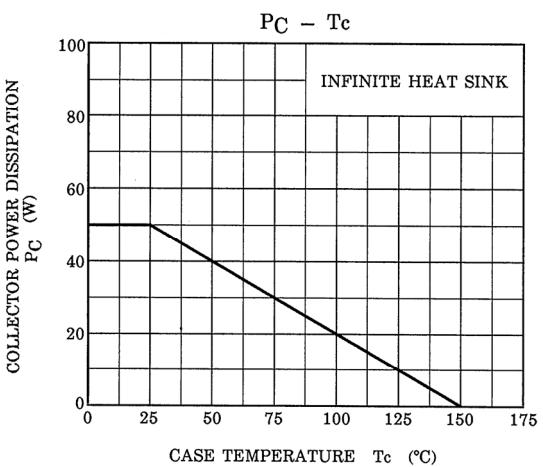
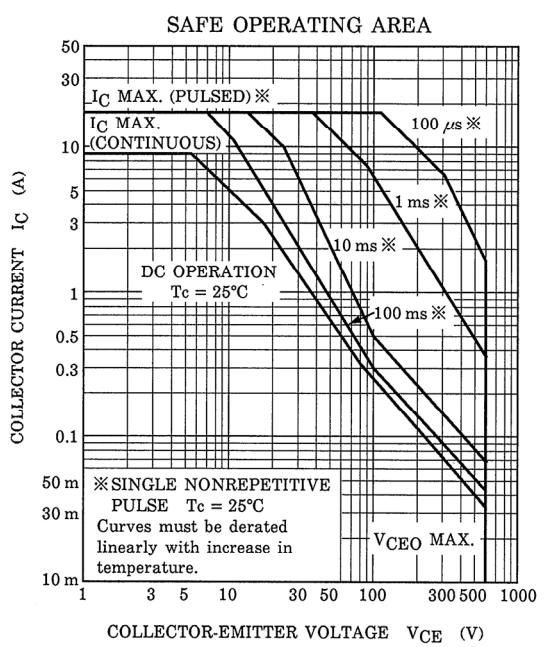
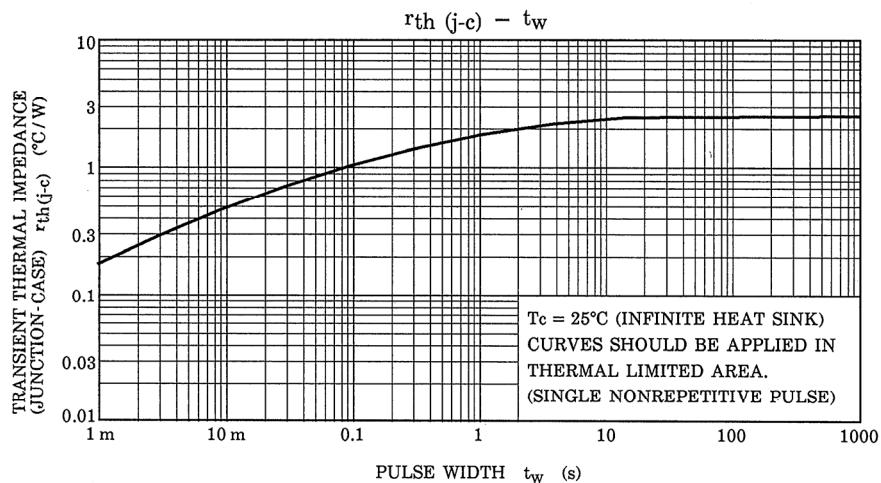
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> = 1500 V, I <sub>E</sub> = 0	—	—	1	mA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0	—	—	10	μA
Emitter-Base Breakdown Voltage	V <sub>(BR)</sub> CEO	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	600	—	—	V
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 1 A	10	—	40	—
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 7 A	4	—	8	
Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> = 7 A, I <sub>B</sub> = 1.75 A	—	—	3	V
Base-Emitter Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> = 7 A, I <sub>B</sub> = 1.75 A	—	1.0	1.5	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 0.1 A	—	2.5	—	MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	115	—	pF
Switching Time	Storage Time	t <sub>stg</sub>	I <sub>CP</sub> = 5.5 A, I <sub>B1</sub> (end) = 1.1 A	—	2.5	3.5
	Fall Time	t <sub>f</sub>	f <sub>H</sub> = 64 kHz	—	0.15	0.3

## Marking









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20070701-EN

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