

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5858

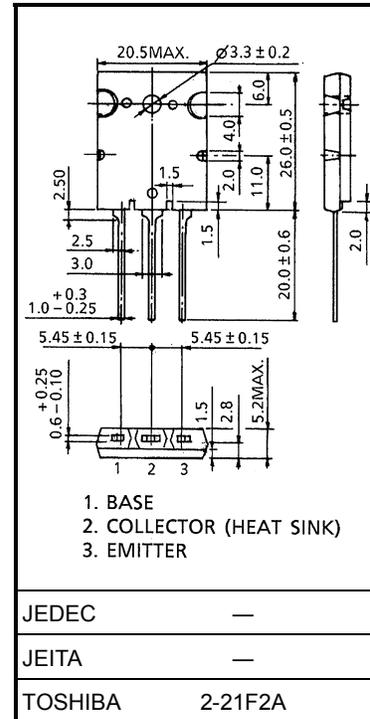
HORIZONTAL DEFLECTION OUTPUT FOR  
HDTV, DIGITAL TV, PROJECTION TV

Unit: mm

- High Voltage :  $V_{CBO} = 1700\text{ V}$
- Low Saturation Voltage :  $V_{CE(sat)} = 1.5\text{ V (Max)}$
- High Speed :  $t_f(2) = 0.1\text{ }\mu\text{s (Typ.)}$

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

CHARACTERISTIC	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	$I_C$	22
	Pulse	$I_{CP}$	44
Base Current	$I_B$	11	A
Collector Power Dissipation	$P_C$	200	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ\text{C}$

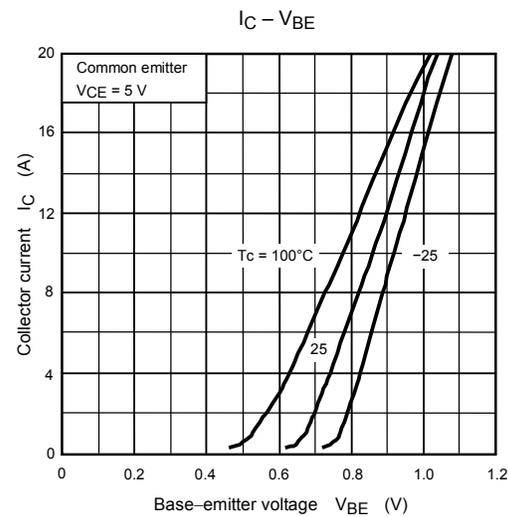
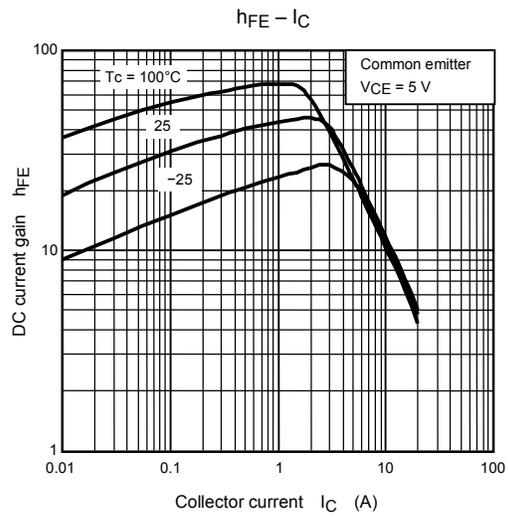
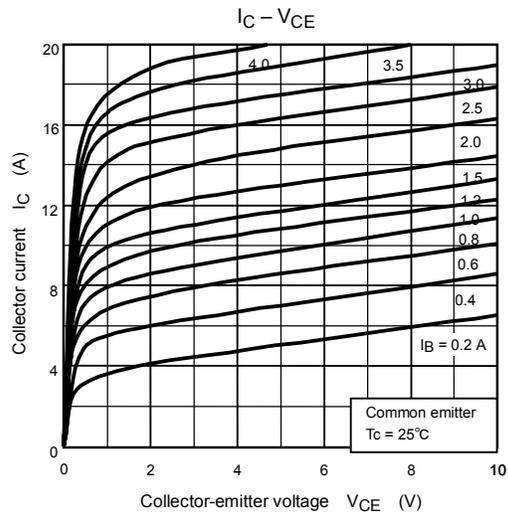


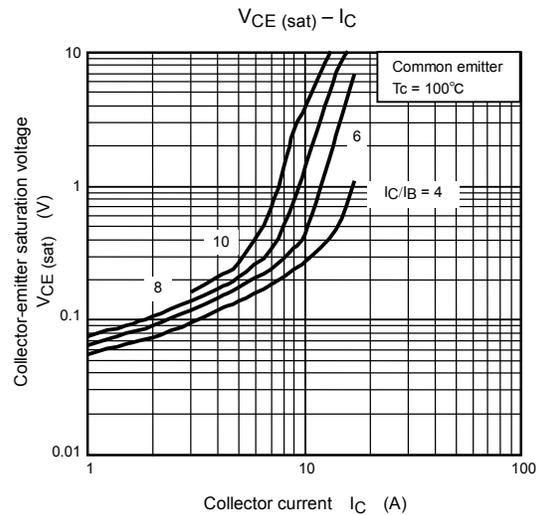
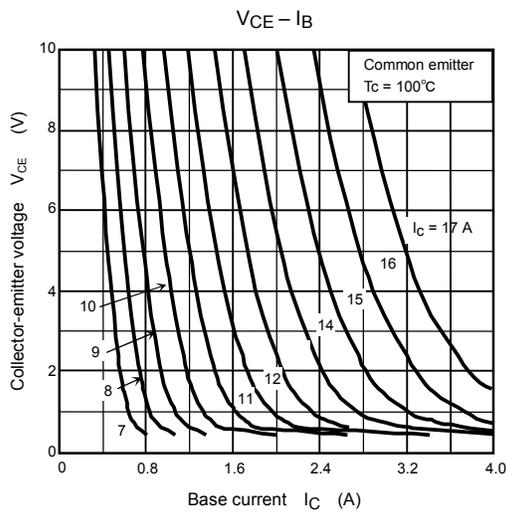
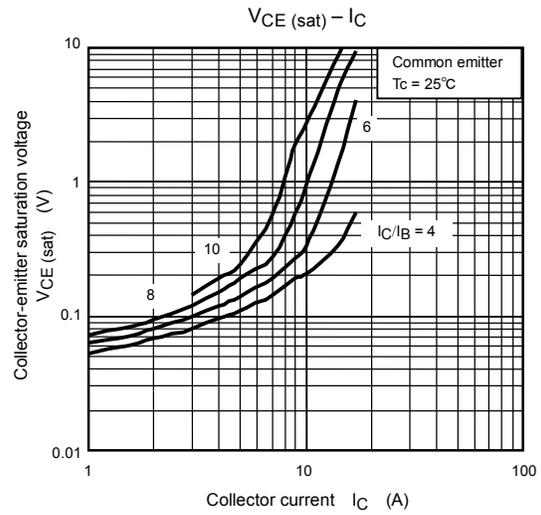
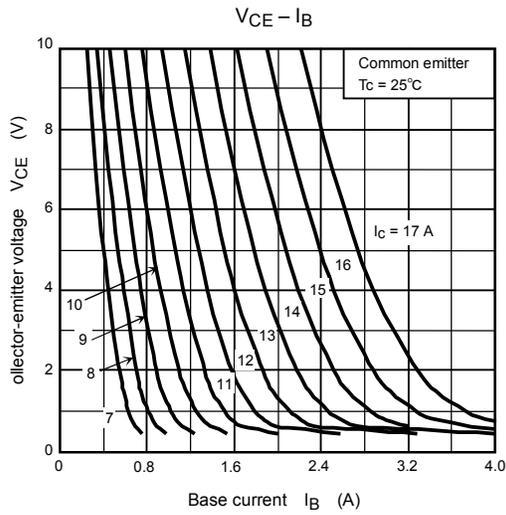
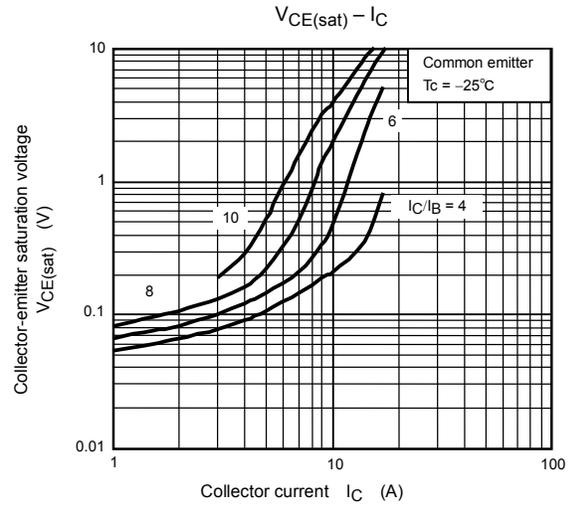
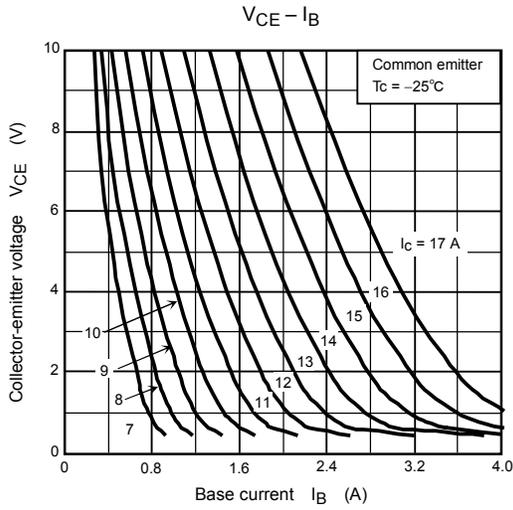
Weight: 9.75 g (typ.)

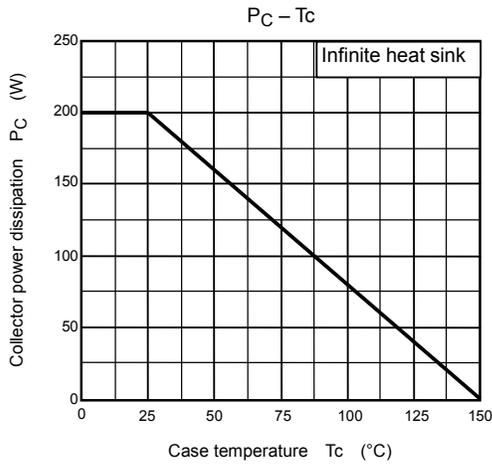
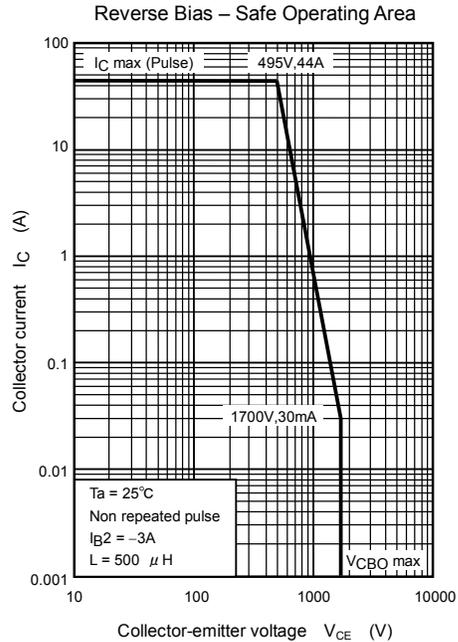
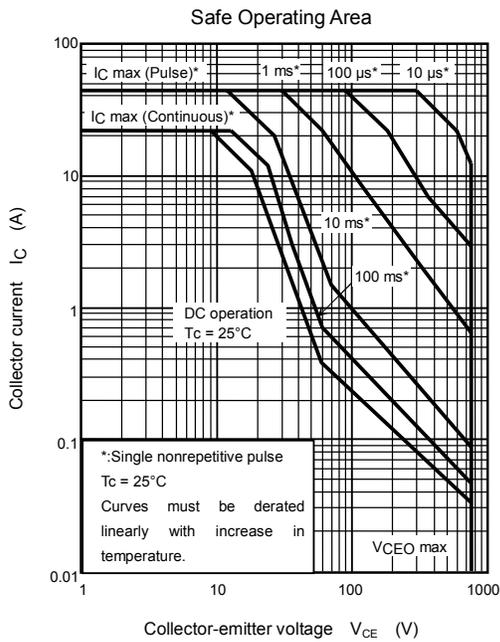
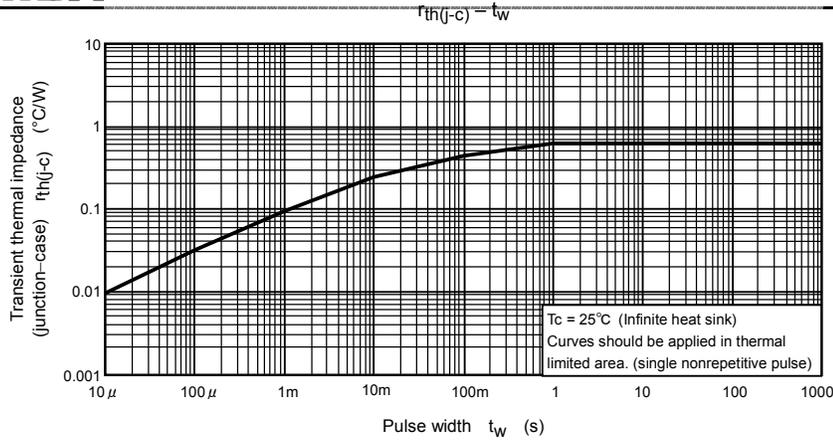
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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> = 1700 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	—	—	100	μA	
Collector - Emitter Breakdown Voltage	V <sub>(BR) CEO</sub>	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	750	—	—	V	
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 A	30	—	60	—	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 8 A	11	—	19		
	h <sub>FE</sub> (3)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 17 A	5	—	7.5		
Collector-Emitter Saturation Voltage	V <sub>CE (sat)</sub>	I <sub>C</sub> = 17 A, I <sub>B</sub> = 4.25 A	—	—	1.5	V	
Base-Emitter Saturation Voltage	V <sub>BE (sat)</sub>	I <sub>C</sub> = 17 A, I <sub>B</sub> = 4.25 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	—	MHz	
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz	—	280	—	pF	
Switching Time	Storage Time	t <sub>stg(1)</sub>	I <sub>CP</sub> = 9 A, I <sub>B1</sub> (end) = 1.4 A f <sub>H</sub> = 32 kHz	—	4.5	—	μs
	Fall Time	t <sub>f(1)</sub>		—	0.1	—	
	Storage Time	t <sub>stg(2)</sub>	I <sub>CP</sub> = 8 A, I <sub>B1</sub> (end) = 1.2 A f <sub>H</sub> = 45 kHz	—	3.5	—	μs
	Fall Time	t <sub>f(2)</sub>		—	0.1	—	







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