

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5858

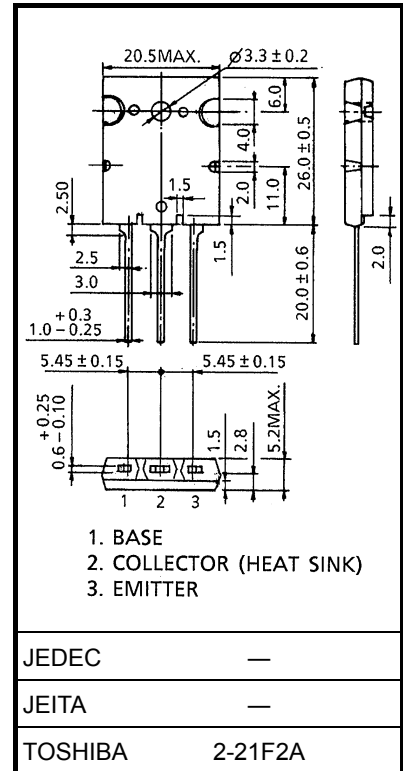
HORIZONTAL DEFLECTION OUTPUT FOR  
HDTV, DIGITAL TV, PROJECTION TV

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	A
	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	$^\circ\text{C}$

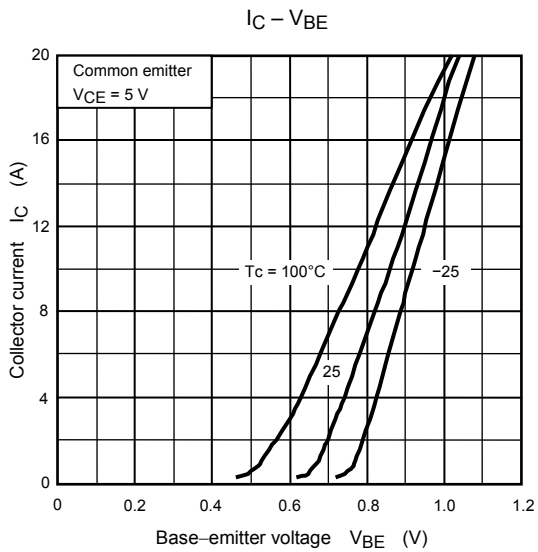
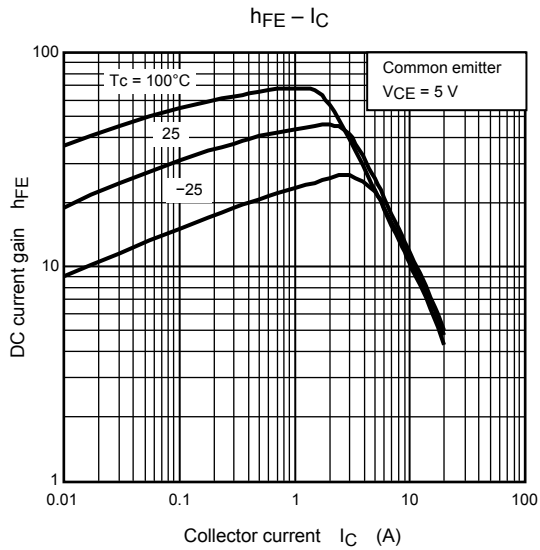
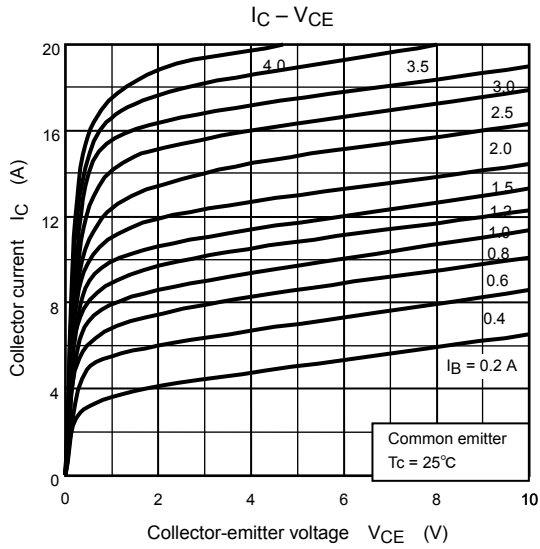


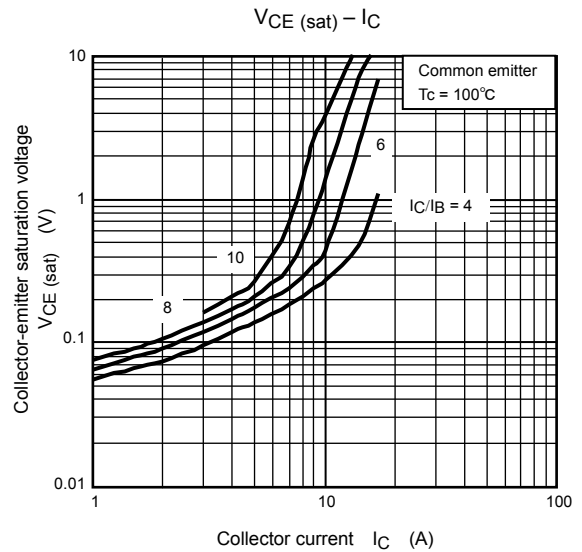
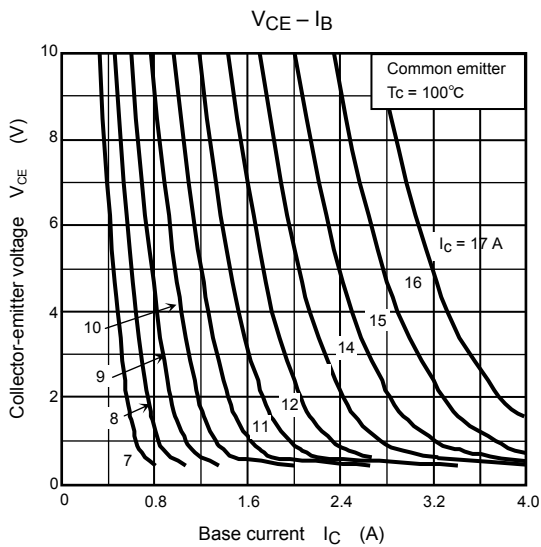
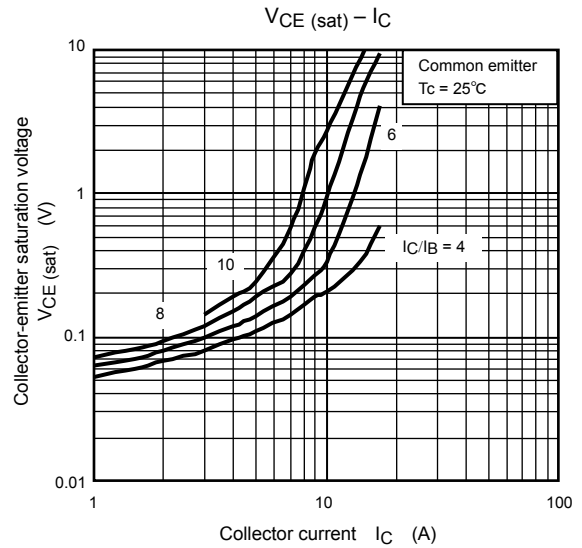
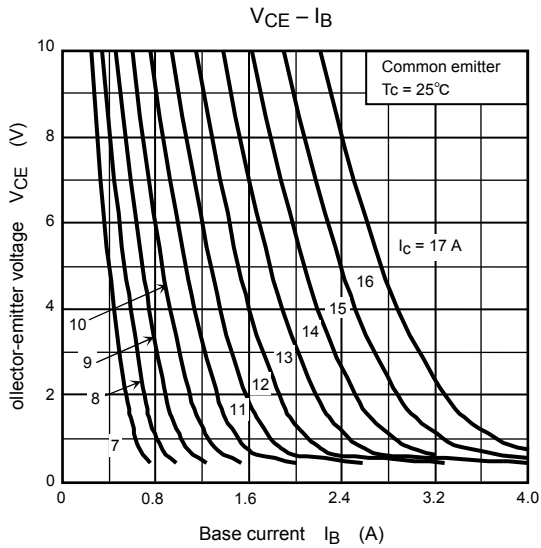
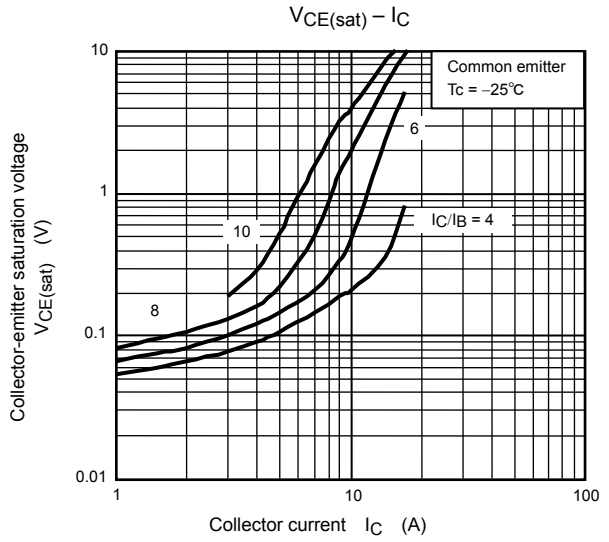
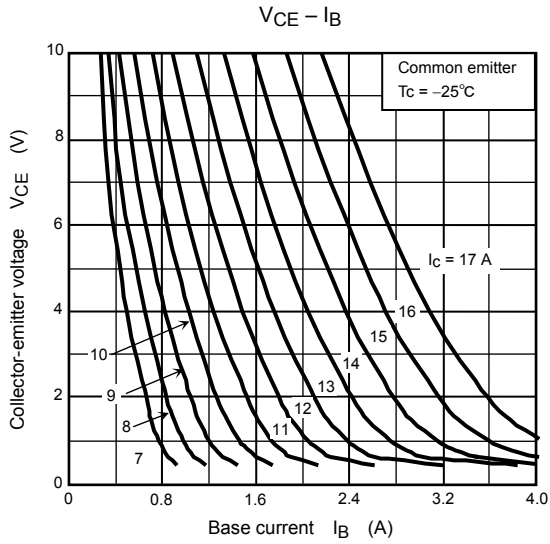
Weight: 9.75 g (typ.)

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).

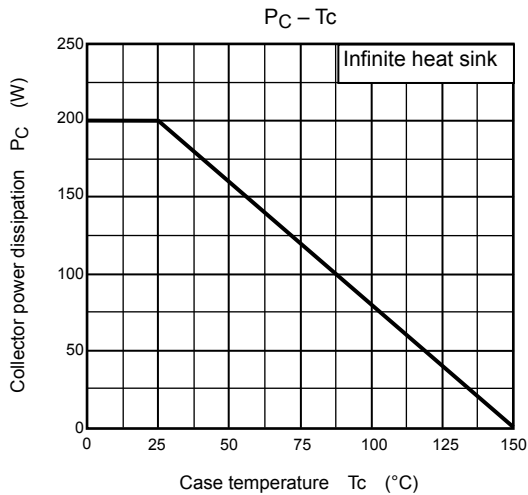
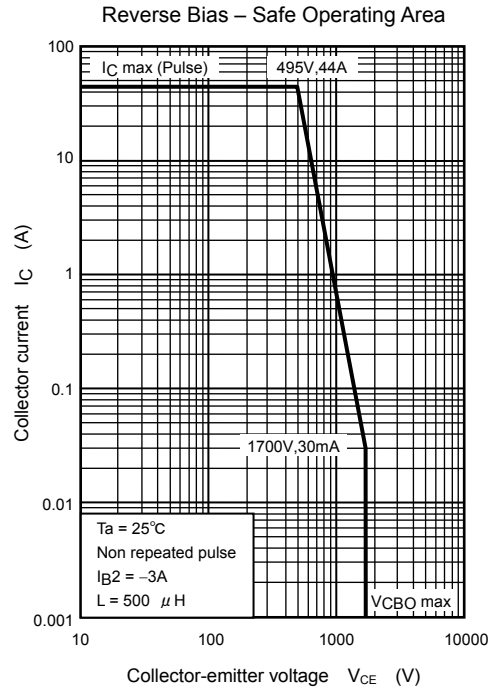
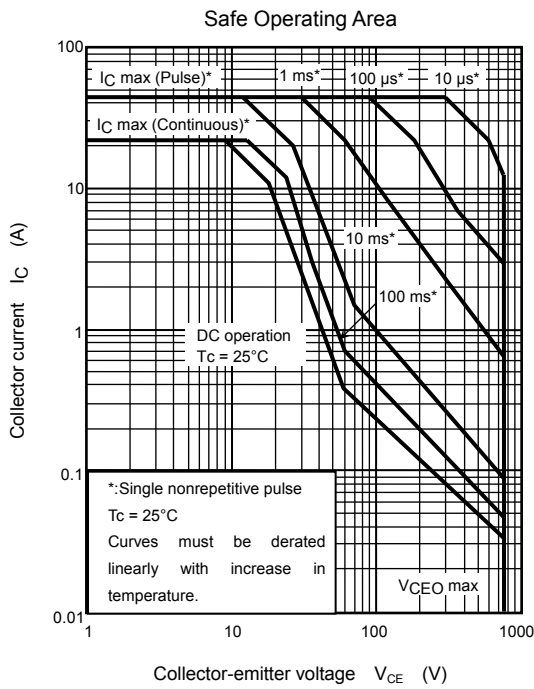
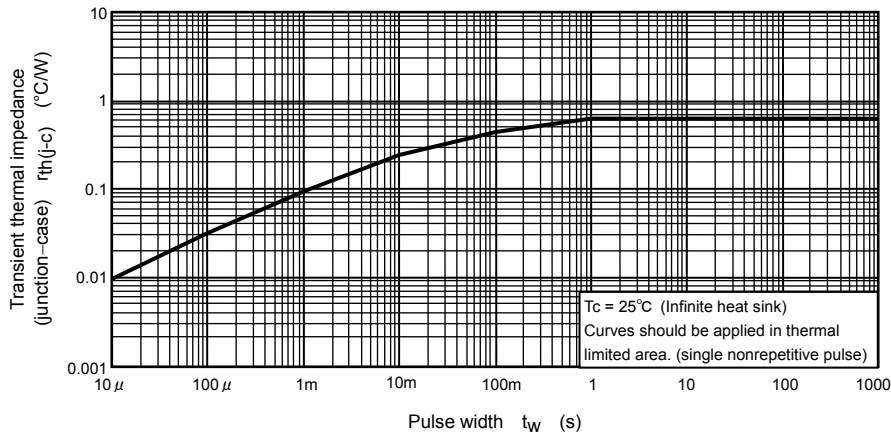
## ELECTRICAL CHARACTERISTICS (T<sub>c</sub> = 25°C)

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	—	





$$r_{th(j-c)} = t_w$$



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20070701-EN

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