

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SC5857

HORIZONTAL DEFLECTION OUTPUT FOR HDTV, DIGITAL TV, PROJECTION TV

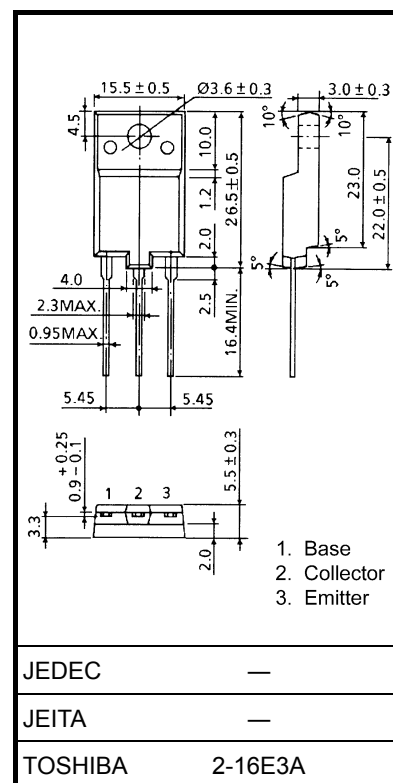
Unit: mm

- 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°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	21	A
	Pulse	I_{CP}	42	
Base Current		I_B	10.5	A
Collector Power Dissipation		P_C	75	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	–55~150	°C

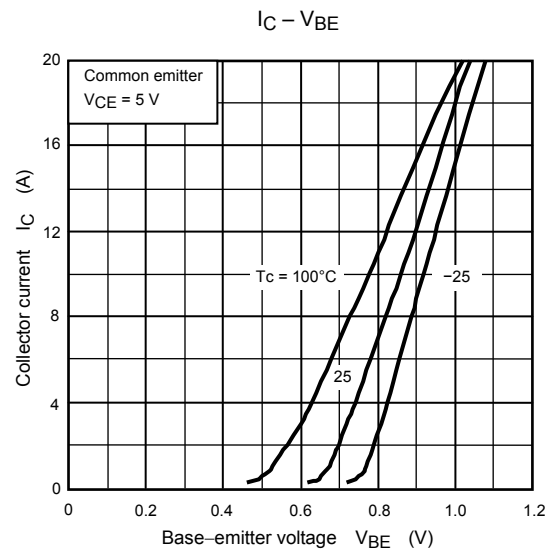
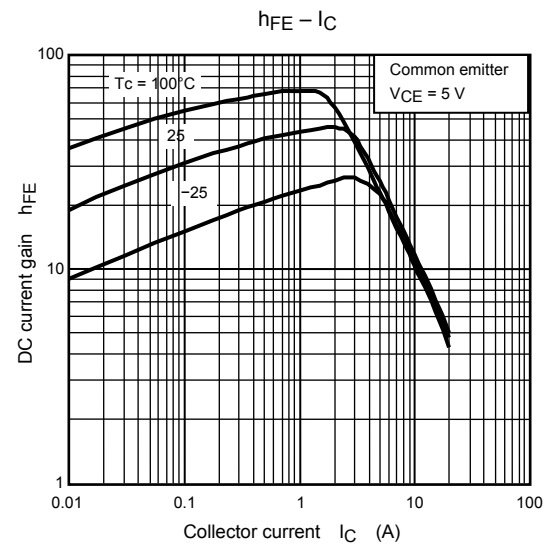
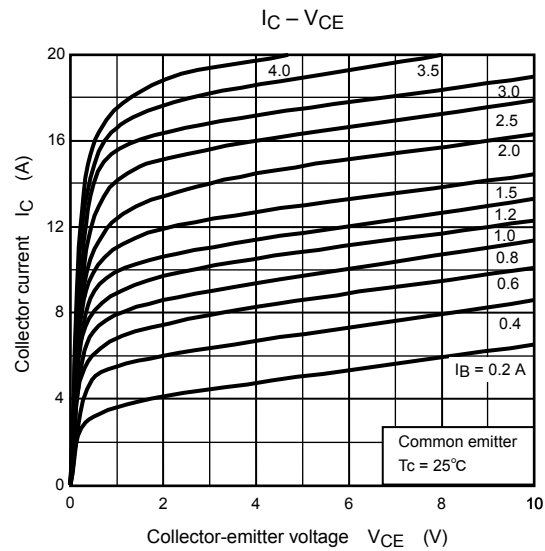
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

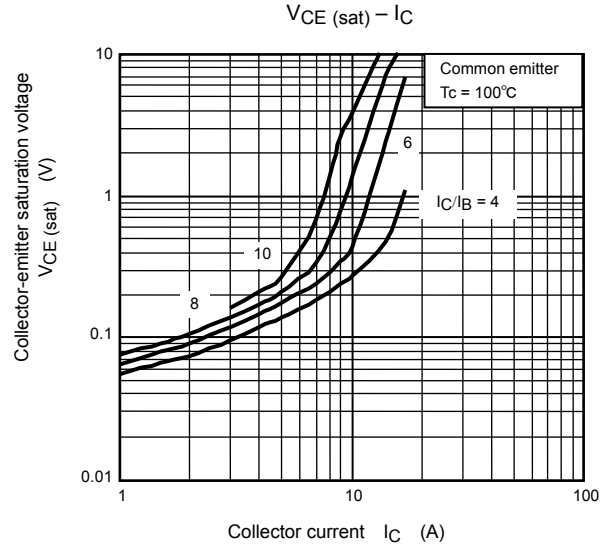
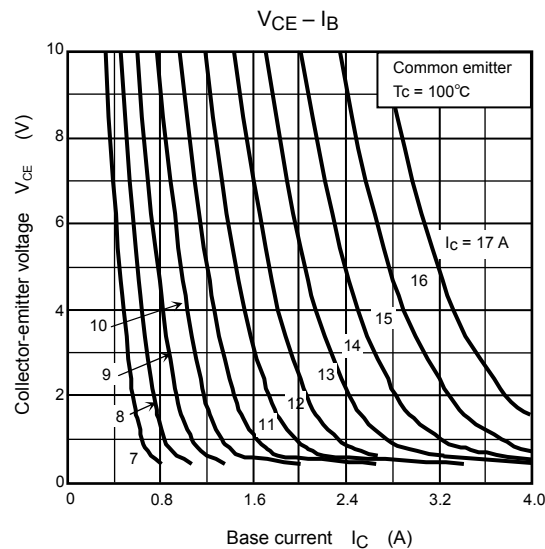
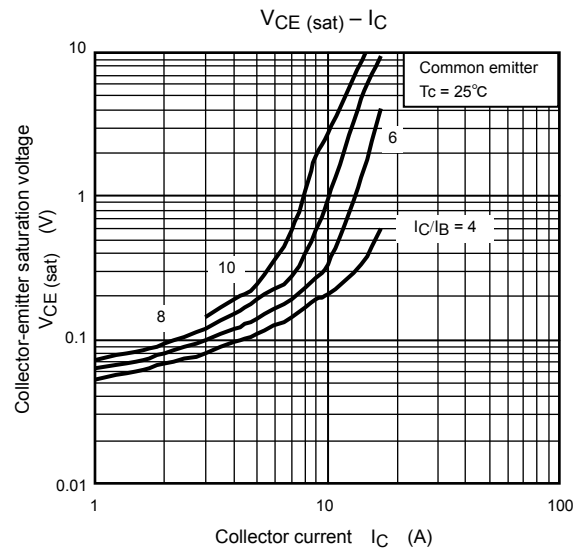
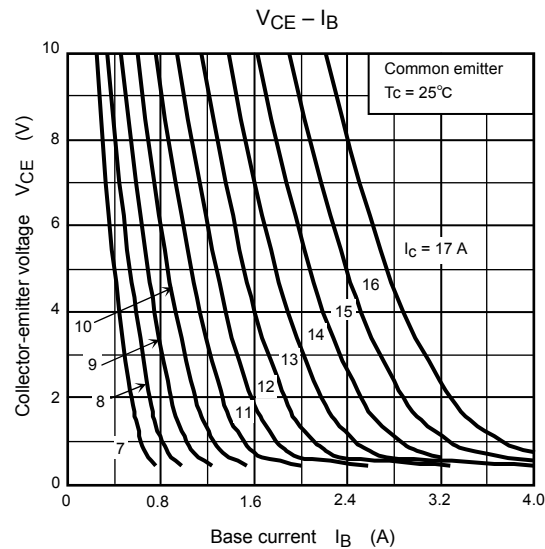
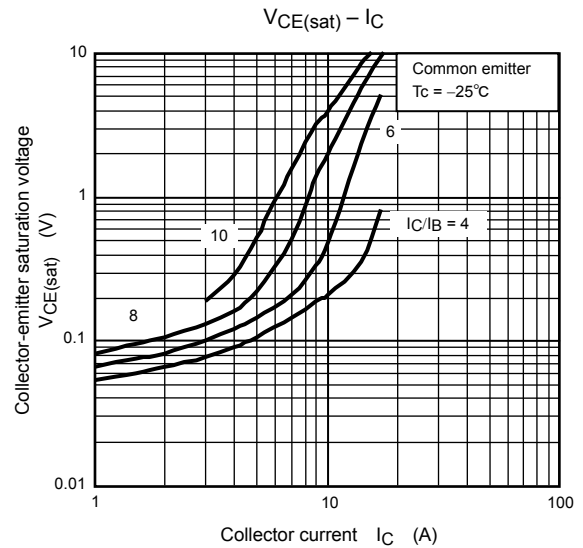
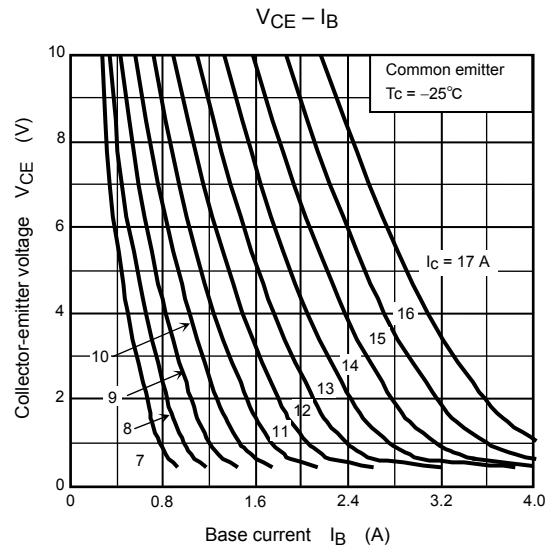


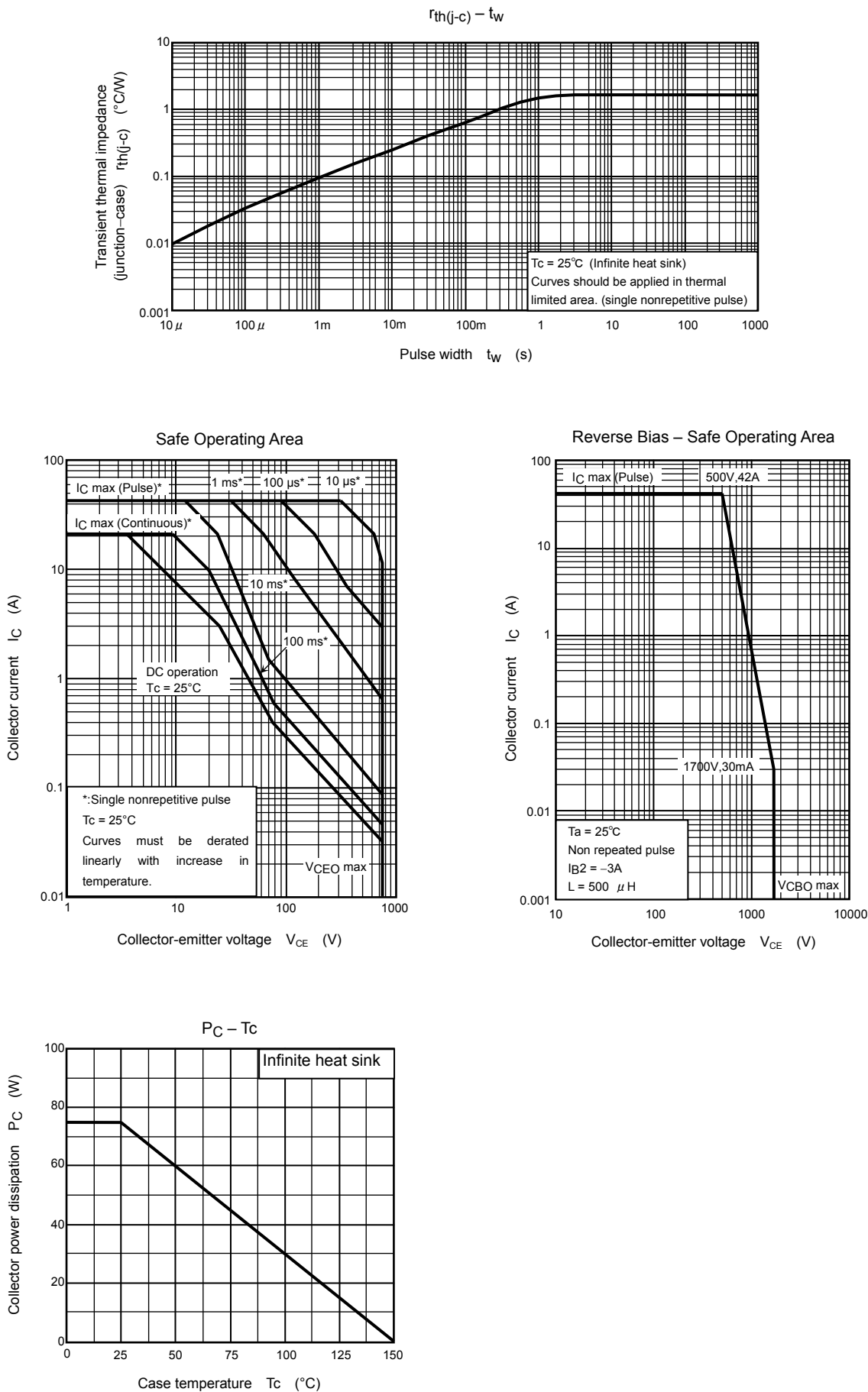
Weight: 5.5 g (typ.)

ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC		SYMBOL	TEST CONDITION	Min	Typ.	Max	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 1700\text{ V}, I_E = 0$	—	—	1	mA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	100	μA
Collector – Emitter Breakdown Voltage		$V_{(BR) CEO}$	$I_C = 10\text{ mA}, I_B = 0$	750	—	—	V
DC Current Gain		$h_{FE (1)}$	$V_{CE} = 5\text{ V}, I_C = 2\text{ A}$	30	—	60	—
		$h_{FE (2)}$	$V_{CE} = 5\text{ V}, I_C = 8\text{ A}$	11	—	19	
		$h_{FE (3)}$	$V_{CE} = 5\text{ V}, I_C = 17\text{ A}$	5	—	7.5	
Collector-Emitter Saturation Voltage		$V_{CE (sat)}$	$I_C = 17\text{ A}, I_B = 4.25\text{ A}$	—	—	1.5	V
Base-Emitter Saturation Voltage		$V_{BE (sat)}$	$I_C = 17\text{ A}, I_B = 4.25\text{ A}$	—	1.0	1.5	V
Transition Frequency		f_T	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$	—	2	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	280	—	pF
Switching Time	Storage Time	$t_{stg(1)}$	$I_{CP} = 9\text{ A}, I_{B1 (end)} = 1.4\text{ A}$ $f_H = 32\text{ kHz}$	—	4.5	—	μs
	Fall Time	$t_f(1)$		—	0.1	—	
	Storage Time	$t_{stg(2)}$	$I_{CP} = 8\text{ A}, I_{B1 (end)} = 1.2\text{ A}$ $f_H = 45\text{ kHz}$	—	3.5	—	μs
	Fall Time	$t_f(2)$		—	0.1	—	







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