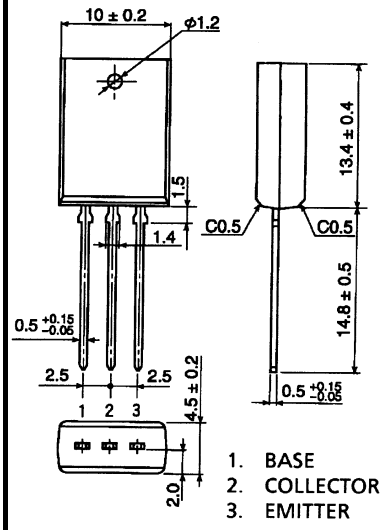
TOSHIBA Transistor Silicon NPN Triple Diffused Type (PCT process)

2SC5173

High-Voltage Switching and Amplifier Applications
Color TV Horizontal Driver Applications
Color TV Chroma Output Applications

- High breakdown voltage: V_{CEO} = 300 V
- Small collector output capacitance: C_{ob} = 3.0 pF (typ.)
- Collector metal (fin) is fully covered with mold resin.

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-10T1A

Weight: 1.5 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

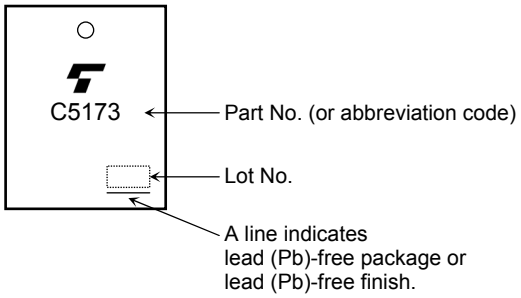
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	300	V
Collector-emitter voltage	V_{CEO}	300	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	100	mA
Base current	I_B	50	mA
Collector power dissipation	P_C	1.8	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 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).

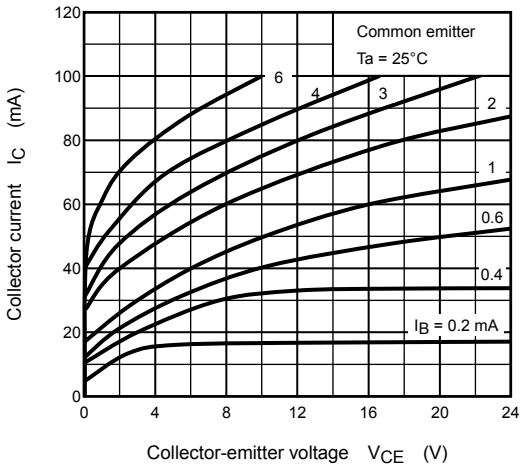
Electrical Characteristics (Ta = 25°C unless otherwise noted.)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 240 V, I_E = 0	—	—	1.0	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 7 V, I_C = 0	—	—	1.0	μA
DC current gain	$h_{FE\ (1)}$	V_{CE} = 10 V, I_C = 4 mA	20	—	—	
	$h_{FE\ (2)}$	V_{CE} = 10 V, I_C = 20 mA	30	—	200	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 10 mA, I_B = 1 mA	—	—	1.0	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$	I_C = 10 mA, I_B = 1 mA	—	—	1.0	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 20 mA	50	70	—	MHz
Collector output capacitance	C_{ob}	V_{CB} = 20 V, I_E = 0, f = 1 MHz	—	3.0	—	pF

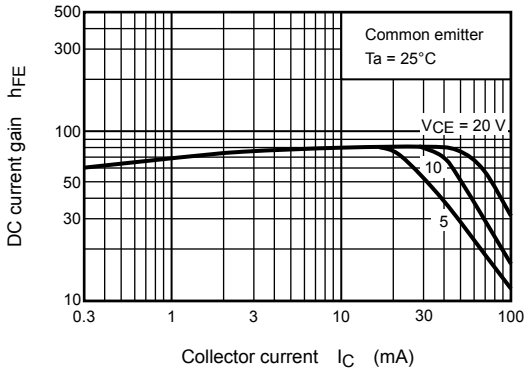
Marking



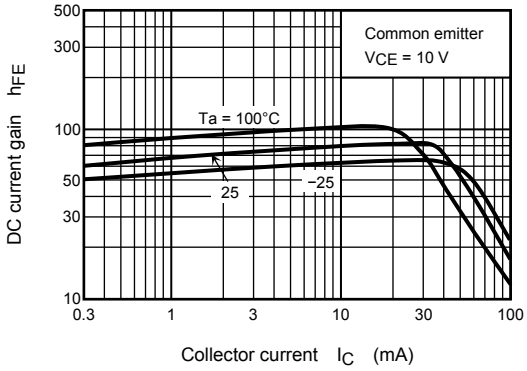
$I_C - V_{CE}$



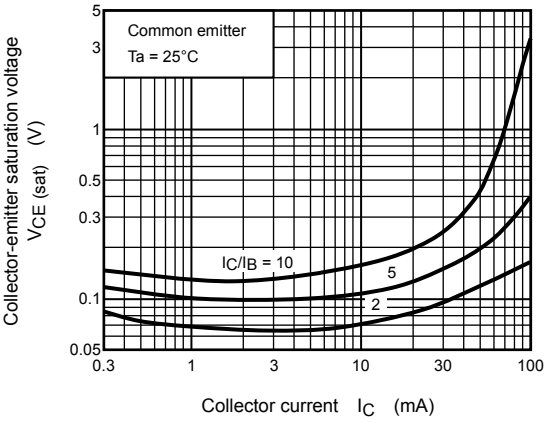
$h_{FE} - I_C$



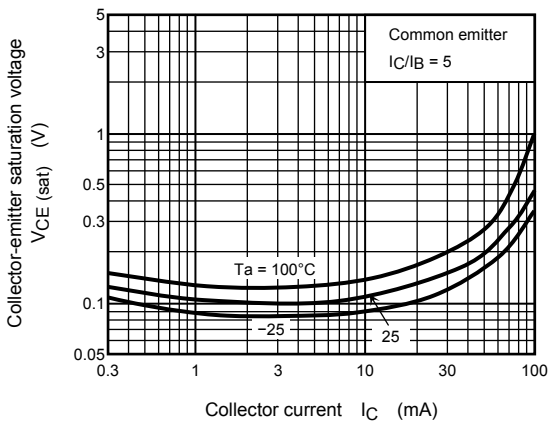
$h_{FE} - I_C$



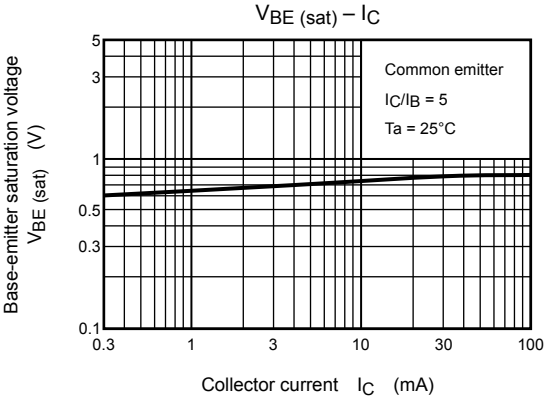
$V_{CE\ (sat)} - I_C$



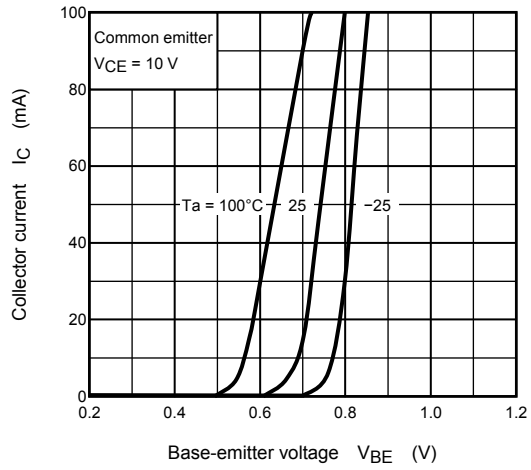
$V_{CE\ (sat)} - I_C$



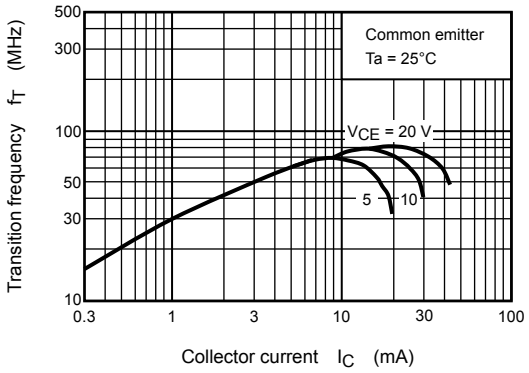
$V_{BE\ (sat)} - I_C$



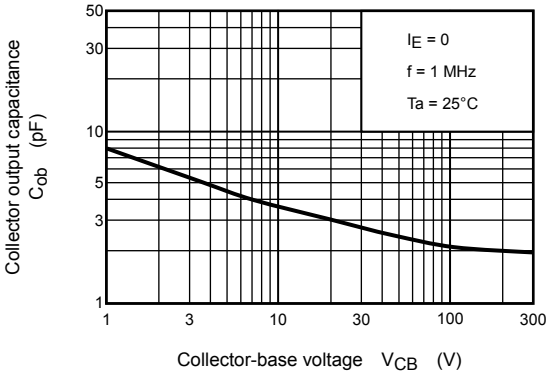
$I_C - V_{BE}$



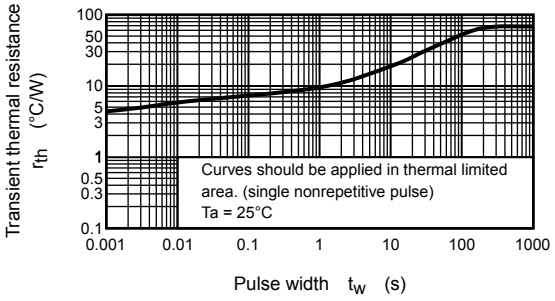
$f_T - I_C$



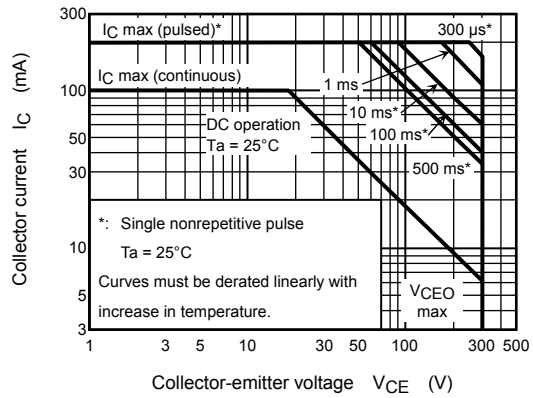
$C_{ob} - V_{CB}$



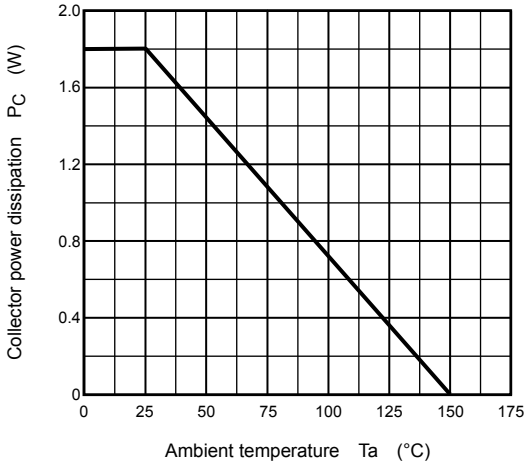
$r_{th} - t_w$



Safe Operating Area



$P_C - Ta$



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