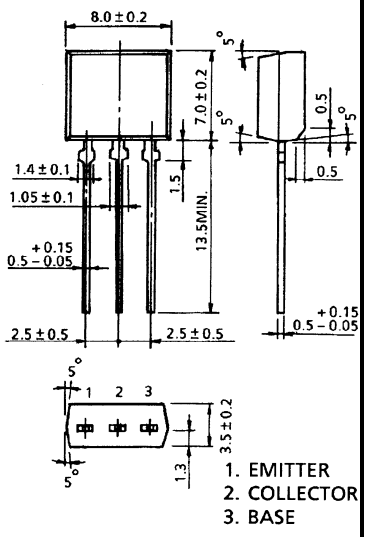
TOSHIBA Transistor Silicon NPN Triple Diffused Type (PCT Process)

2SC5027

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.)
- Recommended for chroma output and driver applications for line-operated TV horizontal.

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-8M1A

Weight: 0.55 g (typ.)

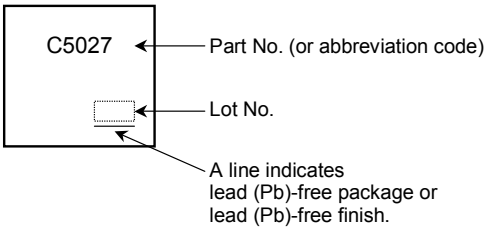
Maximum Ratings (Ta = 25°C)

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	1.3	W
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

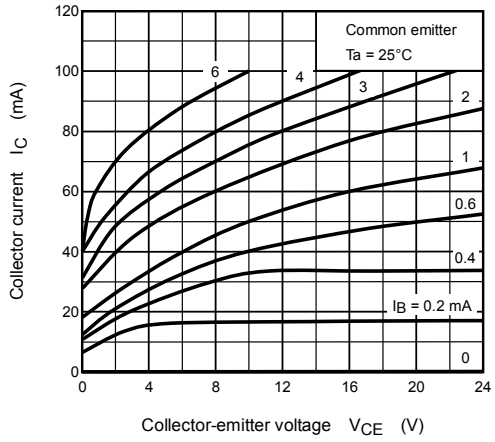
Electrical Characteristics (Ta = 25°C)

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

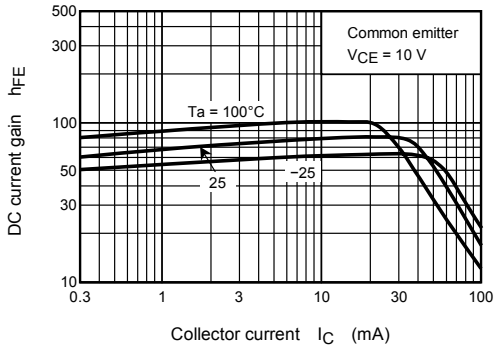
Marking



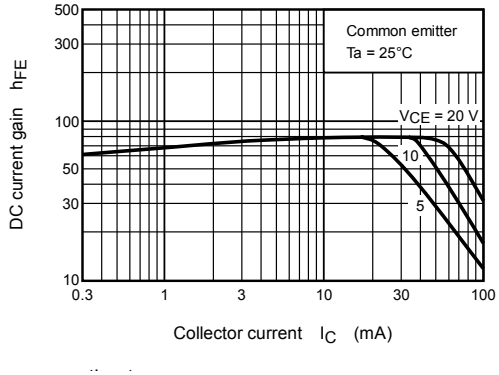
$I_C - V_{CE}$



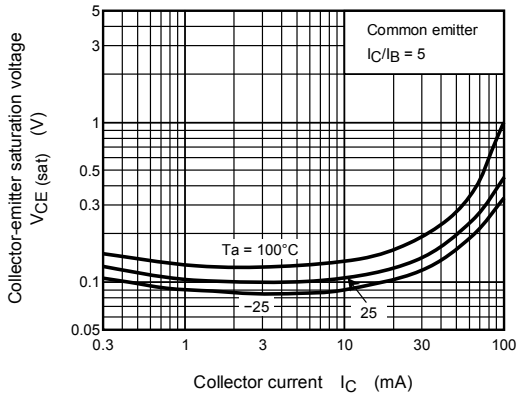
$h_{FE} - I_C$



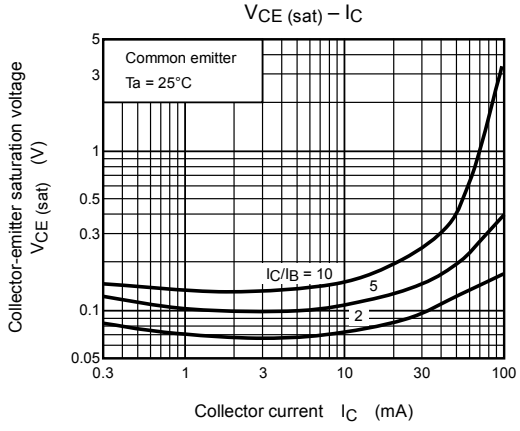
$h_{FE} - I_C$



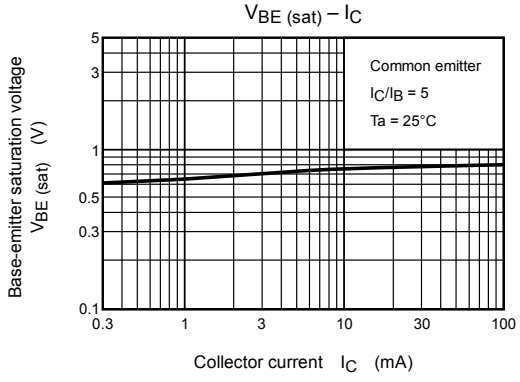
$V_{CE\ (sat)} - I_C$



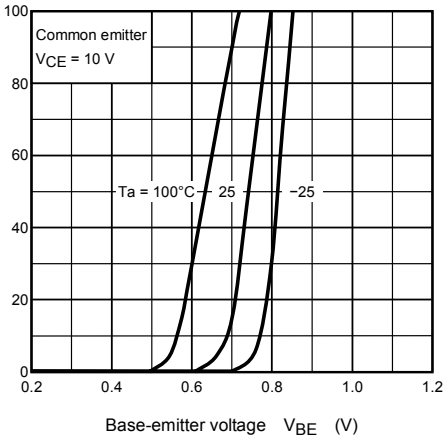
$V_{CE\ (sat)} - I_C$



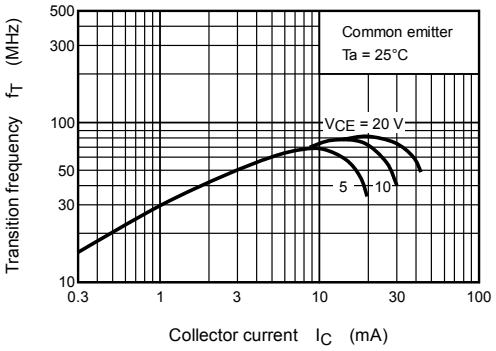
$V_{BE\ (sat)} - I_C$



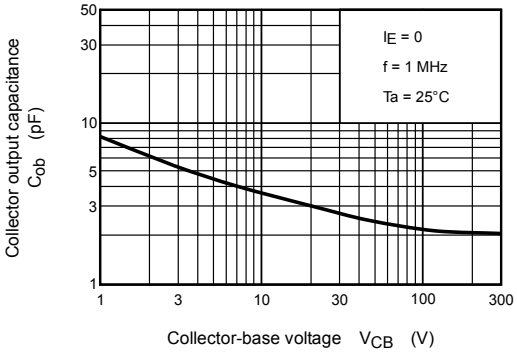
$I_C - V_{BE}$



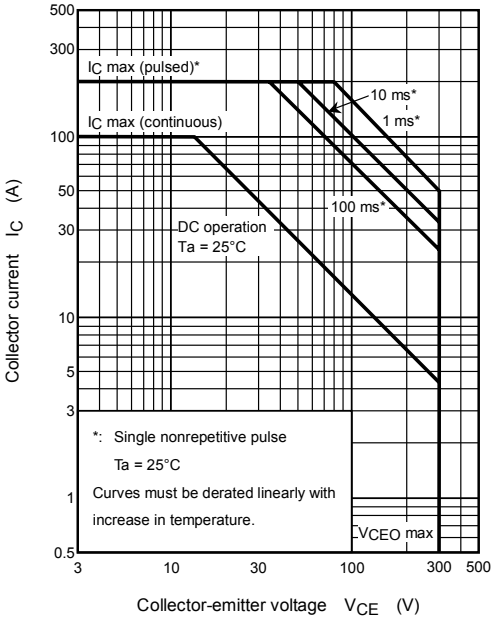
$f_T - I_C$



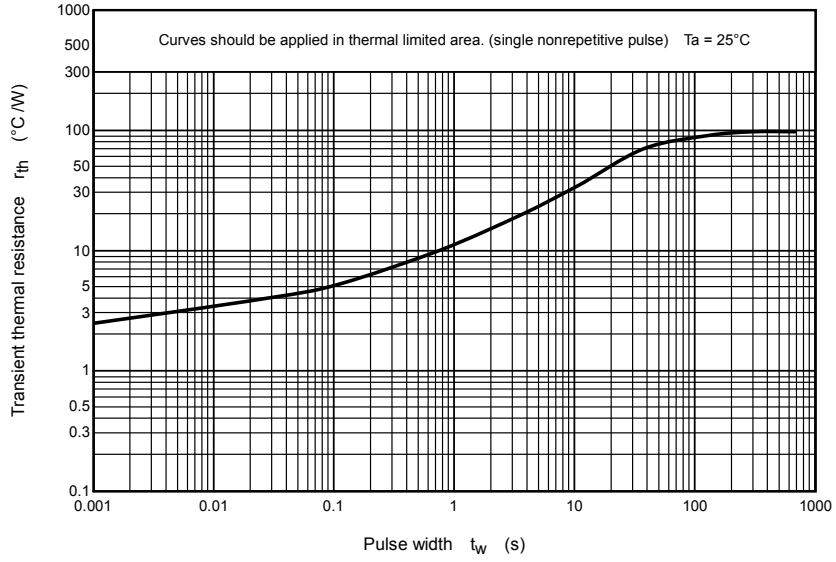
$C_{ob} - V_{CB}$



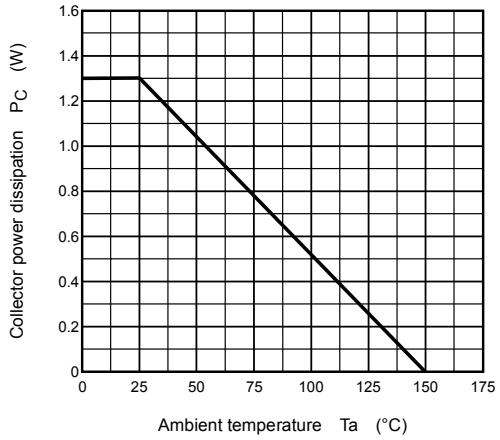
Safe Operating Area



$r_{th} - t_w$


Curves should be applied in thermal limited area. (single nonrepetitive pulse) Ta = 25°C
Transient thermal resistance r_{th} (°C /W)
1000
500
300
100
50
30
10
5
3
1
0.5
0.3
0.1
0.001
0.01
0.1
1
10
100
1000
Pulse width t_w (s)

$P_C - Ta$


Collector power dissipation P_C (W)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
0
25
50
75
100
125
150
175
Ambient temperature Ta (°C)

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