

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC4667

Ultra High Speed Switching Applications
Computer, Counter Applications

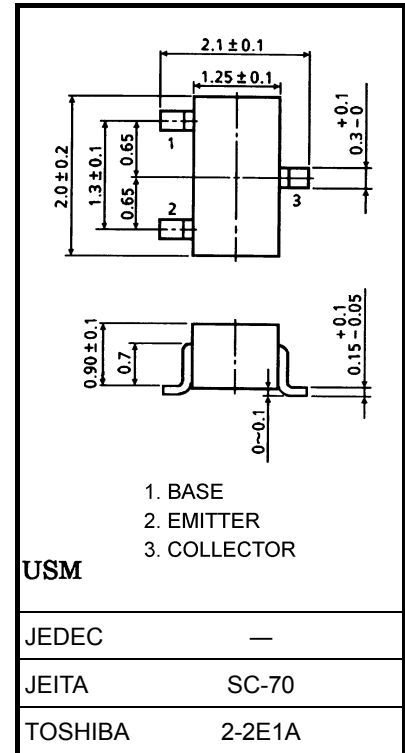
- High transition frequency: $f_T = 400 \text{ MHz (typ.)}$
- Low saturation voltage: $V_{CE(sat)} = 0.3 \text{ V (max)}$
- High speed switching time: $t_{stg} = 15 \text{ ns (typ.)}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	200	mA
Base current	I_B	40	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$

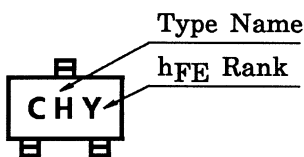
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

Unit: mm



Weight: 0.006 g (typ.)

Marking

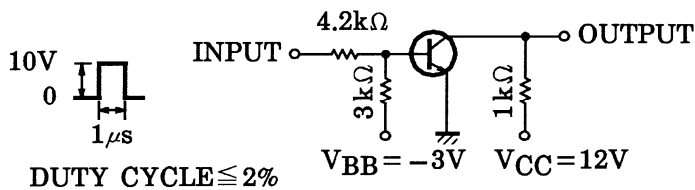


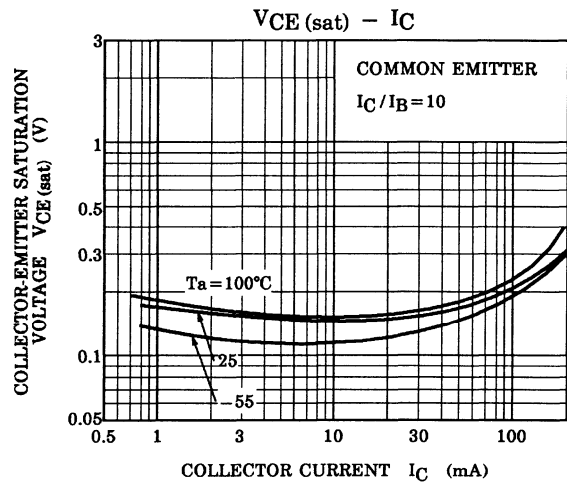
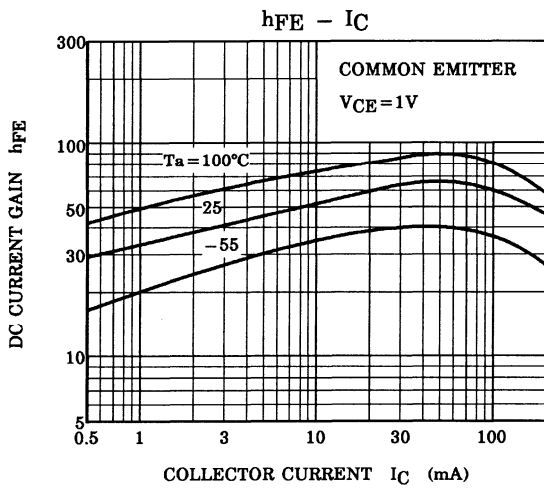
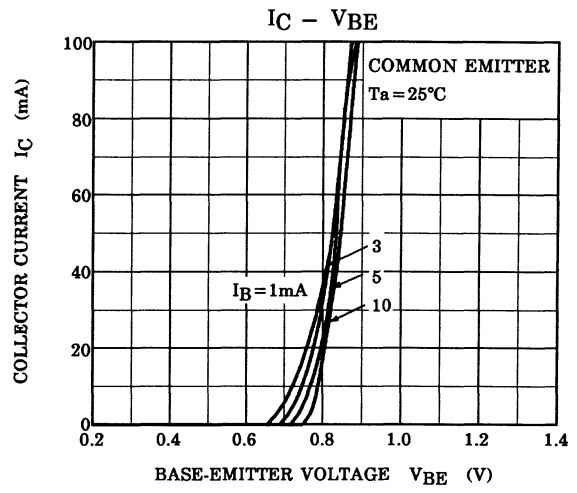
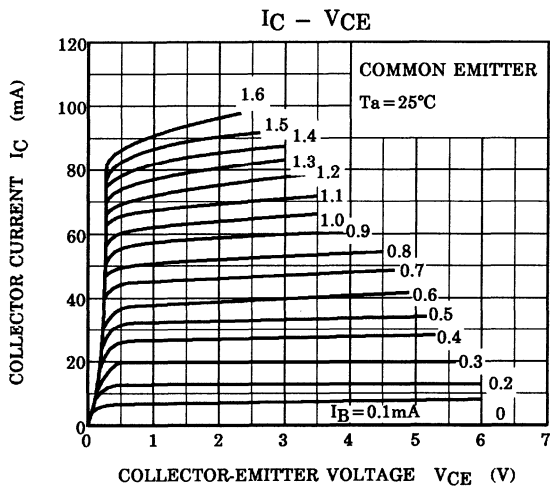
Electrical Characteristics (Ta = 25°C)

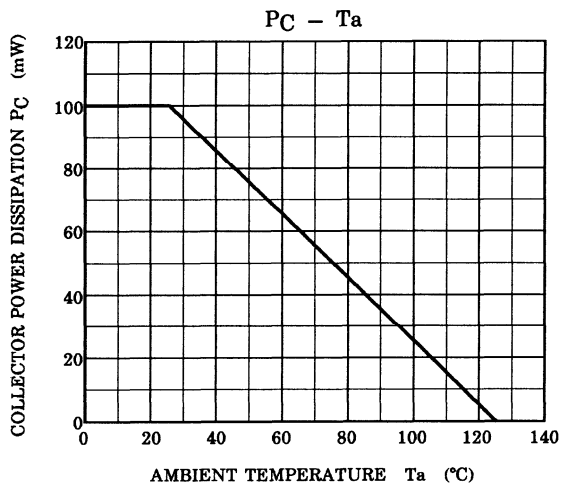
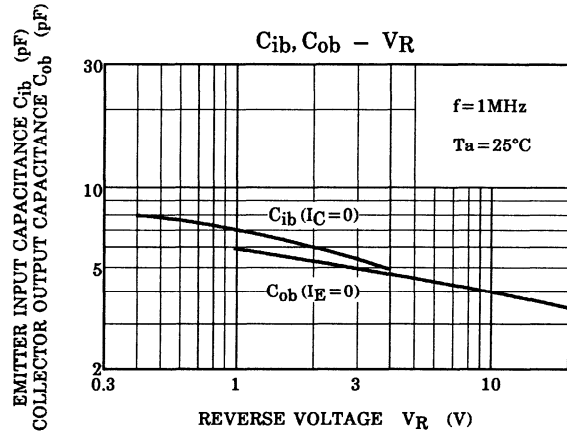
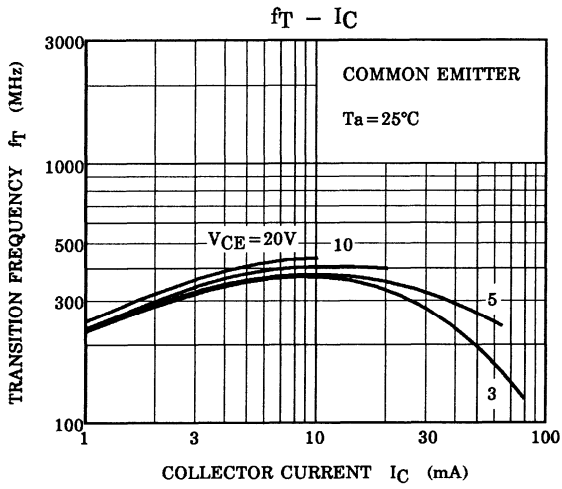
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 40\text{ V}, I_E = 0$	—	—	0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$	—	—	0.1	μA
DC current gain	$h_{FE(1)}$ (Note 1)	$V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$	40	—	240	
	$h_{FE(2)}$	$V_{CE} = 1\text{ V}, I_C = 100\text{ mA}$	20	—	—	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\text{ mA}, I_B = 1\text{ mA}$	—	—	0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20\text{ mA}, I_B = 1\text{ mA}$	—	—	1.0	V
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}$	200	400	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$	—	4	6	pF
Switching time	Turn-on time	t_{on}	—	70	—	ns
	Storage time	t_{stg}	—	15	—	
	Turn-off time	t_{off}	—	30	—	

Note 1: $h_{FE(1)}$ classification R: 40~80, O: 70~140, Y: 120~240

Note 2: Switching time test circuit







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