

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

2SC3437

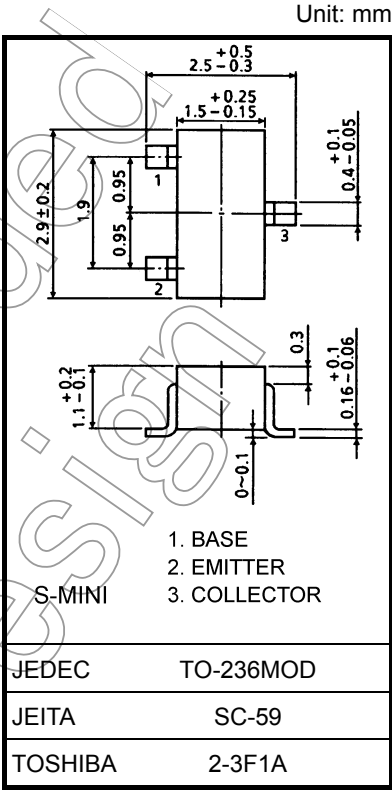
Ultra High Speed Switching Applications
Computer, Counter Applications

- 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 ($T_a = 25^\circ\text{C}$)

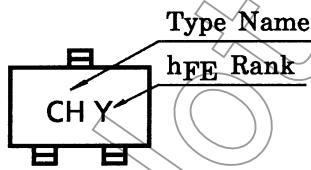
Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	200	mA
Base current	I_B	40	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	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).

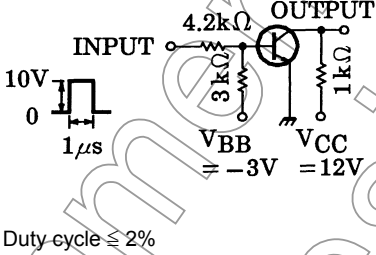


Weight: 0.012 g (typ.)

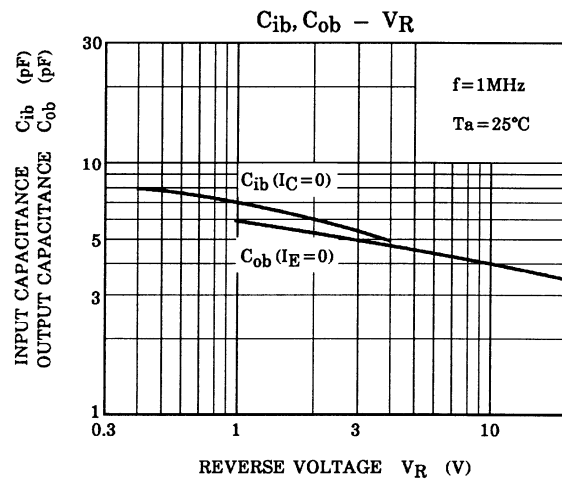
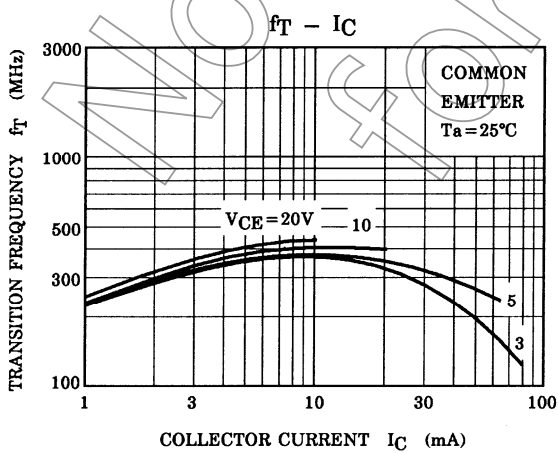
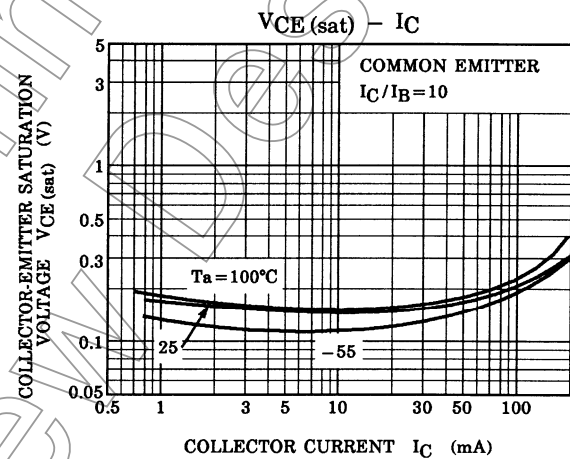
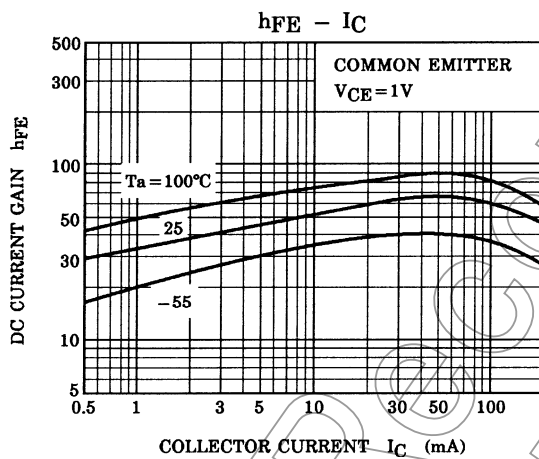
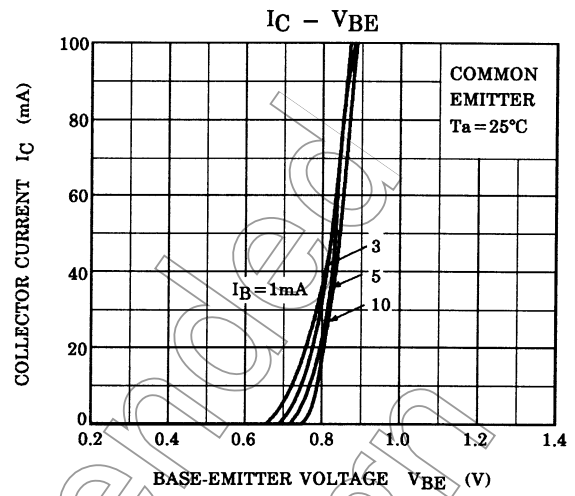
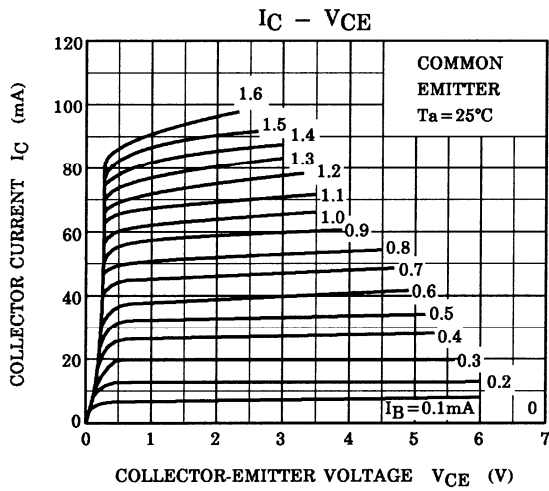
Marking

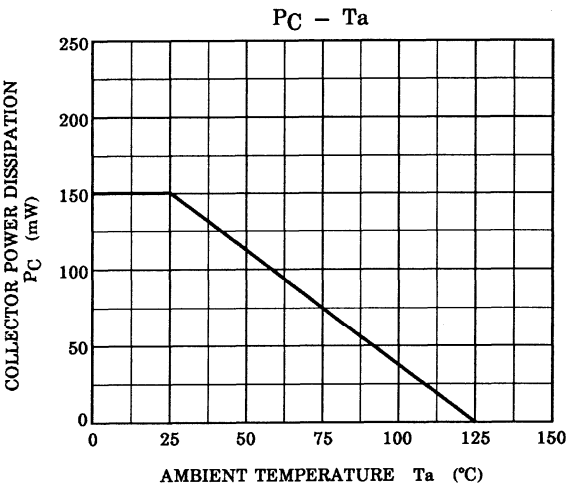


Electrical Characteristics (Ta = 25°C)

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)		$V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$	40	—	240	
	$h_{FE} (2)$		$V_{CE} = 1\text{ V}, I_C = 100\text{ mA}$	20	—	—	
Collector-emitter saturation voltage		$V_{CE} (\text{sat})$	$I_C = 20\text{ mA}, I_B = 1\text{ mA}$	—	—	0.3	V
Base-emitter saturation voltage		$V_{BE} (\text{sat})$	$I_C = 20\text{ mA}, I_B = 1\text{ mA}$	—	—	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}	 <p>Duty cycle $\leq 2\%$</p>	—	70	—	ns
	Storage time	t_{stg}		—	15	—	
	Fall time	t_f		—	30	—	

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





Not Recommended
for New Design

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