TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

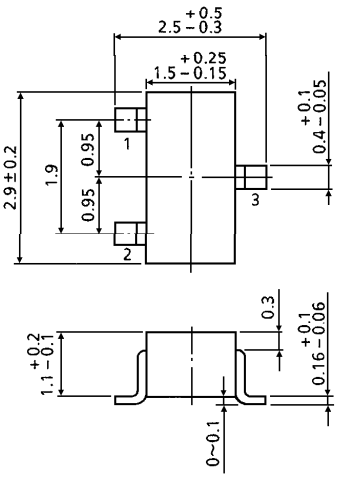
2SC3437

ULTRA HIGH SPEED SWITCHING APPLICATIONS

COMPUTER, COUNTER APPLICATIONS

- High Transition Frequency : f_T = 400MHz (Typ.)
- Low Saturation Voltage : $V_{CE\ (sat)}$ = 0.3V (Max.)
- High Speed Switching Time : t_{stg} = 15ns (Typ.)

Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

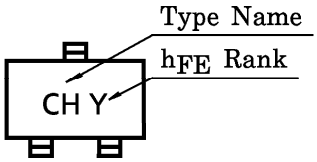
JEDEC	TO-236MOD
EIAJ	SC-59
TOSHIBA	2-3F1A

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	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	°C
Storage Temperature Range	T_{stg}	−55~125	°C

MARKING



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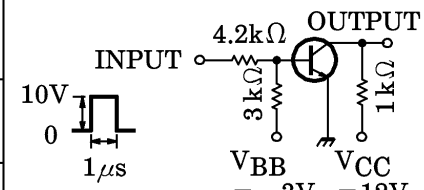
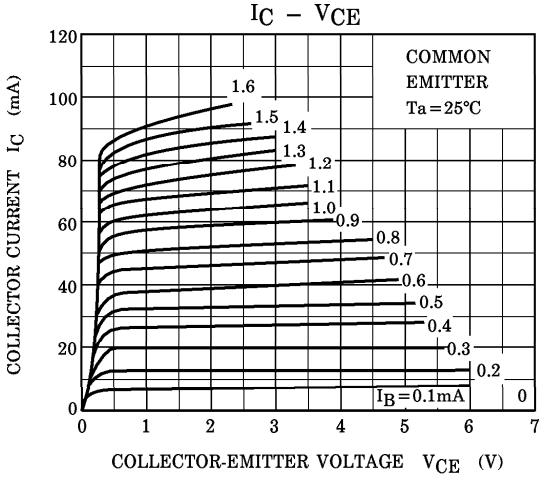
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

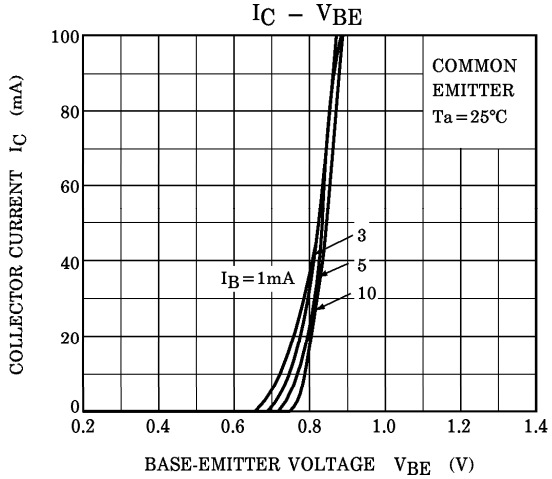
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = 40V, I_E = 0	—	—	0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB} = 5V, I_C = 0	—	—	0.1	μA
DC Current Gain		$h_{FE\ (1)}$ (Note)	V_{CE} = 1V, I_C = 10mA	40	—	240	
		$h_{FE\ (2)}$	V_{CE} = 1V, I_C = 100mA	20	—	—	
Collector-Emitter Saturation Voltage		$V_{CE\ (sat)}$	I_C = 20mA, I_B = 1mA	—	—	0.3	V
Base-Emitter Saturation Voltage		$V_{BE\ (sat)}$	I_C = 20mA, I_B = 1mA	—	—	1.0	V
Transition Frequency		f_T	V_{CE} = 10V, I_C = 10mA	200	400	—	MHz
Collector Output Capacitance		C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	4	6	pF
Switching Time	Turn-on Time	t_{on}		—	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

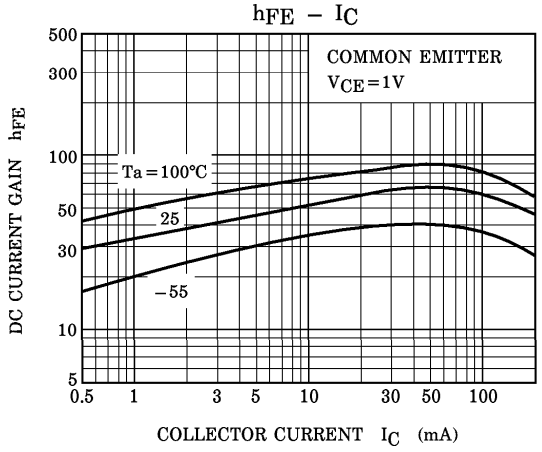
$I_C - V_{CE}$



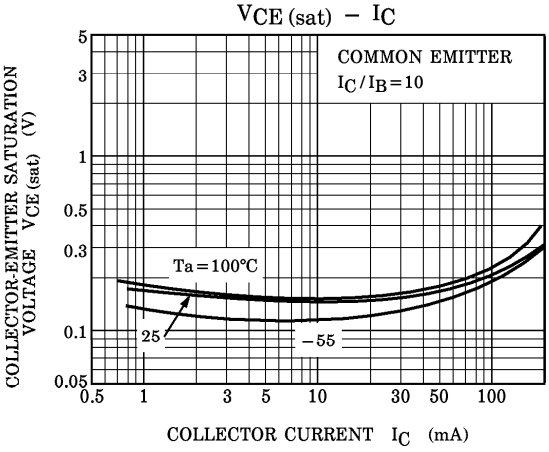
$I_C - V_{BE}$



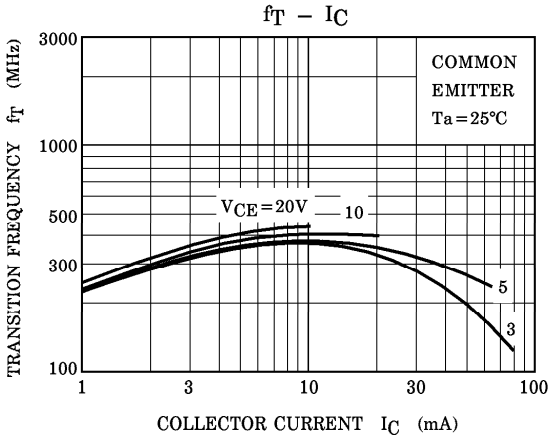
$h_{FE} - I_C$



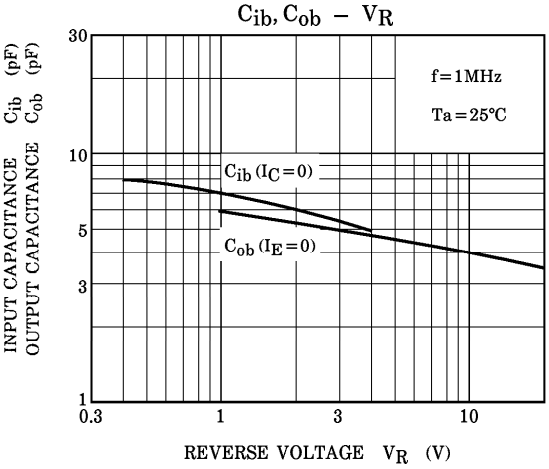
$V_{CE\,(sat)} - I_C$

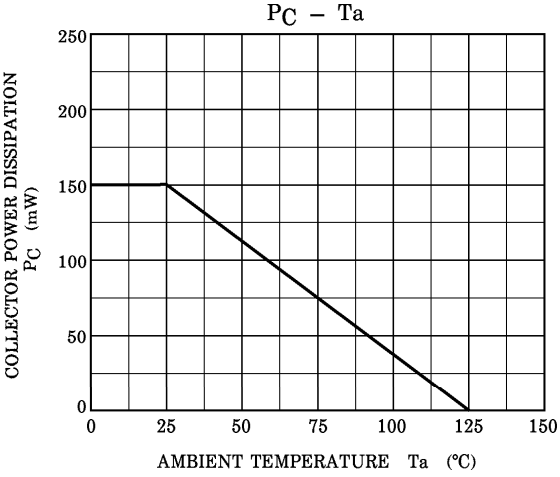


$f_T - I_C$



$C_{ib}, C_{ob} - V_R$




P_C – Ta
COLLECTOR POWER DISSIPATION P_C (mW)
250
200
150
100
50
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (°C)