

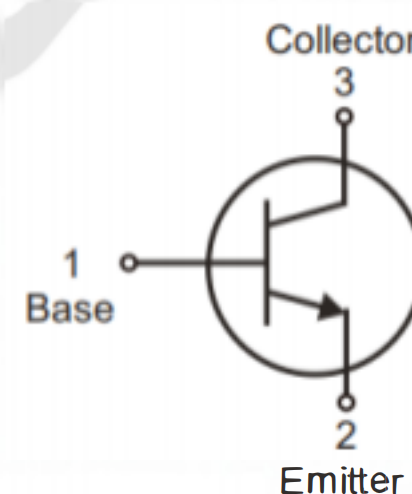
Features

- Ideally suited for automatic insertion.
- For switching and AF amplifier applications.

Mechanical data

- Case: SOT-323, molded plastic.
- Mounting position: Any.

Circuit Diagram



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Collector-base voltage	V_{CBO}	BC846BW/BC847BW: 80 BC848BW: 50	V
		BC848BW: 30	
Collector-emitter voltage		BC846BW/BC847BW: 65 BC848BW: 45 BC848BW: 30	V
Emitter-base voltage	V_{EBO}	BC846BW/BC847BW: 6 BC848BW: 5	
Collector current-continuous	I_C	0.1	A
Collector power dissipation	P_C	150	mW
Thermal resistance from junction to ambient	$R_{\theta JA}$	833	C/W
Operation junction and storage temperature range	T_{STG}	-55 to +150	C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage BC846BW BC847BW BC848B	V_{CBO}	$I_C = 10\mu A, I_E = 0$	80 50 30			V
Collector-emitter breakdown voltage BC846BW BC847BW BC848BW	V_{CEO}	$I_C = 10mA, I_B = 0$	65 45 30			V
Emitter-base breakdown voltage BC846BW BC847BW BC848BW	V_{EBO}	$I_E = 1\mu A, I_C = 0$	6 6 5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 30V$			15	nA
DC current gain BC846AW BC847AW BC848AW BC846BW BC847BW BC848BW BC847CW BC848CW BC846AW BC847AW BC848AW BC846BW BC847BW BC848BW BC847CW BC848CW	h_{FE}	$V_{CE} = 5V, I_C = 10\mu A$		90 150 270		
		$V_{CE} = 5V, I_C = 2mA$	110 200 420		220 450 800	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 0.5mA$ $I_C = 100mA, I_B = 5mA$			0.25 0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 0.5mA$ $I_C = 100mA, I_B = 5mA$		0.7 0.9		V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE} = 5V, I_C = 2mA$ $V_{CE} = 5V, I_C = 10mA$	580 -	660 -	700 770	mV
Transition frequency	f_T	$V_{CE} = 5V, I_C = 10mA$ $f = 100MHz$	100			MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, f = 1MHz$			4.5	pF
Noise figure BC846AW BC847AW BC848AW BC846BW BC847BW BC848BW BC847CW BC848CW	NF	$V_{CE} = 5V, I_C = 0.2mA,$ $f = 1KHz, R_s = 2K\Omega,$ $BW = 200Hz$			10 10 4	dB

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.1 - Static Characteristic

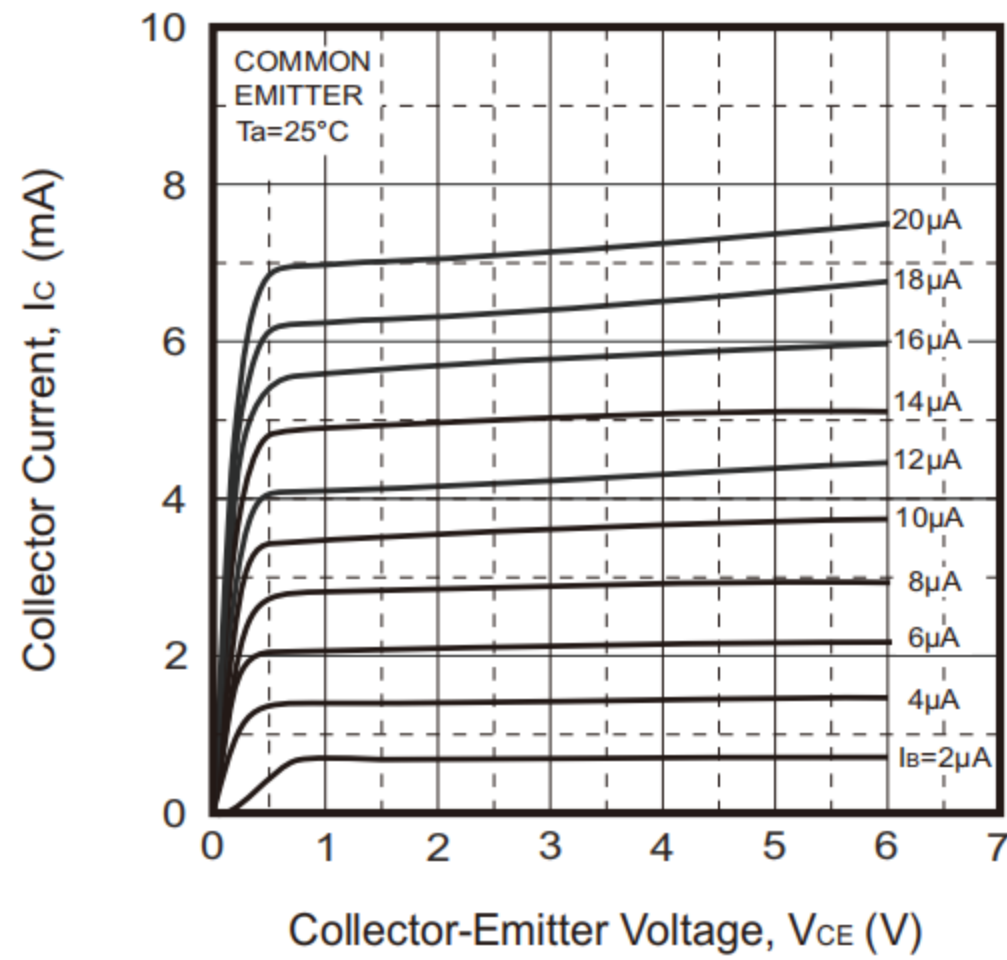


Fig.2 - $h_{FE} - I_C$

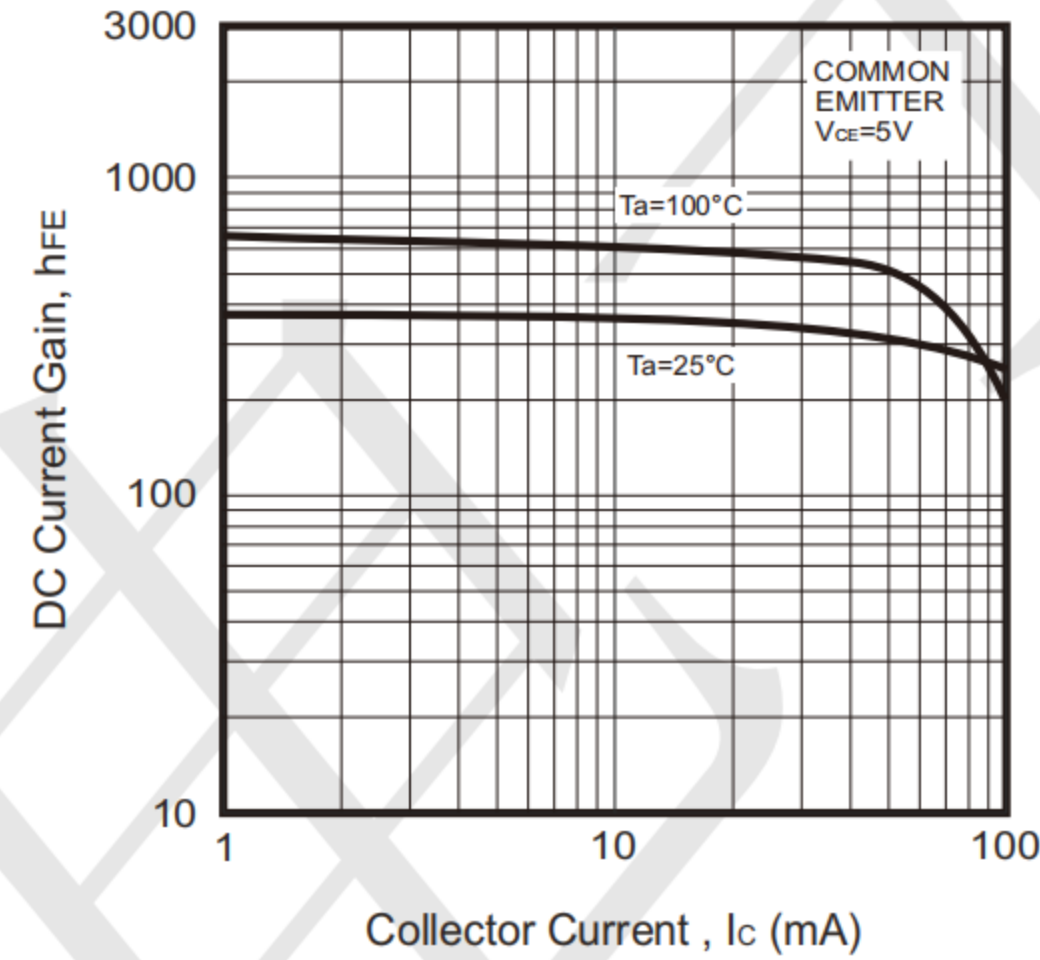


Fig.3 - $V_{BEsat} - I_C$

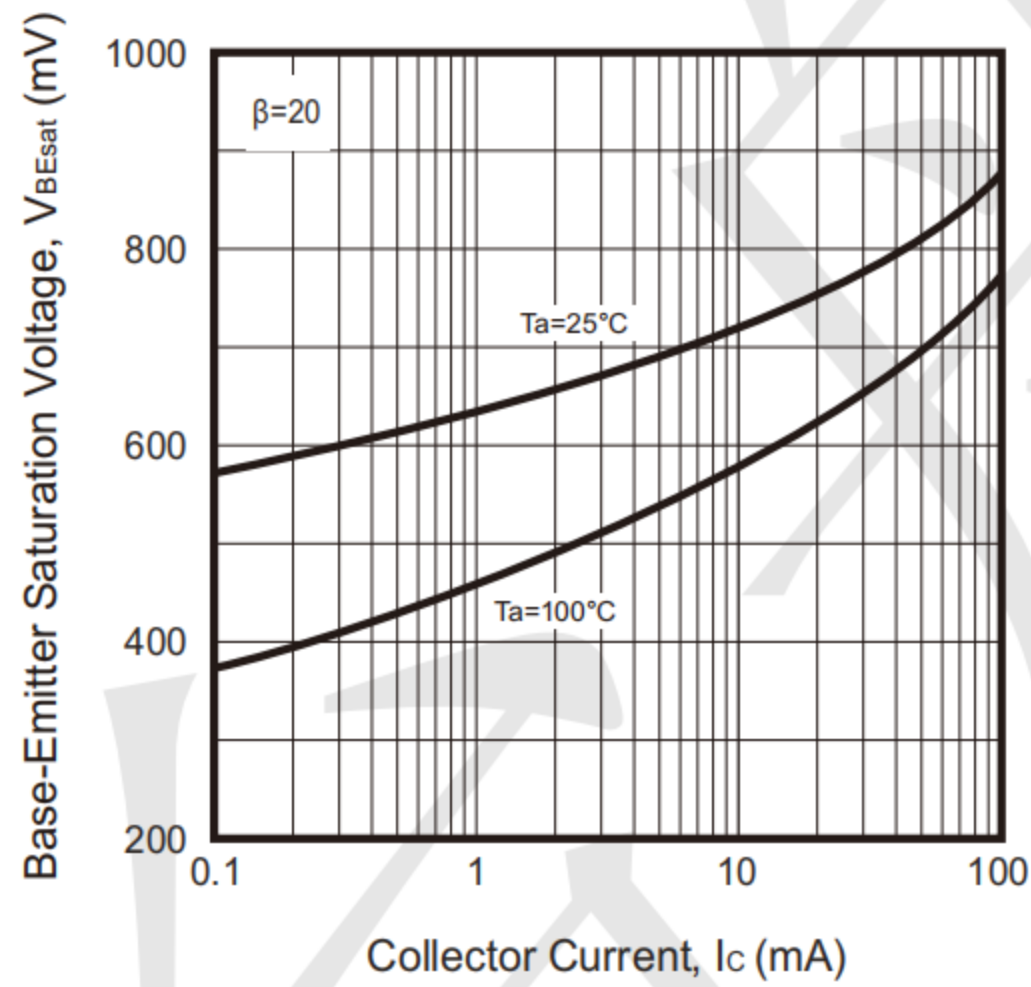
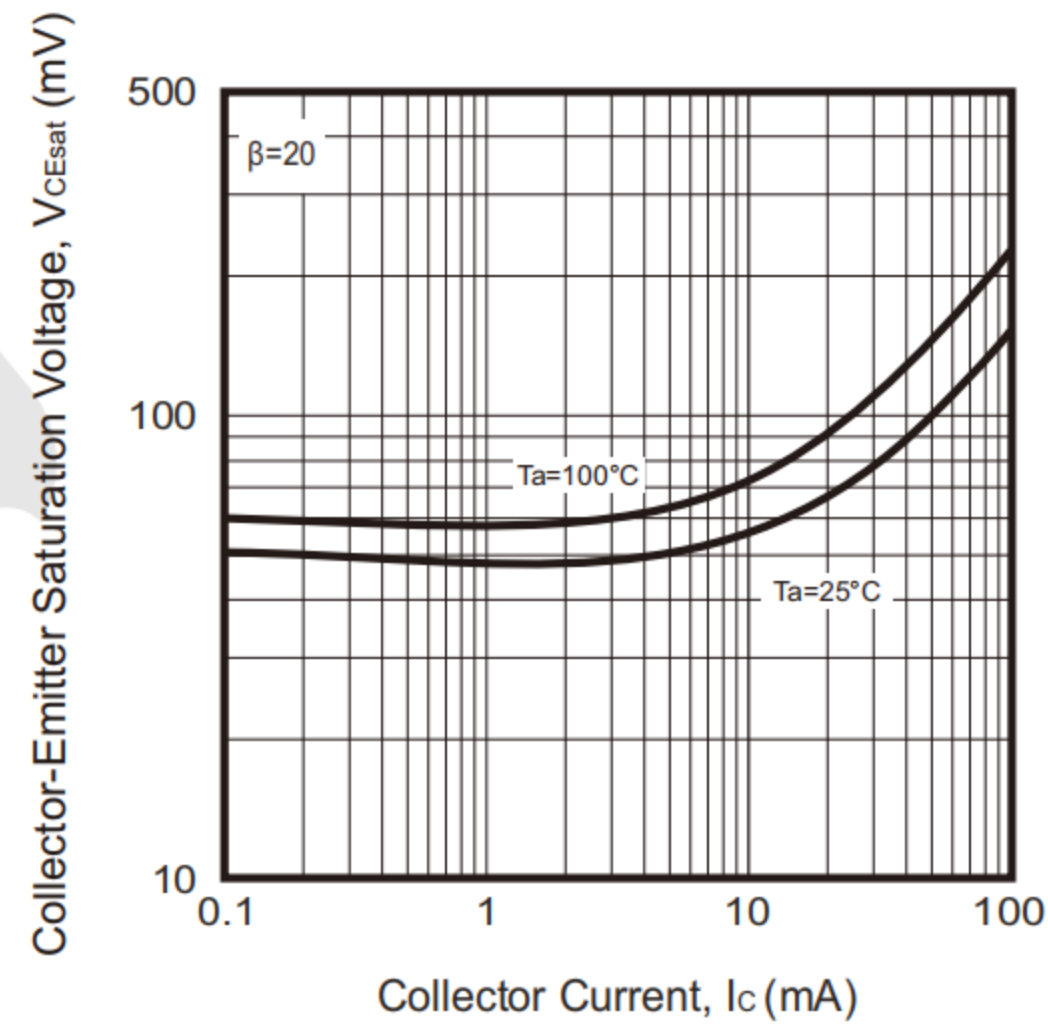


Fig.4 - $V_{CEsat} - I_C$



Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.5 - I_C — V_{BE}

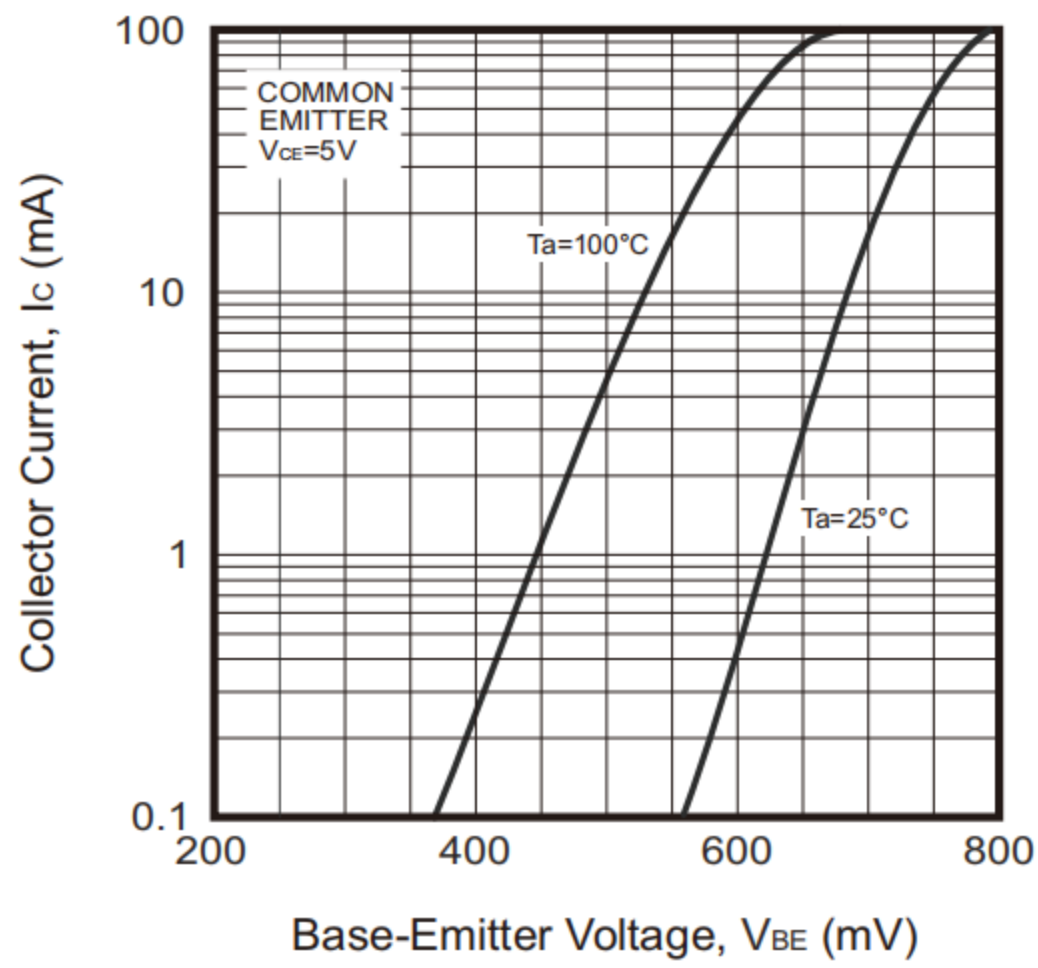


Fig.6 - f_T — I_C

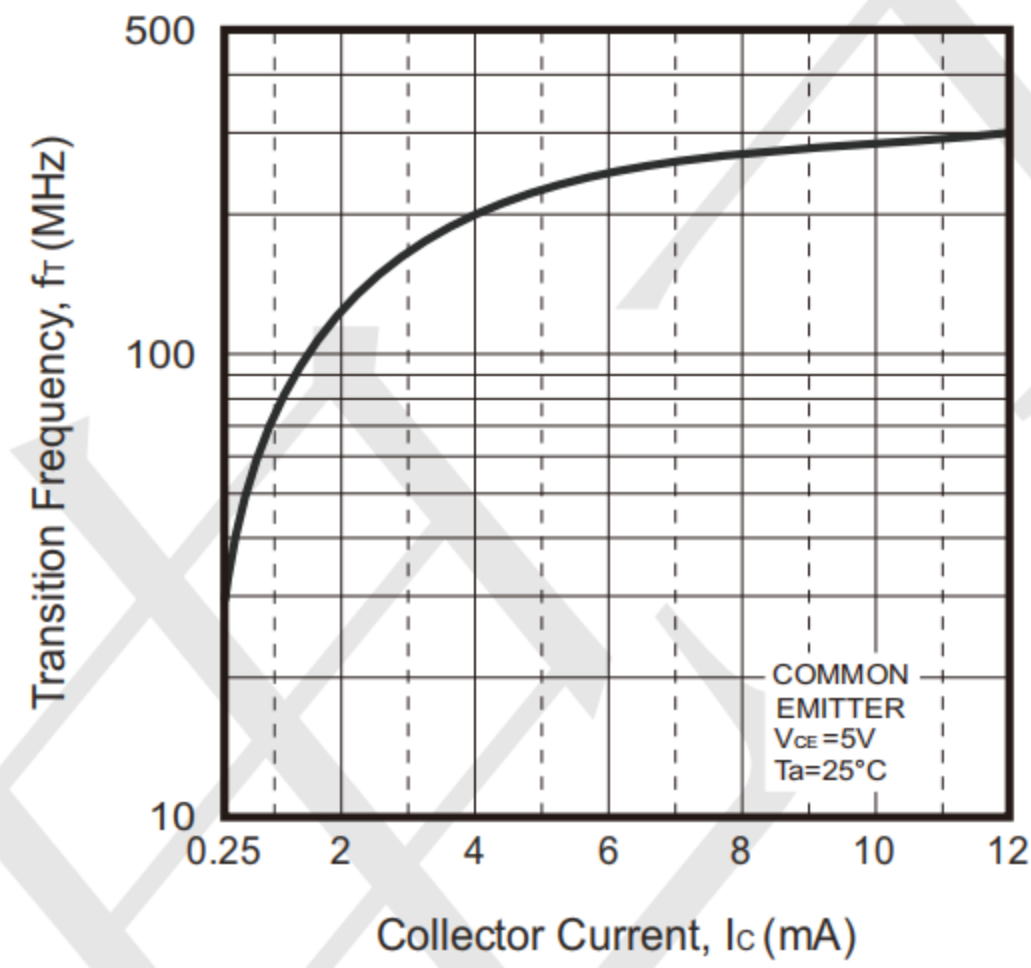


Fig.7 - C_{ob}/C_{ib} — V_{CB}/V_{EB}

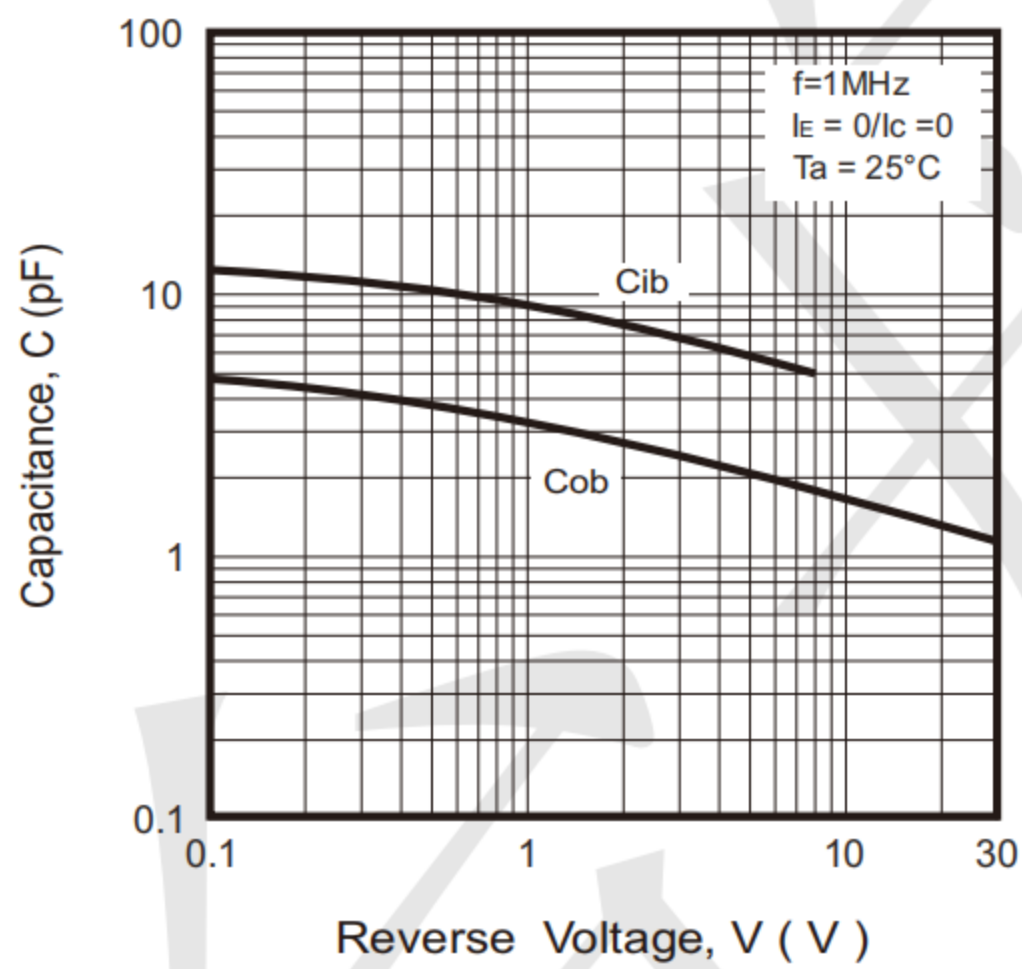
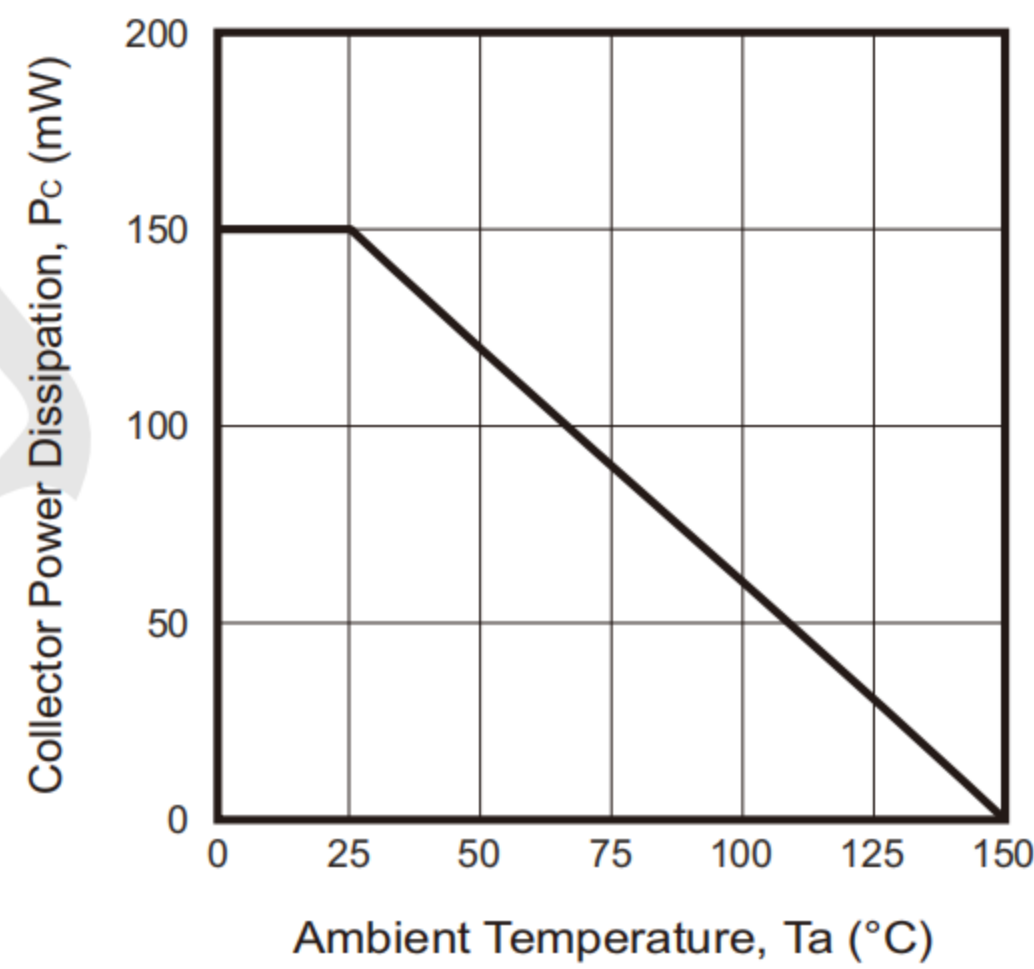
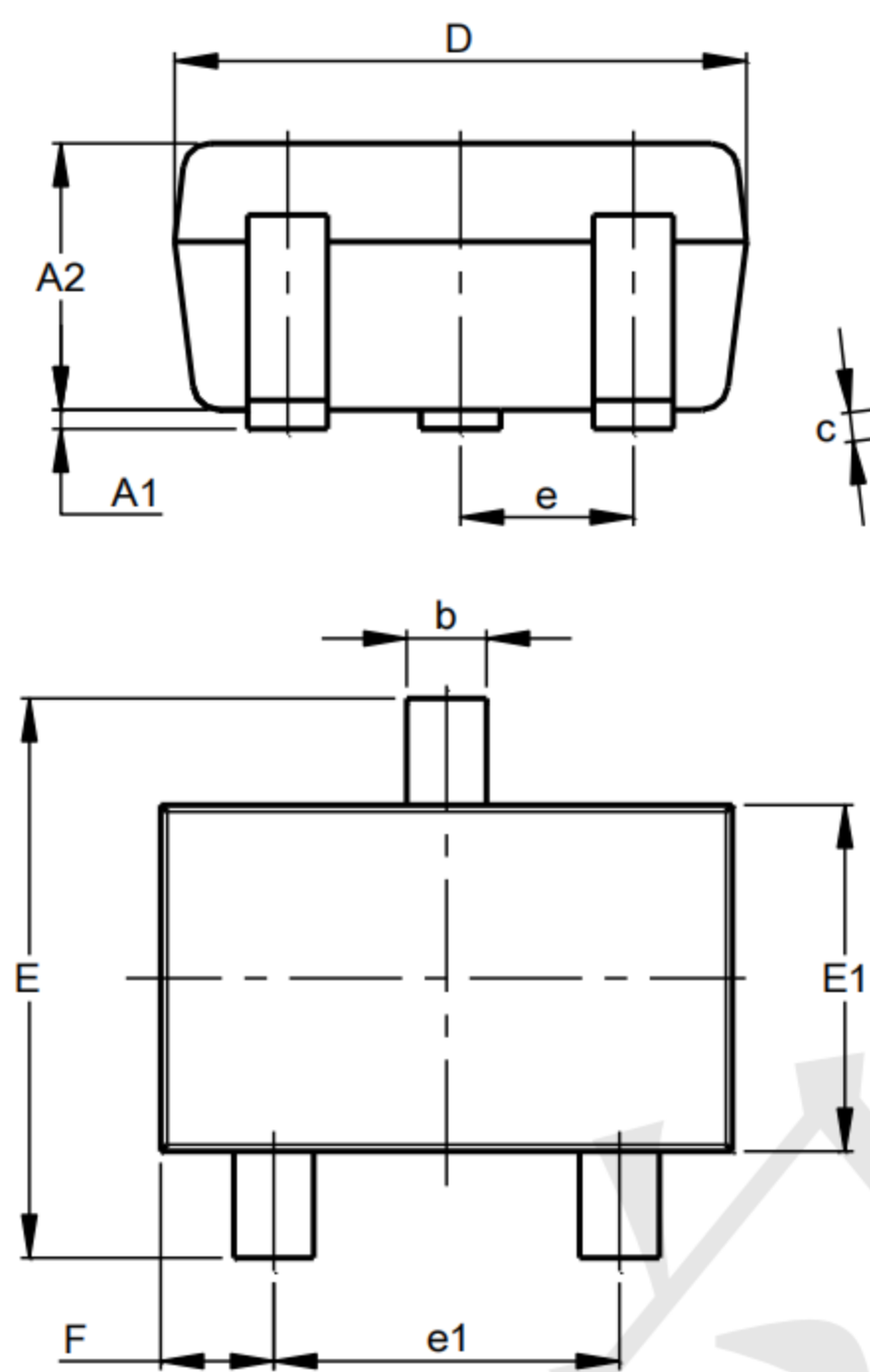


Fig.8 - P_C — T_A

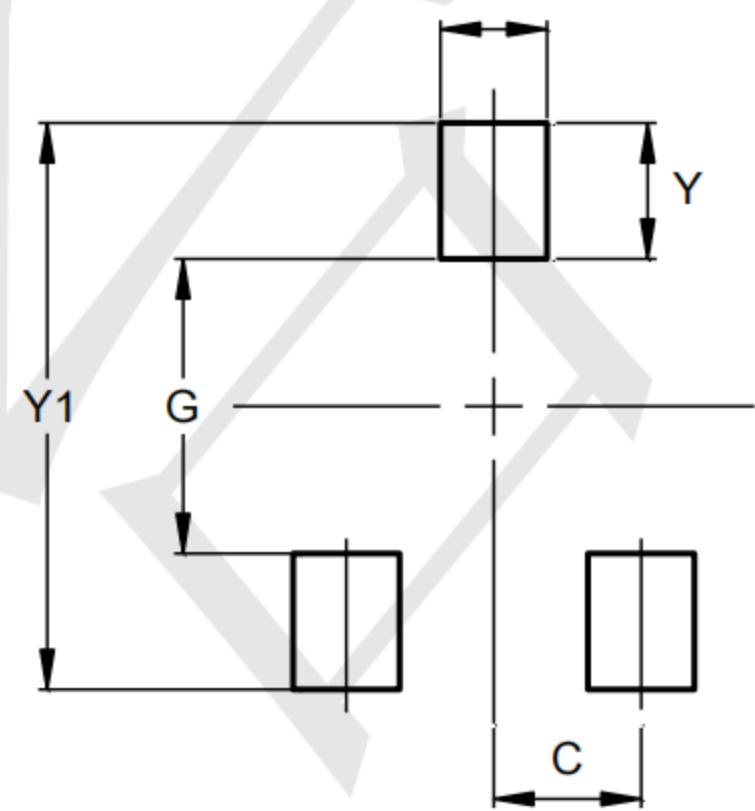


Outline Drawing - SOT323



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Land Pattern - SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500