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BC848BW

NPN Switching Transistor

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Features

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

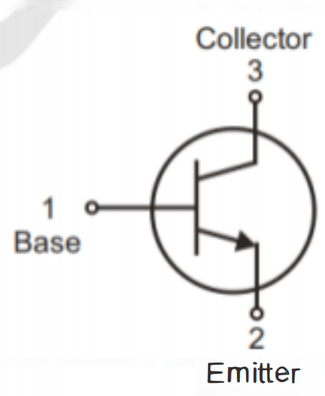
Mechanical data

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

SOT323



Circuit Diagram



Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter		Symbol	Value	Units
Collector-base voltage	BC846BW BC847BW BC848BW	V_{CBO}	80 50 30	V
Collector-emitter voltage	BC846BW BC847BW BC848BW	V_{CEO}	65 45 30	V
Emitter-base voltage	BC846BW / BC847BW BC848BW	V_{EBO}	6 5	V
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

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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 = 10μA, 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 vo tage	BC846BW BC847BW BC848BW	V_{EBO}	I_E = 1μA, 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		h_{FE}	V_{CE} = 5V, I_C = 10μA		90 150 270		
DC current gain BC846AW BC847AW BC848AW BC846BW BC847BW BC848BW BC847CW BC848CW		h_{FE}	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		Cob	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 = 2KΩ, BW = 200Hz			10 10 4	dB

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig.1 - Static Characteristic

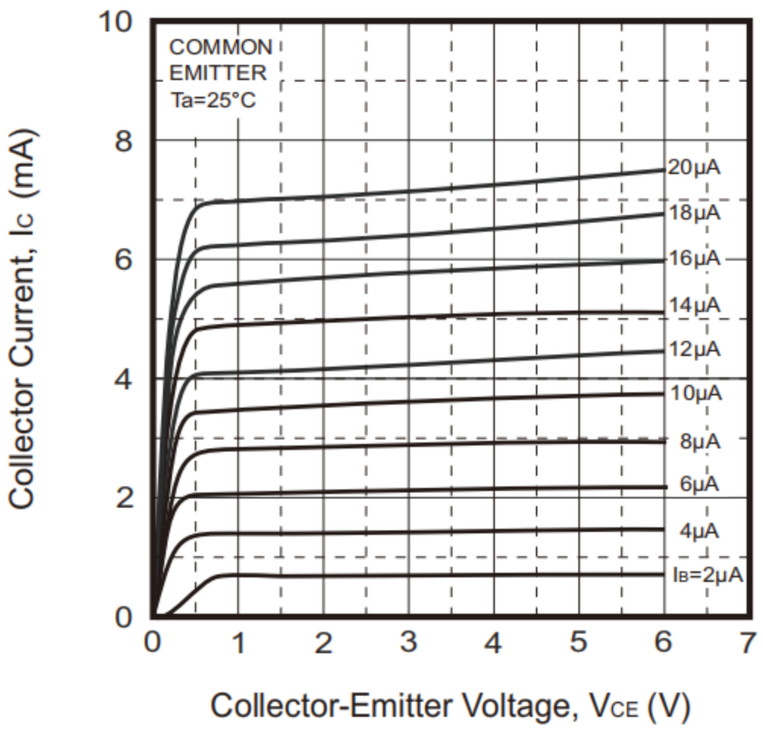


Fig.2 - h_{FE} — I_C

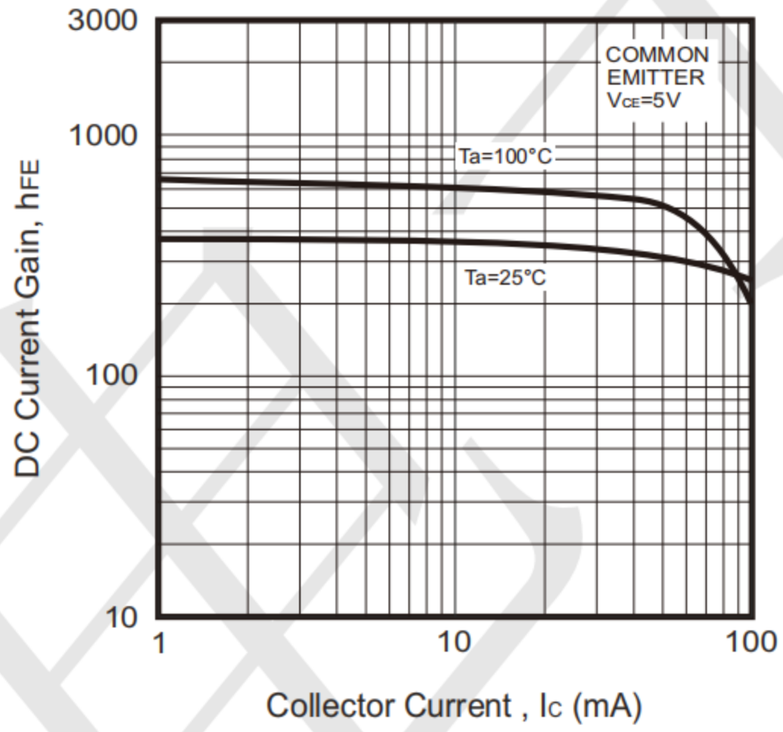


Fig.3 - V_{BEsat} — I_C

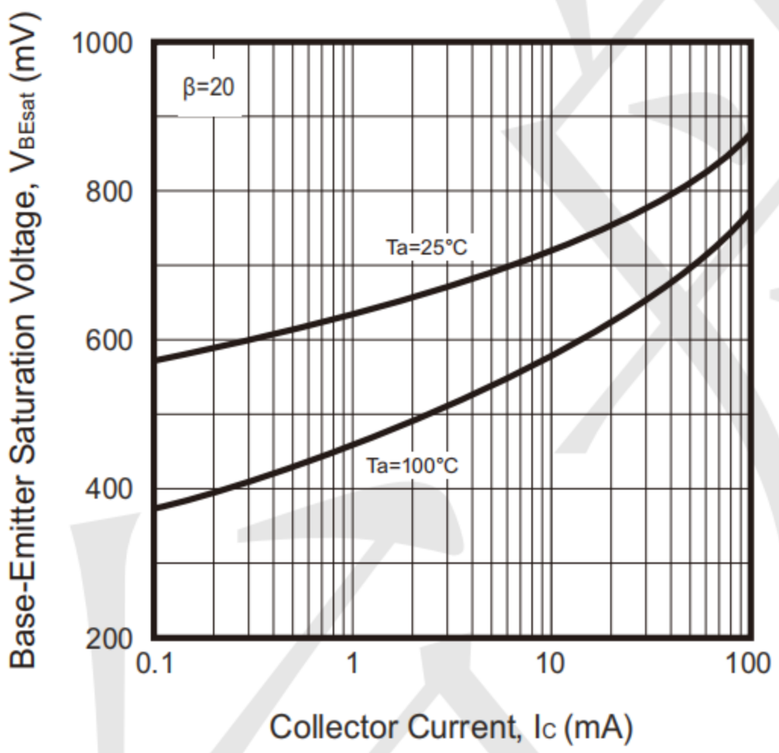
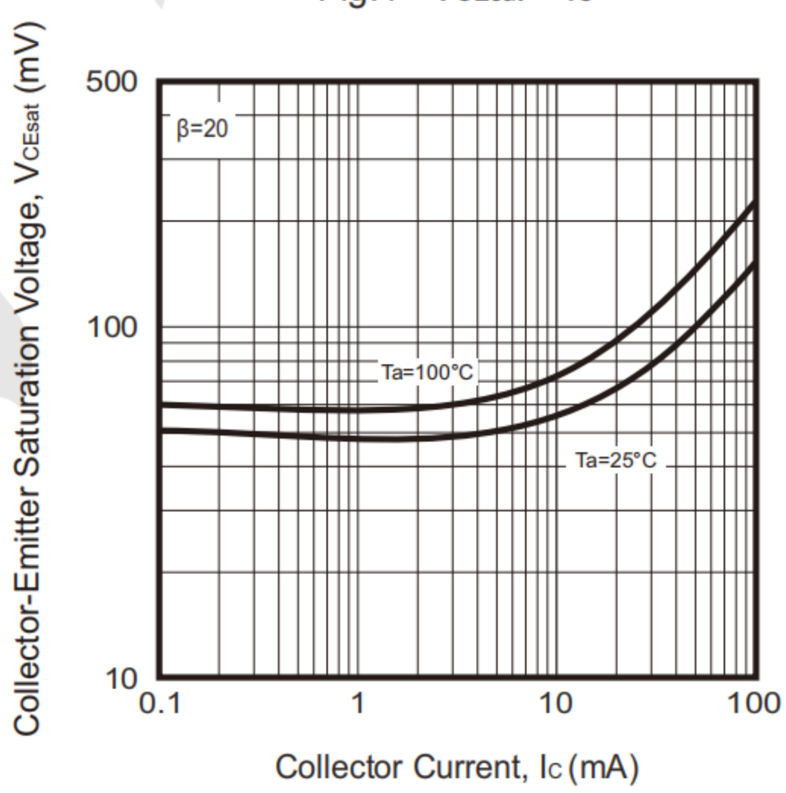


Fig.4 - V_{CEsat} — I_C



Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig.5 - I_C — V_{BE}

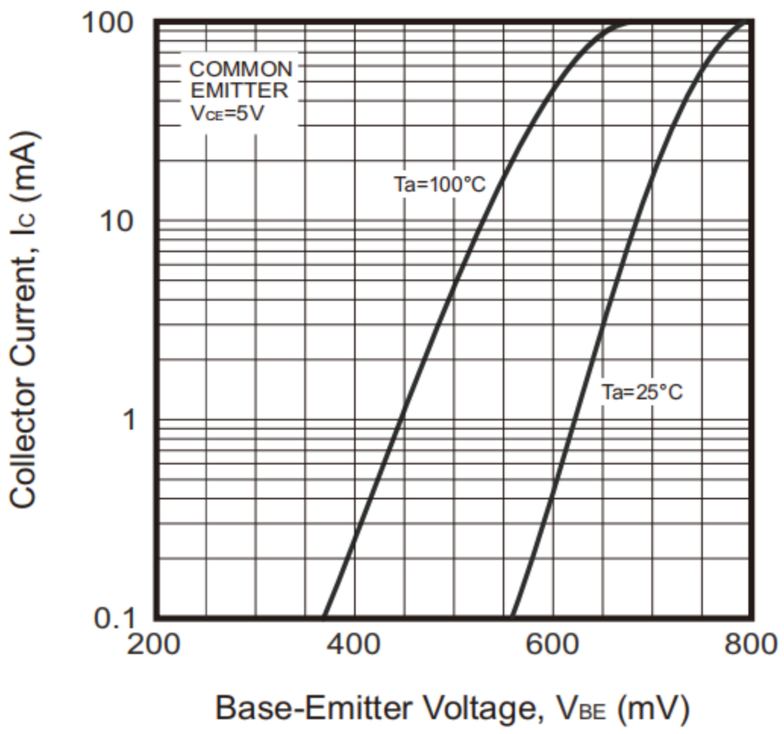


Fig.6 - f_T — I_C

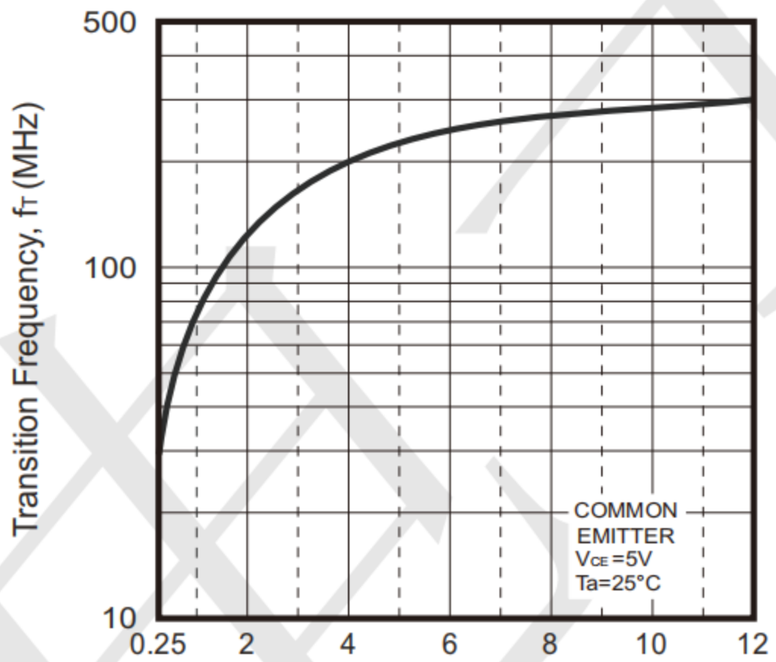


Fig.7 - Cob/Cib — V_{CB}/V_{EB}

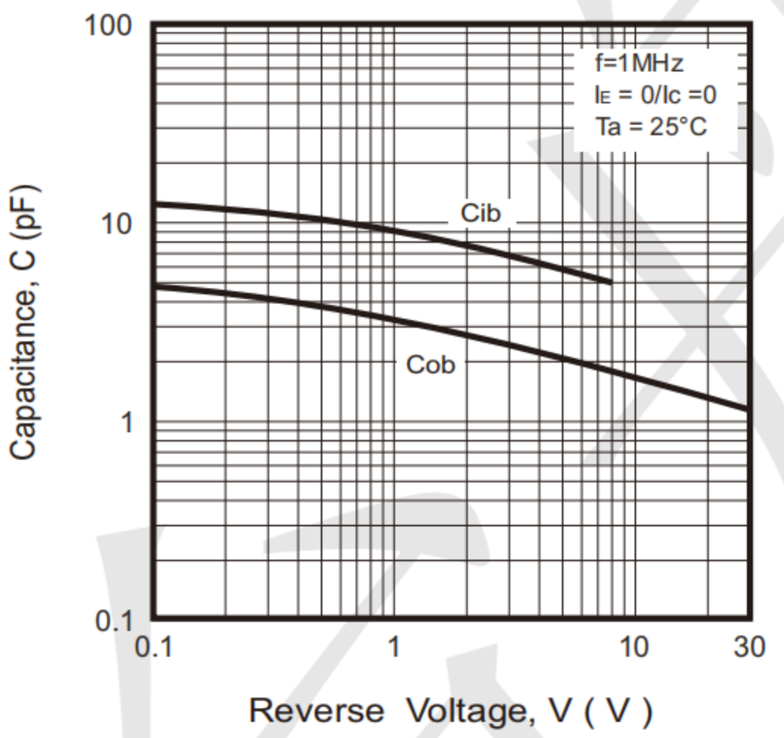
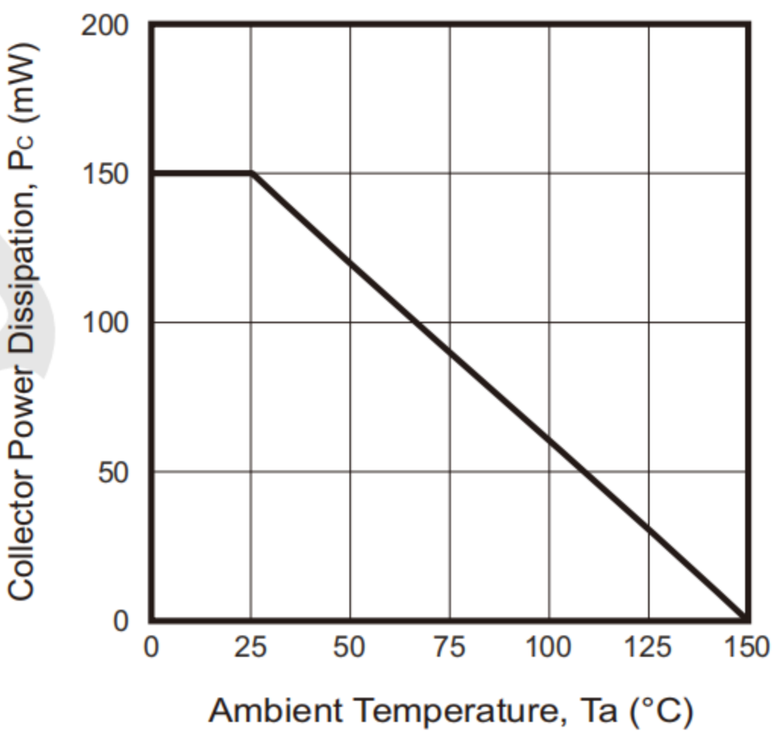
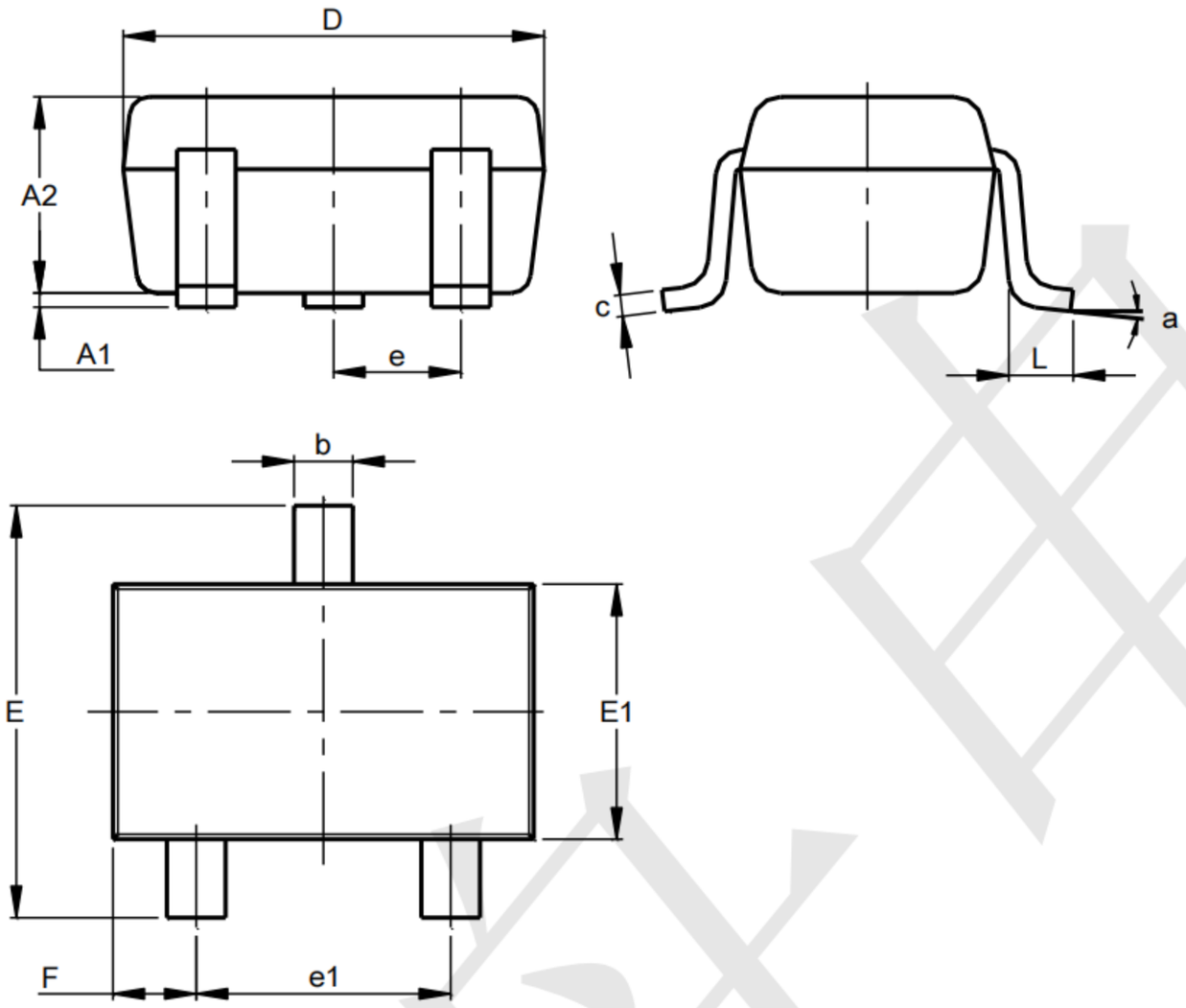


Fig.8 - P_C — Ta

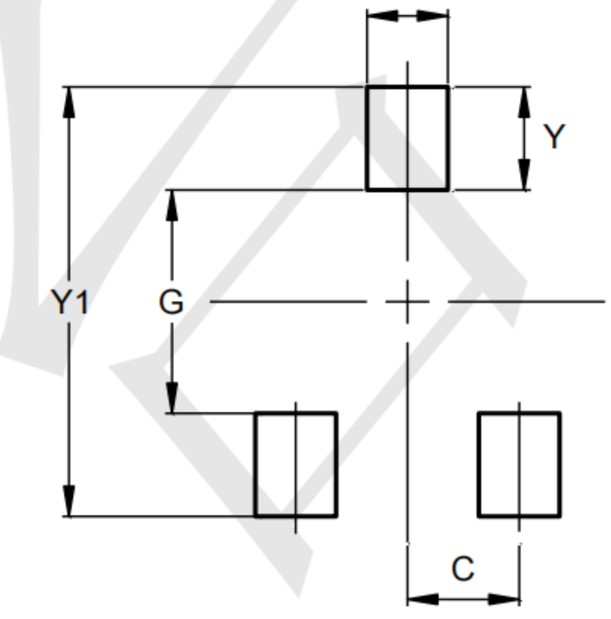


Outline Drawing - SOT323



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