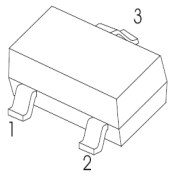
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO.,LTD

SOT-23 Plastic-Encapsulate Transistors

BC846 TRANSISTOR (NPN)
BC847
BC848

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

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

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage		V
	BC846	80	
	BC847	50	
	BC848	30	
V_{CEO}	Collector-Emitter Voltage		V
	BC846	65	
	BC847	45	
	BC848	30	
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current –Continuous	0.1	A
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃

DEVICE MARKING

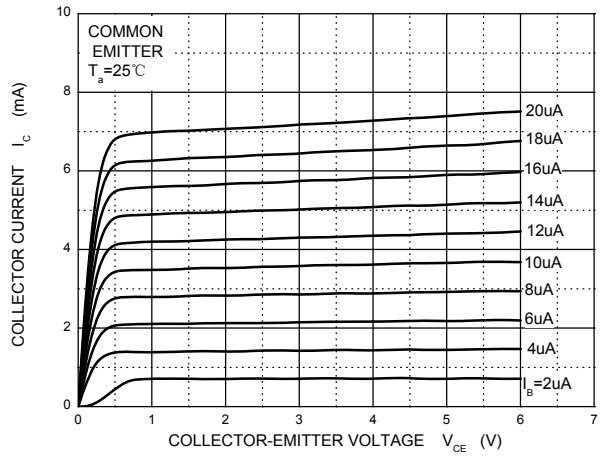
BC846A=1A; BC846B=1B;
BC847A=1E; BC847B=1F; BC847C=1G;
BC848A=1J; BC848B=1K: BC848C=1L

ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

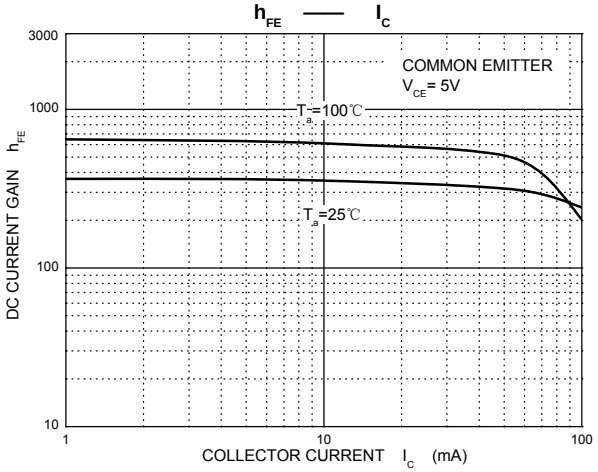
Parameter		Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	**BC846**	V_{CBO}	I_C= 10μA, I_E=0	80			V
	BC847			50			
	BC848			30			
Collector-emitter breakdown voltage	**BC846**	V_{CEO}	I_C= 10mA, I_B=0	65			V
	BC847			45			
	BC848			30			
Emitter-base breakdown voltage		V_{EBO}	I_E= 10μA, I_C=0	6			V
Collector cut-off current	**BC846**	I_{CBO}	V_{CB}=70 V , I_E=0			0.1	μA
	BC847		V_{CB}=50 V , I_E=0				
	BC848		V_{CB}=30 V , I_E=0				
Collector cut-off current	**BC846**	I_{CEO}	V_{CE}=60 V , I_B=0			0.1	μA
	BC847		V_{CE}=45 V , I_B=0				
	BC848		V_{CE}=30 V , I_B=0				
Emitter cut-off current		I_{EBO}	V_{EB}=5 V , I_C=0			0.1	μA
DC current gain	**BC846A,847A,848A**	h_{FE}	V_{CE}= 5V, I_C= 2mA	110		220	
	BC846B,847B,848B			200		450	
	BC847C,BC848C			420		800	
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=100mA, I_B= 5mA			0.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=100mA, I_B= 5mA			1.1	V
Transition frequency		f_T	V_{CE}= 5 V, I_C= 10mA f=100MHz	100			MHz
Collector output capacitance		C_{ob}	V_{CB}=10V,f=1MHz			4.5	pF

Typical Characteristics

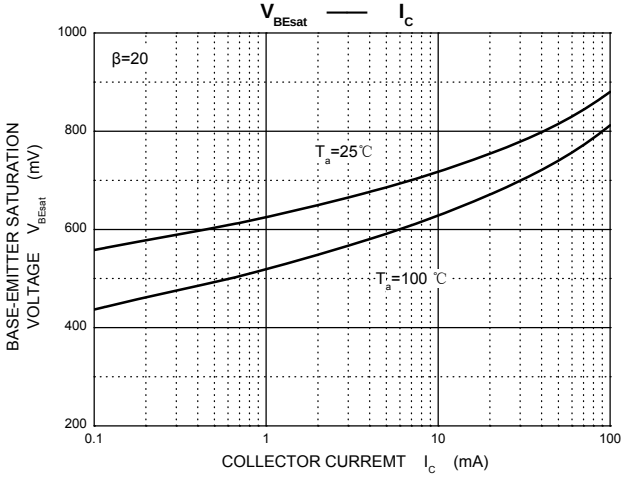
Static Characteristic



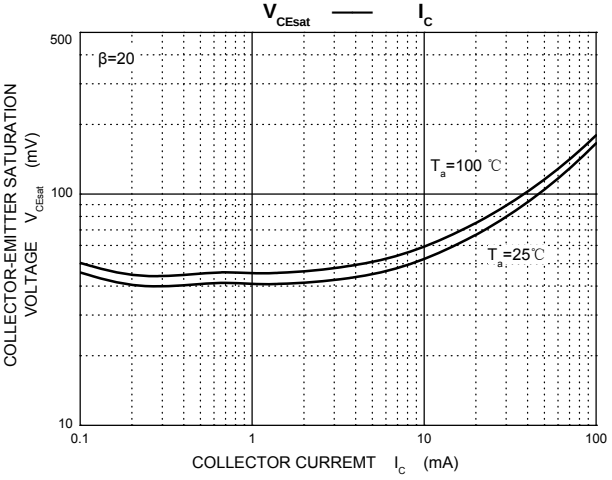
h_{FE} —— I_C



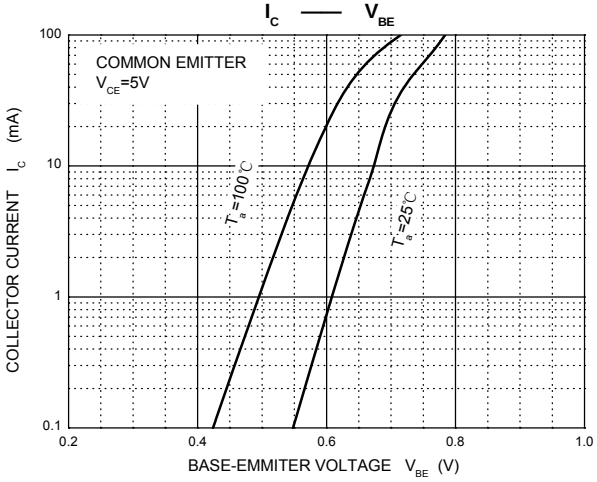
V_{BEsat} —— I_C



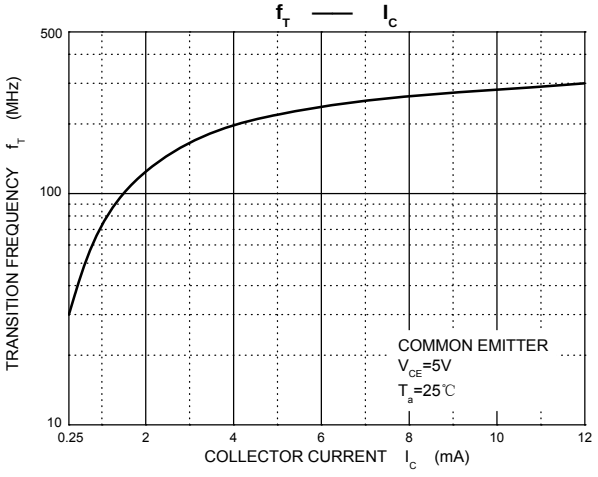
V_{CEsat} —— I_C



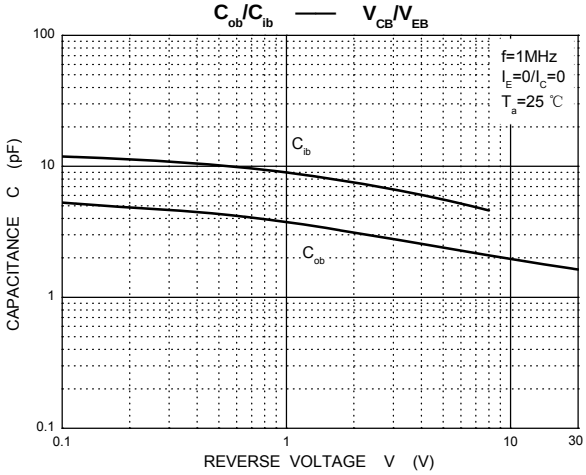
I_C —— V_{BE}



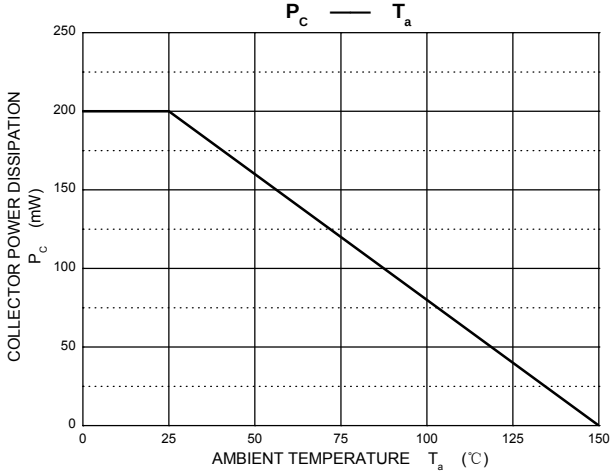
f_T —— I_C



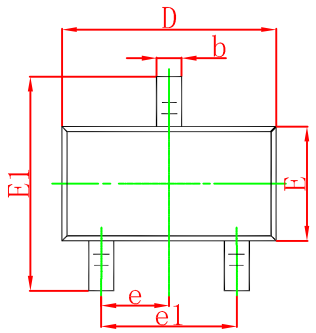
C_{ob}/C_{ib} —— V_{CB}/V_{EB}

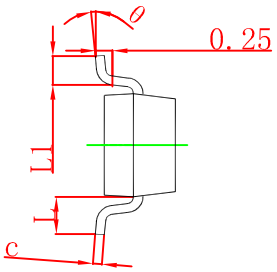


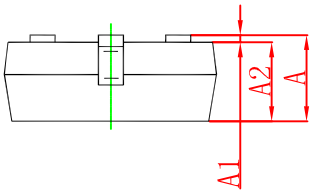
P_C —— T_a



SOT-23 Package Outline Dimensions

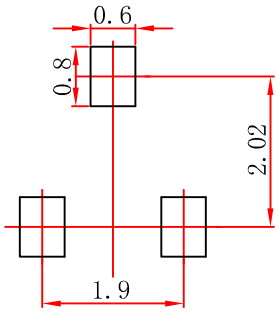






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout

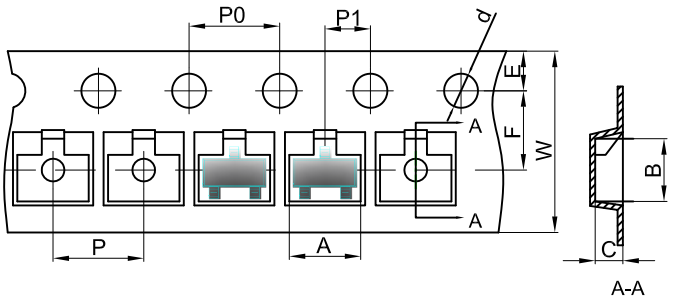


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications,enhancements, improvements, corrections or other changes without further notice to any product herein.JCET does not assume any liability arising out of the application or use of any product described herein.

SOT-23 Embossed Carrier Tape

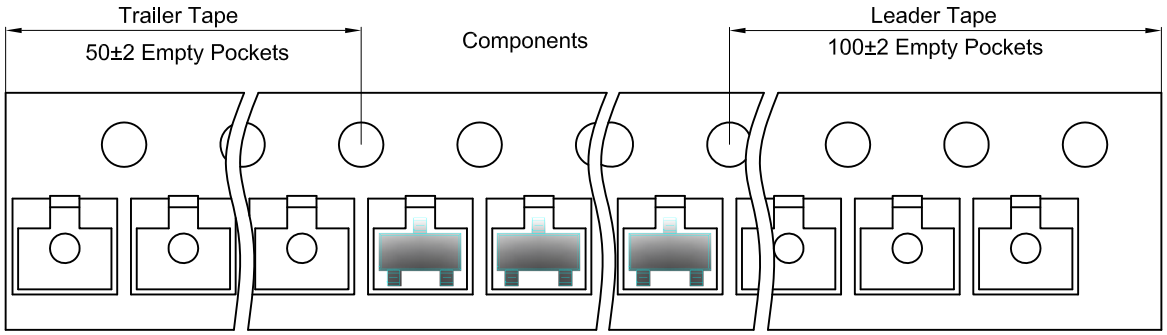


Packaging Description:

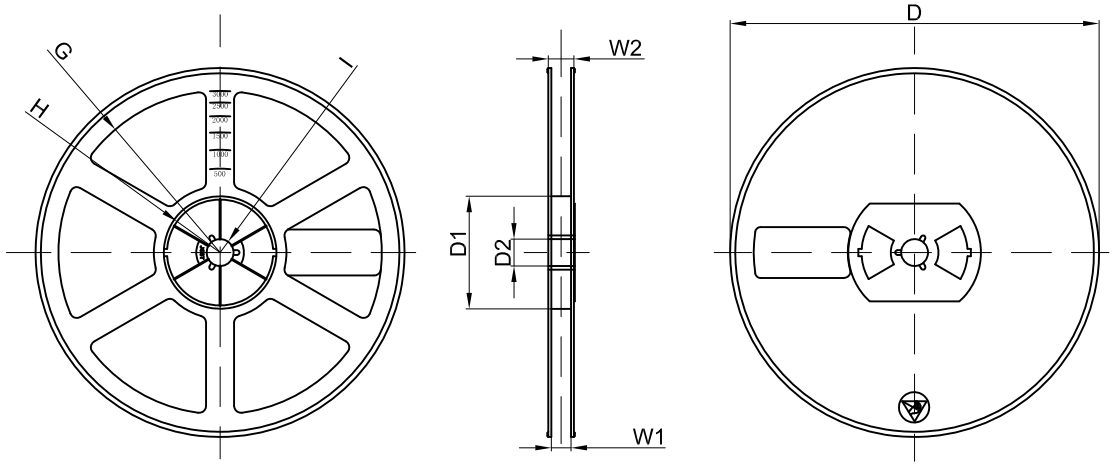
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	