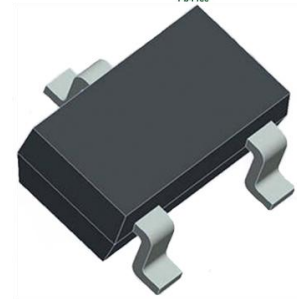


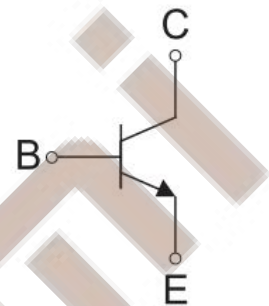
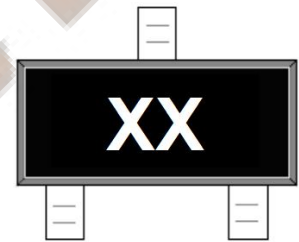
General Description

V_{CEO}	I_C	$V_{CE(sat)}$	f_T	T_{jMax}
45V	100mA	0.25V@$I_C=10mA$	100MHz	150°C
		0.6V@$I_C=100mA$		



Features

- SOT-523 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 3
- High temperature soldering guaranteed 260°C/10seconds
at terminals



Package Marking and Ordering Information

Product ID	Package	Marking	Qty(PCS)
BC847AT	SOT-523	1E	3000
BC847BT	SOT-523	1F	3000
BC847CT	SOT-523	1G	3000

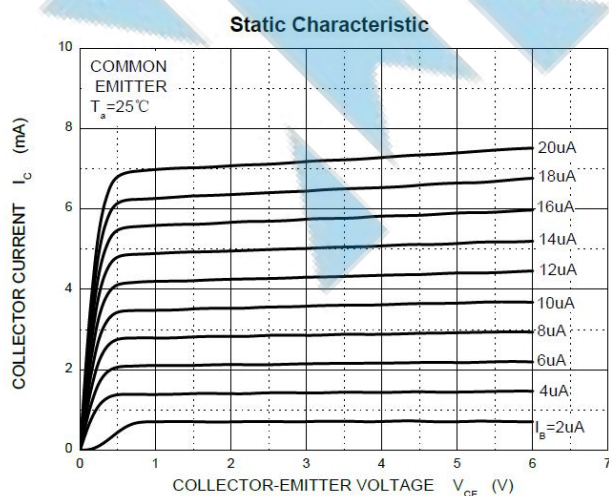
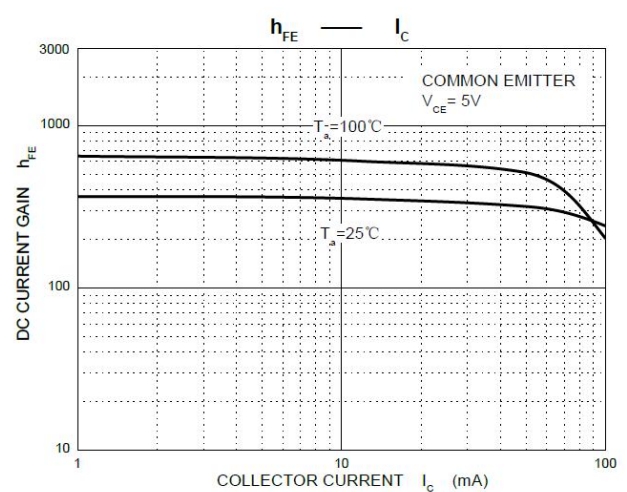
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

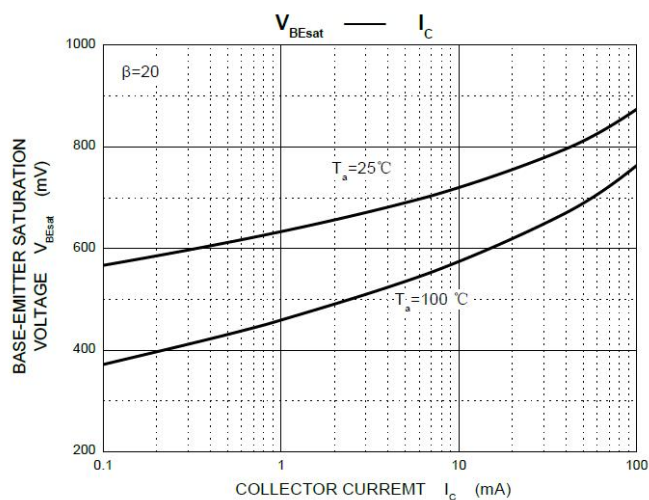
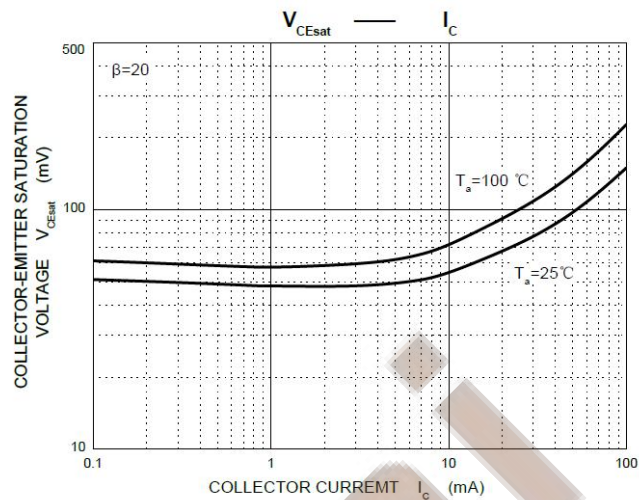
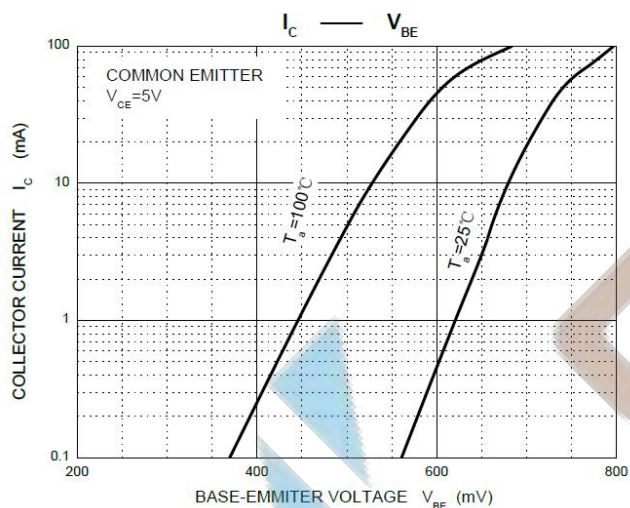
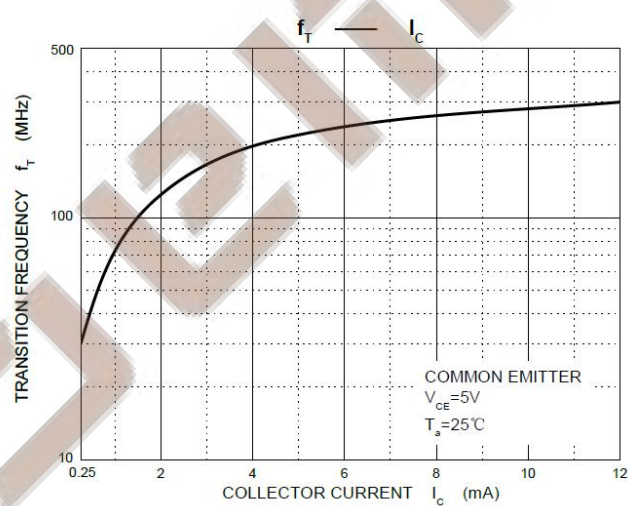
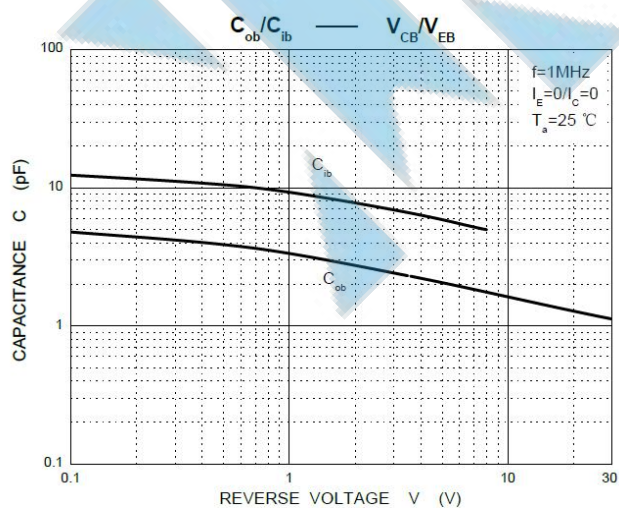
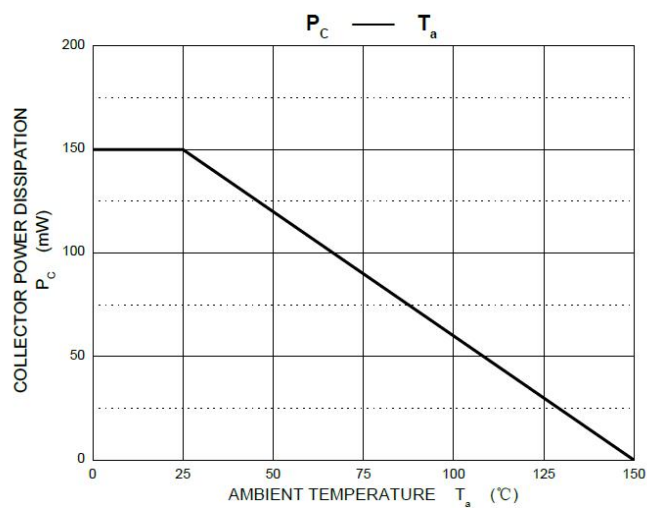
Parameter	Symbols	Value	Units
Collector-Base Voltage	VCBO	50	V
Collector-Emitter Voltage	VCEO	45	V
Emitter -Base Voltage	VEBO	6	V
Collector Current-Continuous	IC	100	mA
Collector Power Dissipation	PC	150	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55-+150	°C

Electrical Characteristics(Ta=25°C unless otherwise noted)

Parameter		Symbol	Conditions	Min.	Typ	Max.	Unit
Collector-base breakdown voltage		V(BR)CBO	IC=10uA, IE=0	50			V
Collector-emitter breakdown voltage		V(BR)CEO	IC=10mA, IB=0	45			V
Emitter-base breakdown voltage		V(BR)EBO	IE=1uA, IC=0	6			V
Collector cut-off current		ICBO	VCB=30V			15	nA
DC current gain	BC847AT	hFE	VCE=5V, IC=2mA	110		220	
	BC847BT			200		450	
	BC847CT			420		800	
Collector-emitter saturation voltage		VCE(sat)	IC=10mA, IB=0.5mA			0.25	V
			IC=100mA, IB=5mA			0.60	
Base -emitter saturation voltage		VBE(sat)	IC=10mA, IB=0.5mA		0.7		V
			IC=100mA, IB=5mA		0.9		
Base -emitter voltage		VBE(ON)	VCE=5V, IC=2mA	0.58	0.66	0.70	V
			VCE=5V, IC=10mA			0.77	
Transition frequency		fT	VCE=5V, IC=10mA, f=100MHz	100			MHz
Collector output capacitance		Cob	VCB=5V, IE=0, f=1MHz			4.5	pF
Noise figure	BC847BT	NF	VCE=5V, f=1MHz RS=2K Ω , BW=200Hz			10	dB
	BC847CT					4	

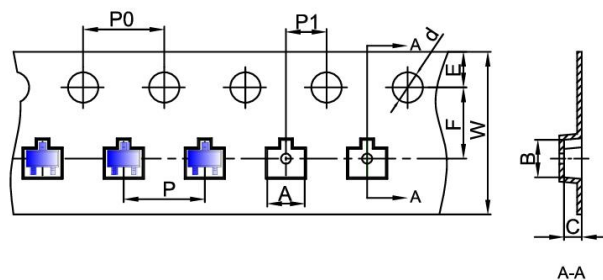
*Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2.0\%$

Typical characteristics




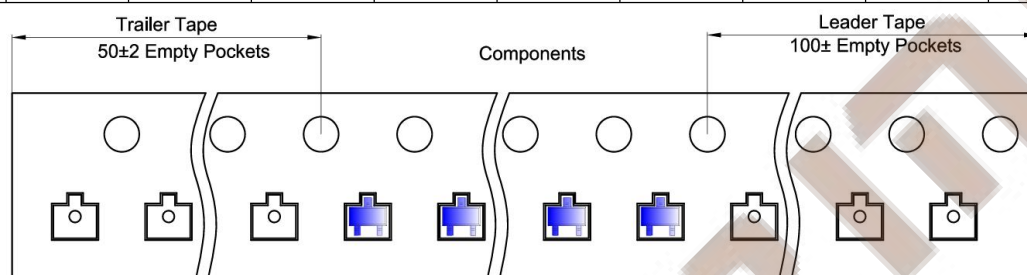
Package Information

Carrier Dimension(mm)

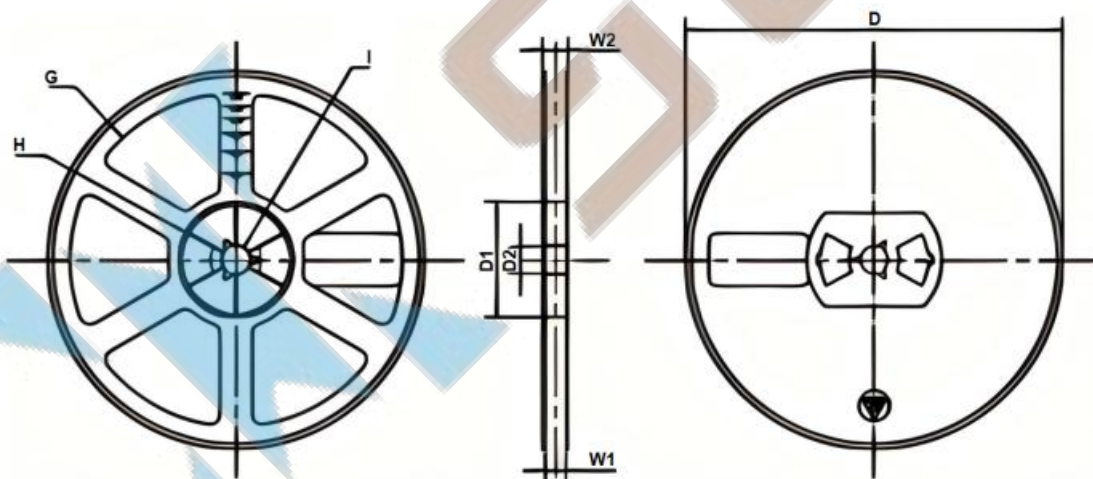


Dimensions are in millimeter

Pkg Type	A	B	C	d	E	F	P0	P	P1	W
SOT-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00



Reel Dimension(mm)



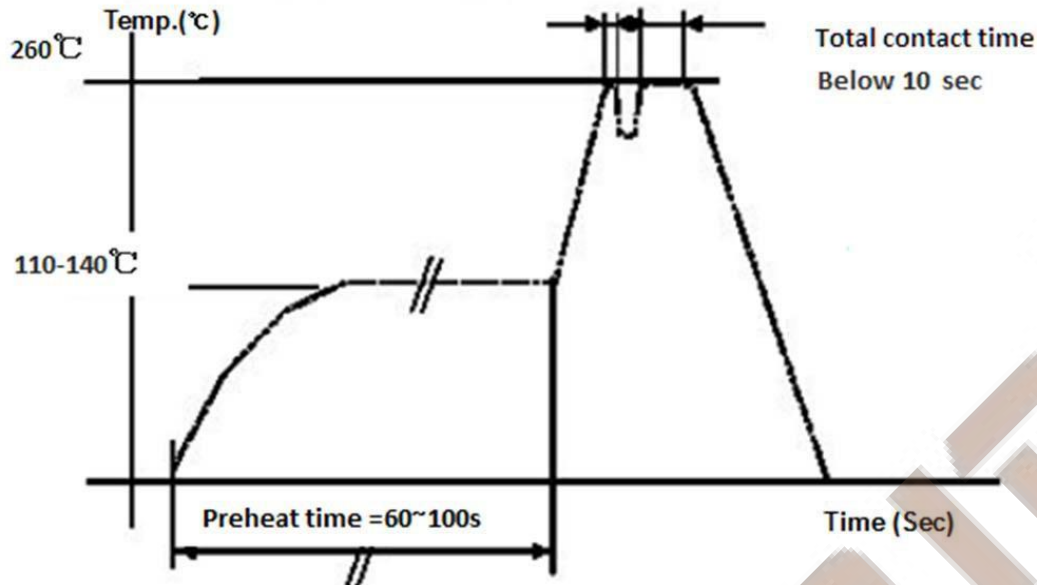
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

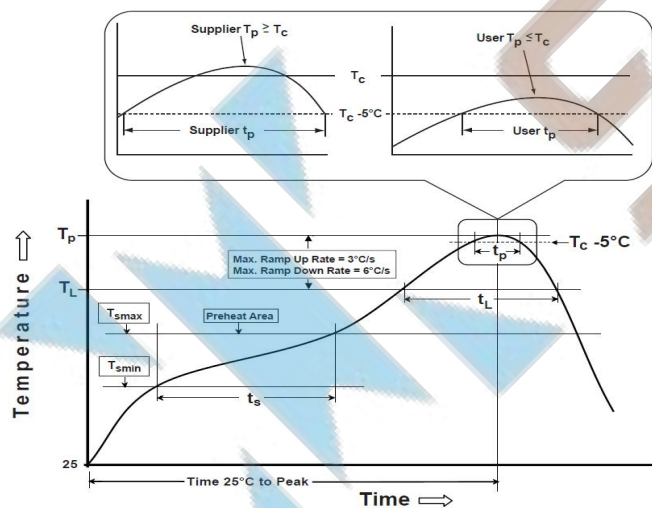
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT523	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



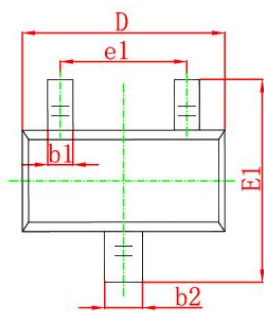
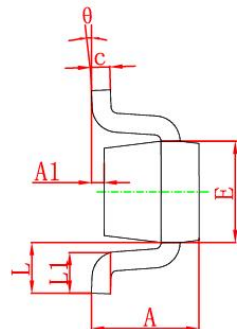
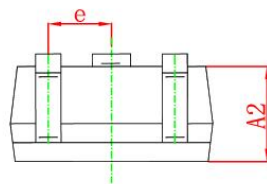
b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020



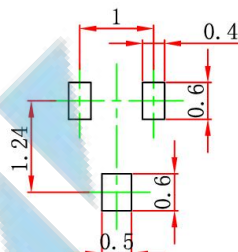
Preheat/Soak Temperature Min (T _{min}) Temperature Max (T _{max}) Time (ts) from (T _{min} to T _{max})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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