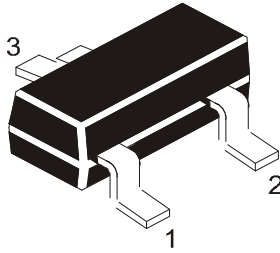
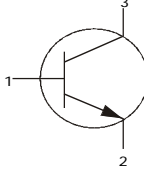


NPN SILICON PLANAR EPITAXIAL TRANSISTORS



PIN CONFIGURATION (NPN)

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



BC846, BC847, BC848

SOT-23

Formed SMD Package
For Lead Free Parts, Device Part # will be Prefixed with "T"

Marking

- BC846 =1D
- BC846A=1A
- BC846B=1B
- BC847 =1H
- BC847A=1E
- BC847B=1F
- BC847C=1G
- BC848 =1M
- BC848A=1J
- BC848B=1K
- BC848C=1L

For use in Driver Stages of Audio Amplifier in Thick and Thin-film Hybrid Circuits

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	BC846	BC847	BC848	UNITS
Collector Base Voltage	V_{CBO}	80	50	30	V
Collector Emitter Voltage ($V_{BE}=0V$)	V_{CES}	80	50	30	V
Collector Emitter Voltage	V_{CEO}	65	45	30	V
Emitter Base Voltage	V_{EBO}	6	6	5	V
Collector Current (DC)	I_C	100			mA
Collector Current - Peak	I_{CM}	200			
Emitter Current - Peak	$-I_{EM}$	200			mA
Base Current - Peak	I_{BM}	200			mA
Power Dissipation upto $T_{amb}=25^\circ\text{C}$	P_{tot}^*	250			mW
Storage Temperature	T_{stg}	- 55 to +150			$^\circ\text{C}$
Junction Temperature	T_j	150			$^\circ\text{C}$

THERMAL RESISTANCE

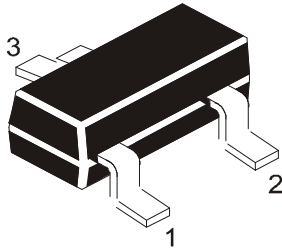
From junction to ambient	$R_{th(j-a)}^*$	500	K/W
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**Mounted on a ceramic substrate of 8mm x 10 mm x 0.7mm

BC846_848Rev_2 170407E

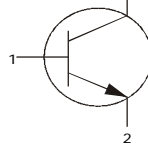
NPN SILICON PLANAR EPITAXIAL TRANSISTORS

BC846, BC847, BC848



PIN CONFIGURATION (NPN)

- 1 = BASE
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- 3 = COLLECTOR



SOT-23

Formed SMD Package

For Lead Free Parts, Device Part #
will be Prefixed with "T"

ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Cut off Current	I _{CBO}	V _{CB} =30V, I _E =0			15	nA
		V _{CB} =30V, I _E =0, T _j =150 °C			5	μA
Base Emitter on Voltage	V _{BE(on)} *	I _C =2mA, V _{CE} =5V	0.58		0.70	V
		I _C =10mA, V _{CE} =5V			0.77	
Collector Emitter Saturation Voltage	V _{CE(Sat)}	I _C =10mA, I _B =0.5mA			0.25	V
		I _C =100mA, I _B =5mA			0.60	
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
DC Current Gain	h _{FE}	I _C =10μA, V _{CE} =5V BC846A/BC847A/BC848A BC846B/BC847B/BC848B BC847C/BC848C		90 150 270		
		I _C =2mA, V _{CE} =5V BC846	110		450	
		BC847/BC848	110		800	
		BC846A/BC847A/BC848A	110		220	
		BC846B/BC847B/BC848B	200		450	
		BC847C/BC848C	420		800	
Collector Capacitance	C _c	I _E =I _E =0, V _{CB} =10V, f=1MHz		2.5		pF
Transition Frequency	f _T	I _C =10mA, V _{CE} =5V, f=100MHz	100			MHz
Noise Figure	NF	I _C =0.2mA, V _{CE} =5V R _s =2kΩ, f=1KHz, B=200Hz			10	dB

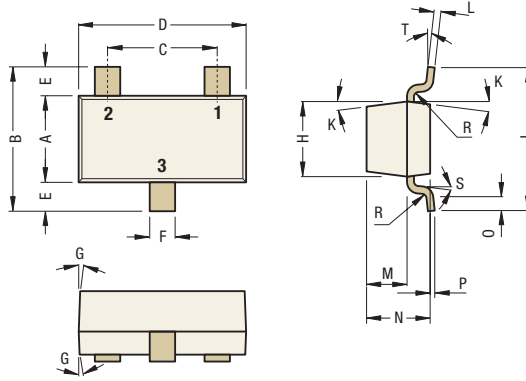
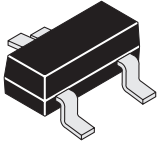
*V_{BE(on)} decreases by about 2mV/K with increasing temperature.

***V_{BE(sat)} decreases by about 1.7mV/K with increasing temperature.

BC846_848Rev_2 170407E

SOT-23
Formed SMD Package

SOT-23
SMD Plastic Package

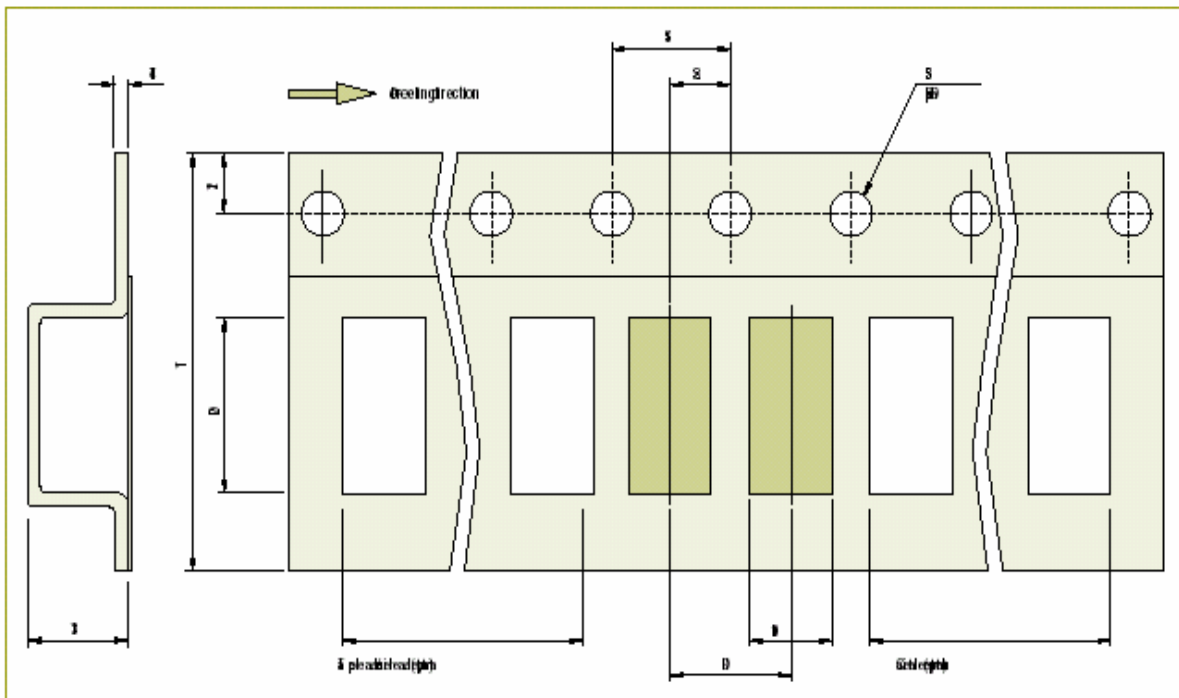


DIM	Min	Max
A	1.20	1.40
B	2.10	2.64
C	1.85	1.95
D	2.80	3.04
E	0.54	0.67
F	0.30	0.50
G	3°	
H	—	1.30
J	2.10	2.64

DIM	Min	Max
K	7°	
L	0.08	0.20
M	0.58	0.62
N	0.70	1.02
O	0.21	—
P	0.02	0.15
R	—	0.08
S	2°	8°
T	2°	10°

Pin Configuration Pin 1: Base Pin 2: Emitter Pin 3: Collector

Packaging Tape Specifications for SMD Packages



SMD Tape Specifications (8-12 mm)

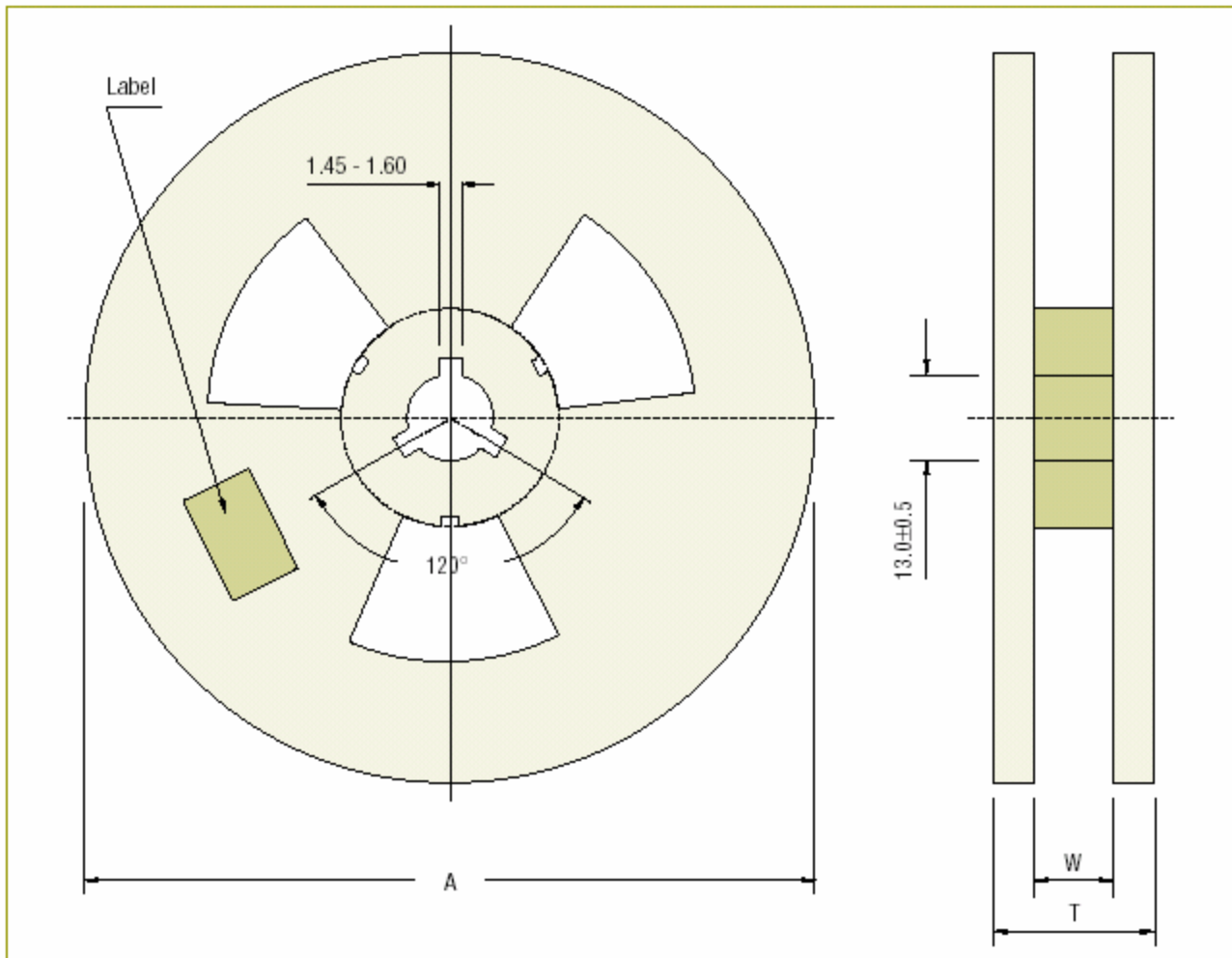
Device	D1	D2	D3	T1	T2	T3	T4	S1	S2	S3
						Max	Max			Dia
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
SOT-23	3.2±0.1	2.8±0.1	4.0±0.1	8.0±0.2	1.75±0.1	1.60	0.35	4.0±0.1	2.0±0.1	1.5±0.1

Packaging Specifications ...

T & A: Tape and Ammo Pack; T & R: Tape and Reel; Bulk: Loose in Poly Bags; Tube: Tube and Carton; K: 1,000

Package / Case Type	Packaging Type	Std. Packing	Inner Carton			Outer Carton		
		Qty	Qty	Size L x W x H (cm)	Gross Weight (Kg)	Qty	Size L x W x H (cm)	Gross Weight (Kg)
SOT-23	T & R	3,000	15K	19 x 19 x 8	0.6	51K	23 x 23 x 23	2.2
	T & R	3,000	15K	19 x 19 x 8	0.6	408K	48 x 48 x 51	20.2
	T & R	10,000	50K	35.5 x 35.5 x 8.9	2.4	350K	48 x 48 x 51	19.2

Reel Specifications for SMD Packages



Reel Specifications

Package	Tape	Reel Dia.	Devices per Reel and MOQ	Inside	Reel
	Width			Thickness	Thickness
		A - Max		W	T - Max
SOT-23	8	180	3,000	8.4±2	14.4
	8	330	10,000	8.4±2	14.4

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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