

Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company





SOT-23 Formed SMD Package

BCX19 BCX20

SILICON PLANAR EPITAXIAL TRANSISTORS

N-P-N transistors

Marking

BCX19 = U1

BCX20 = U2

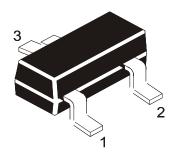
Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR





ABSOLUTE MAXIMUM RATINGS

			BCX19	BCX	20
Collector-emitter voltage ($V_{BE} = 0$)	$V_{C\!E\!S}$	max.	50	30	V
Collector-emitter voltage (open base)	V_{CE0}	max.	45	25	V
Collector current (peak value)	I_{CM}	max.	1000		mA
Total power dissipation up to $T_{amb} = 25 ^{\circ}C$	P_{tot}	max.	250		mW
Junction temperature	T_{j}	max.		150	
D.C. current gain	3				
$I_{C:}$ 100 mA; $V_{CE} = 1 V$	h_{FE}		100 to 600		
Transition frequency					
$I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}; f = 35 \text{ MHz}$	f_T	typ.	2	200	MHz

RATINGS (at $T_A = 25^{\circ}C$ unless otherwise specified) Limiting values

Liming values		BCX19		BCX2	BCX20	
Collector-emitter voltage ($V_{BE} = 0$)	$V_{C\!E\!S}$	max.	50	30	\overline{V}	
Collector-emitter voltage (open base)						
$I_C = 10 \text{ mA}$	V_{CE0}	max.	45	25	V	
Emitter-base voltage (open collector)	V_{EB0}	max.	5	5	V	
Collector current (d.c.)	I_C	max.	500		mA	
Collector current (peak value)	I_{CM}	max.	1000		mA	
Emitter current (peak value)	$-I_{EM}$	max.	1000			
Base current (d.c.)	l_B	max.	100		mA	
Base current (peak value)	I_{BM}	max.	2	200	mA	
Total power dissipation up to $T_{amb} = 25 ^{\circ}C^{*}$	P_{tot}	max.	250		mW	
Storage temperature	T_{stg}		−55 to +150		$^{\circ}$ C	
Junction temperature	T_j	max.	1	50	° C	
THERMAL RESISTANCE		D.	,	700	1711	
From junction to ambient		R _{th j-a}	a = 5	500	KW	
CHARACTERISTICS						
$T_j = 25$ °C unless otherwise specified						
Collector cut-off current						
$I_E = 0$; $V_{CB} = 20 V$	I_{CB0}	<	1	00	nA	
$IE = 0; V_{CB} = 20V; T_j = 150^{\circ} C$	I_{CB0}	<		5	μA	
Emitter cut-off current						
$I_C = 0; V_{EB} = 5 V$	I_{EBO}	<		10	μA	
Base emitter voltage ·						
$I_C = 500 \text{ mA}; V_{CE} = 1 \text{ V}$	V_{BE}	<	j	1,2	V	
Saturation voltage						
$I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$	V_{CEsat}	<	6	320	mV	
D.C. current gain						
$I_C = 100 \text{ mA}; V_{CE} = 1 \text{ V}$	h_{FE}		100	to 600		
$I_C = 300 \text{ mA}; V_{CE} = 1 \text{ V}$	h_{FE}	>		70		
$I_C = 500 \text{ mA}; V_{CE} = 1 \text{ V}$	h_{FE}	>	•	40		
Transition frequency at $f = 35$ MHz						
$I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	f_T	typ.	2	200	MHz	
Collector capacitance at $f = 1$ MHz						
$I_E = I_e = 0; -V_{CB} = 10 V$	C_c	typ.		5	pF	

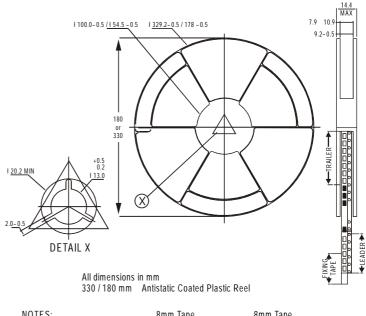
SOT-23 Formed SMD Package

2.50 +/- 0.10 +/- 0.05 0.62 1.30----+/-0.05 0.62 +/-0.025 1.90 cL 3 - 0.05 - 1.30 +/- 0.05 0.62 J← 0.62 0.08 0.08 MIN MIN PARTING LINE RO.08

2.50 +/-0.10

0.21

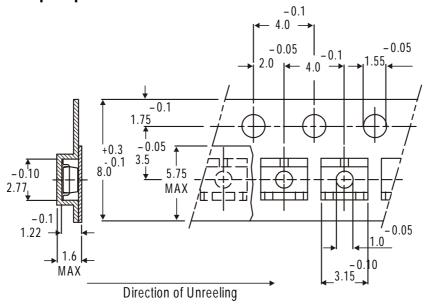
SOT-23 Package Reel Information Reel specifications for Packing (13"/7" reels)



 NOTES:
 8mm Tape
 8mm Tape
 Size of Reel
 Size of Reel
 Size of Reel
 180 mm (7")
 180 mm (7")
 180 mm (7")
 3,000 Pcs
 3,000 Pcs

- 1. The bandolier of 330 mm reel contains at least 10,000 devices.
- 2. The bandolier of 180 mm reel contains at least 3,000 devices.
- No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel.
 15 empty compartments for 180 mm reel.
- Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
- The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there.

Tape Specification for SOT-23 Surface Mount Device



All dimensions in mm

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
SOT-23 T&R	3K/reel	136 gm/3K pcs	3" x 7.5" x 7.5" 9" x 9" x 9"	12.0K 51.0K	17" x 15" x 13.5" 19" x 19" x 19"	192.0K 408.0K	12 kgs 28 kgs
	10K/reel	415 gm/10K pcs	13" x 13" x 0.5"	10.0K	17" x 15" x 13.5"	300.0K	16 kgs

Customer Notes

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 Discrete 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 Discrete 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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Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119 email@cdil.com www.cdilsemi.com