

## SOT-23 Formed SMD Package

BC817  
BC818

## SILICON PLANAR EPITAXIAL TRANSISTORS

### N-P-N transistors

This product is available in AEC-Q101 Compliant also.

NOTE: For AEC-Q101 compliant products, please use suffix -AQ in the part number while ordering.

#### Marking

BC817 = 6D

BC817-16 = 6A

BC817-25 = 6B

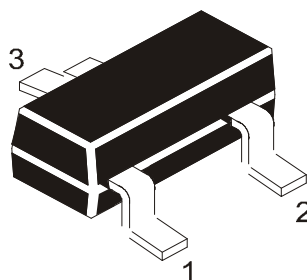
BC817-40 = 6C

BC818 = 6H

BC818-16 = 6E

BC818-25 = 6F

BC818-40 = 6G

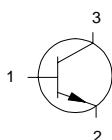


#### Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR



### ABSOLUTE MAXIMUM RATINGS

Collector-emitter voltage ( $V_{BE} = 0$ )

Collector-emitter voltage (open base)

Collector current (peak value)

Total power dissipation up to  $T_{amb} = 25^\circ\text{C}$

Junction temperature

Transition frequency at  $f = 100\text{ MHz}$

$I_C = 10\text{ mA}$ ;  $V_{CE} = 5\text{ V}$

		BC817	BC818
$V_{CES}$	max.	50	30 V
$V_{CE0}$	max.	45	25 V
$I_{CM}$	max.	1000	mA
$P_{tot}$	max.	250	mW
$T_j$	max.	150	$^\circ\text{C}$
$f_T$	>	100	MHz

# BC817 BC818

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

Limiting values

Collector-emitter voltage ( $V_{BE} = 0$ )

Collector-emitter voltage (open base)

$I_C = 10\text{ mA}$

Emitter-base voltage (open collector)

Collector current (d.c.)

Collector current (peak value)

Emitter current (peak value)

Base current (d.c.)

Base current (peak value)

Total power dissipation up to  $T_{amb} = 25^\circ\text{C}$

Storage temperature

Junction temperature

		<b>BC817</b>	<b>BC818</b>
$V_{CES}$	max.	50	30 V
$V_{CE0}$	max.	45	25 V
$V_{EB0}$	max.	5	5 V
$I_C$	max.	500	mA
$I_{CM}$	max.	1000	mA
$-I_{EM}$	max.	1000	mA
$I_B$	max.	100	mA
$I_{BM}$	max.	200	mA
$P_{tot}$	max.	250	mW
$T_{stg}$		-55 to +150	$^\circ\text{C}$
$T_j$	max.	150	$^\circ\text{C}$

## THERMAL RESISTANCE

From junction to ambient

$$R_{th\ j-a} = 500\text{ KW}$$

## CHARACTERISTICS

$T_j = 25^\circ\text{C}$  unless otherwise specified

Collector cut-off current

$I_E = 0$ ;  $V_{CB} = 20\text{ V}$ ;  $T_j = 25^\circ\text{C}$

$I_E = 0$ ;  $V_{CB} = 20\text{ V}$ ;  $T_j = 150^\circ\text{C}$

Emitter cut-off current

$I_C = 0$ ;  $V_{EB} = 5\text{ V}$

Base emitter voltage \*

$I_C = 500\text{ mA}$ ;  $V_{CE} = 1\text{ V}$

Saturation voltage

$I_C = 500\text{ mA}$ ;  $I_B = 50\text{ mA}$

D.C. current gain

$I_C = 500\text{ mA}$ ;  $V_{CE} = 1\text{ V}$

$I_C = 100\text{ mA}$ ;  $V_{CE} = 1\text{ V}$ ; BC817/BC818

BC817-16

BC818-16

BC817-25

BC818-25

BC817-40

BC818-40

Transition frequency at  $f = 100\text{ MHz}$

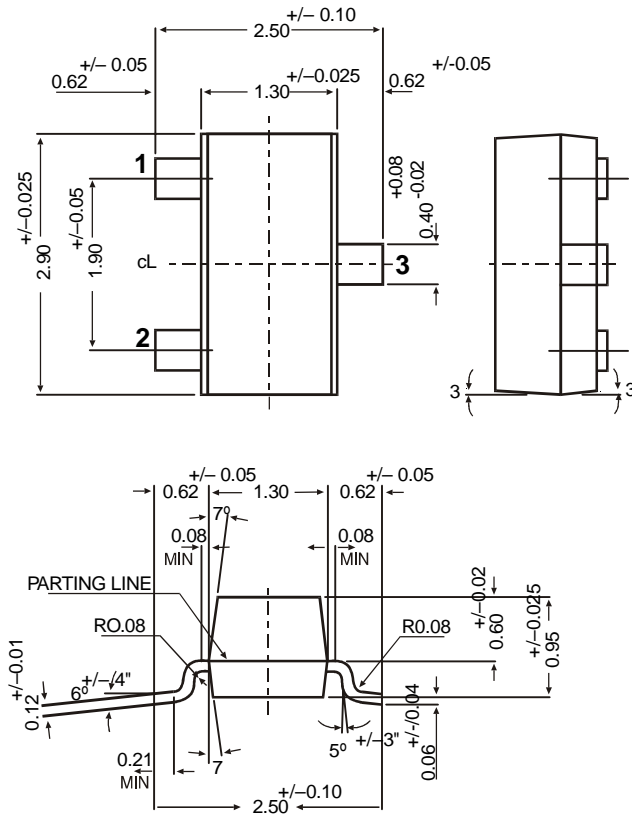
$I_C = 10\text{ mA}$ ;  $V_{CE} = 5\text{ V}$

Collector capacitance at  $f = 1\text{ MHz}$

$I_E = I_e = 0$ ;  $V_{CB} = 10\text{ V}$

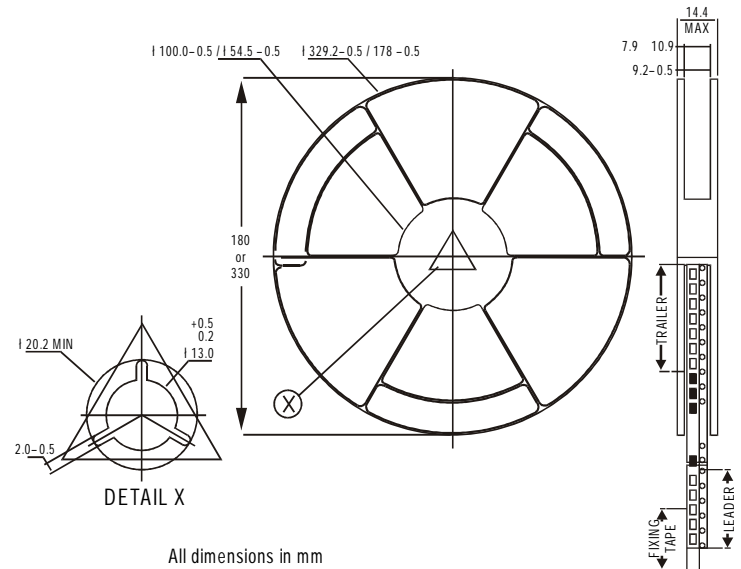
$I_{CB0}$	<	100 nA
$I_{CB0}$	<	5 $\mu\text{A}$
$I_{EB0}$	<	10 $\mu\text{A}$
$V_{BE}$	<	1,2 V
$V_{CEsat}$	<	700 mV
$h_{FE}$	>	40
$h_{FE}$		100 to 600
$h_{FE}$		100 to 250
$h_{FE}$		160 to 400
$h_{FE}$		250 to 600
$f_T$	>	100 MHz
$C_c$	typ.	5 pF

## SOT-23 Formed SMD Package



### SOT-23 Package Reel Information

Reel specifications for Packing (13"/7" reels)



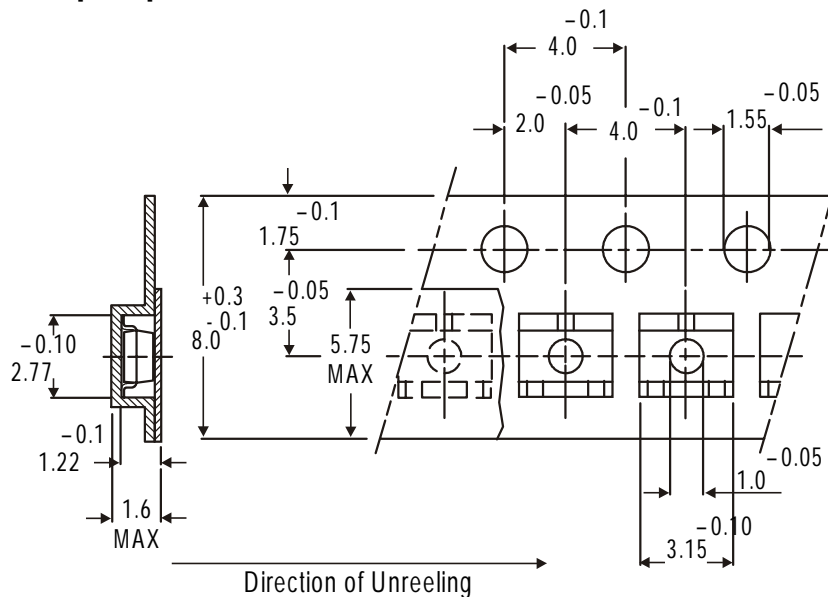
All dimensions in mm  
330 / 180 mm Antistatic Coated Plastic Reel

NOTES:

	8mm Tape	8mm Tape
	Size of Reel	Size of Reel
	330 mm (13")	180 mm (7")
No. of Devices	10,000 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.
3. No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel.  
15 empty compartments for 180 mm reel.
4. Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
5. 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"	12.0K	17" x 15" x 13.5"	192.0K	12 kgs
			9" x 9" x 9"	51.0K	19" x 19" x 19"	408.0K	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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