

Continental Device India Limited

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





SOT-23 Formed SMD Package

BSR15 BSR16

SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P silicon transistors

Marking

BSR15 = T7

BSR16 = T8

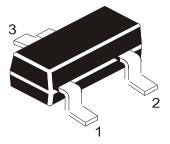
Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR





ABSOLUTE MAXIMUM RATINGS

			BSR15		BSR1	<u>6</u>
Collector–base voltage (open emitter)	$-V_{CB0}$	max.	60		60	V
Collector–emitter voltage (open base)	$-V_{CE0}$	max.	40		60	V
Emitter–base voltage (open collector)	$-V_{EB0}$	max.		5		V
Collector current (d.c.)	$-I_C$	max.		600		mA
Total power dissipation up to $T_{amb} = 25$ °C	P_{tot}	max.		250		m W
Junction temperature	T_j	max.		150		$^{\circ}$ C
D.C. current gain	,					
$-I_C = 500 \text{ mA; } -V_{CE} = 10 \text{ V}$	h_{FE}	>	30		50	
Turn–off switching time						
$-I_{Con} = 150 \text{ mA}; -I_{Bon} = I_{Boff} \text{ W} = 15 \text{ mA}$	t_{off}	>		100		ns
Transition frequency at f – 100 MHz	25					
$-I_C = 50 \text{ mA}; -V_{CE} = 20 \text{ V}$	f_T	>		200		MHz

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

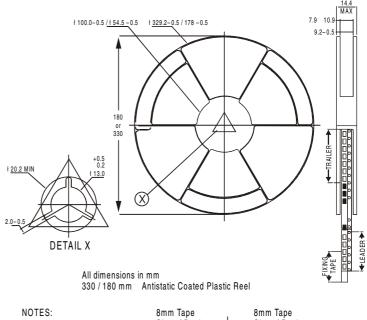
Limiting values						
			BSR15 BSR		16	
Collector–base voltage (open emitter)	$-V_{CB0}$	max.	60	60	\overline{V}	
Collector–emitter voltage (open base)	$-V_{CE0}$	max.	40	60	V	
Emitter–base voltage (open collector)	$-V_{EB0}$	max.	5	5	V	
Collector current (d.c.)	$-I_C$	max.	· ·	600	mA	
Power dissipation up to $T_{amb} = 25$ °C	P_{tot}	max.		250	m W	
Storage temperature	T_{stg}		−55 to +150		° C	
Junction temperature	T_j	max.		150	° C	
THERMAL RESISTANCE						
From junction to ambient	R_{th} $j-a$	=		500	K/W	
CHARACTERISTICS						
$T_j = 25$ °C unless otherwise specified						
Collector cut–off current			BSR15	BSR	16	
$I_E = 0; -V_{CB} = 50 V$	$-I_{CB0}$	<	20	10	nA	
$I_E = 0$; $-V_{CB} = 50V$; $T_j = 150$ °C	$-I_{CB0}$	<	20	10	μA	
$-V_{EB} = 0.5 \ V; -V_{CE} = 30 \ V$	$-I_{CEX}$	<		50	nA	
Base current						
with reverse biased emitter junction						
$-V_{EB} = 3 \ V; -V_{CE} = 30 \ V$	$-I_{BEX}$	<		50	nA	
Saturation voltages						
$-I_C = 150 \text{ mA}; -I_B = 15 \text{ mA}$	−V _{CEsat} <			0,4	V	
	$-V_{BEsa}$	t <		1,3	3 V	
$-I_C = 500 \text{ mA}; -I_B = 50 \text{ mA}$	-V _{CEsat} <			1,6	V	
	$-V_{BEsa}$	t <		2,6	V	
			BSR15	BSR	16	
D.C. current gain						
$-I_C = 0.1 \ mA; \ -V_{CE} = 10 \ V$	h_{FE}	>	35	75		
$-I_C = 1 mA; -V_{CE} = 10 V$	h_{FE}	>	50	100		
$-I_C = 10 \text{ mA}; -V_{CE} = 10 \text{ V}$	h_{FE}	>	75 100)	
$-I_C = 150 \text{ mA}; -V_{CE} = 10 \text{ V}$	h_{FE}		100 to 300			
$-I_C = 500 \text{ mA; } -V_{CE} = 10 \text{ V}$	h_{FE}	>	30	50		
Transition frequency at $f = 100 \text{ MHz}$				200		
$-I_C = 50 \text{ mA}; -V_{CE} = 20 \text{ V}; T_{amb} = 25 \text{ °C}$	f_T	>		200	MHz	

SOT-23 Formed SMD Package

2.50 +/- 0.10 +/- 0.05 0.62 1.30----+/-0.05 0.62 40.08 -0.02 +/-0.025 1.90 cL 3 - 0.05 - 1.30 +/- 0.05 0.62 |← 0.62 0.08 0.08 MIN MIN PARTING LINE RO.08 R0.08 0.21

2.50 +/-0.10

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

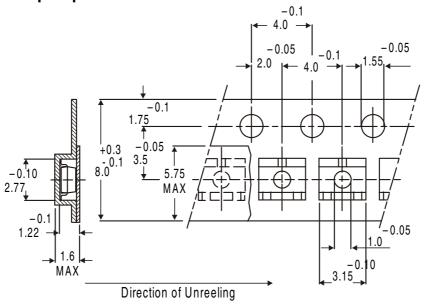


NOTES: 8mm Tape 8mm Tape Size of Reel 330 mm (13") 180 mm (7")

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.
- No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel.
 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	J 1	3" x 7.5" x 7.5"	I	17" x 15" x 13.5"	192.0K	12 kgs	
	10K/reel		9" x 9" x 9" 13" x 13" x 0.5"	51.0K 10.0K	19" x 19" x 19" 17" x 15" x 13.5"	408.0K 300.0K	28 kgs 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).

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