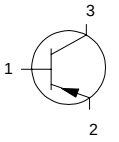
SOT-23 Formed SMD Package **BCW89**

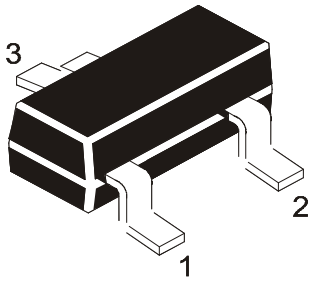
SILICON PLANAR EPITAXIAL TRANSISTORS

P–N–P transistors

Marking
BCW89 = H3

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR





ABSOLUTE MAXIMUM RATINGS

Collector–base voltage (open emitter)	$-V_{CB0}$	*max.*	*80 V*
Collector–emitter voltage (open base)	$-V_{CE0}$	*max.*	*60 V*
Collector current (peak value)	$-I_{CM}$	*max.*	*200 mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250* mW
Junction temperature	T_j	*max.*	*150 °C*
D.C. current gain at T_j = 25 °C		>	*120*
$-I_C$ = 2 mA; $-V_{CE}$ = 5 V	h_{FE}	<	*260*
Transition frequency at f: 35 MHz			
$-I_C$ = 10 mA; $-V_{CE}$ = 5 V	f_T	*typ.*	*150* MHz
Noise figure at R_S = 2 kΩ			
$-I_C$ = 200 µA; $-V_{CE}$ = 5 V;			
f = 1 kHz; B = 200 Hz	F	<	*10 dB*

RATINGS *(at T_A = 25°C unless otherwise specified)*

Limiting values			
Collector–base voltage (open emitter)	$-V_{CB0}$	*max.*	*80 V*
Collector–emitter voltage (V_{BE} = 0)	$-V_{CES}$	*max.*	*60 V*
Collector–emitter voltage (open base)			
$-I_C$ = 2 mA	$-V_{CE0}$	*max.*	*60 V*
Emitter–base voltage (open collector)	$-V_{EB0}$	*max.*	*5 V*
Collector current (d.c.)	$-I_C$	*max.*	*100 mA*
Collector current (peak value)	$-I_{CM}$	*max.*	*200 mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250* mW
Storage temperature	T_{stg}	*–55 to +150 °C*	
Junction temperature	T_j	*max.*	*150 ° C*

THERMAL RESISTANCE

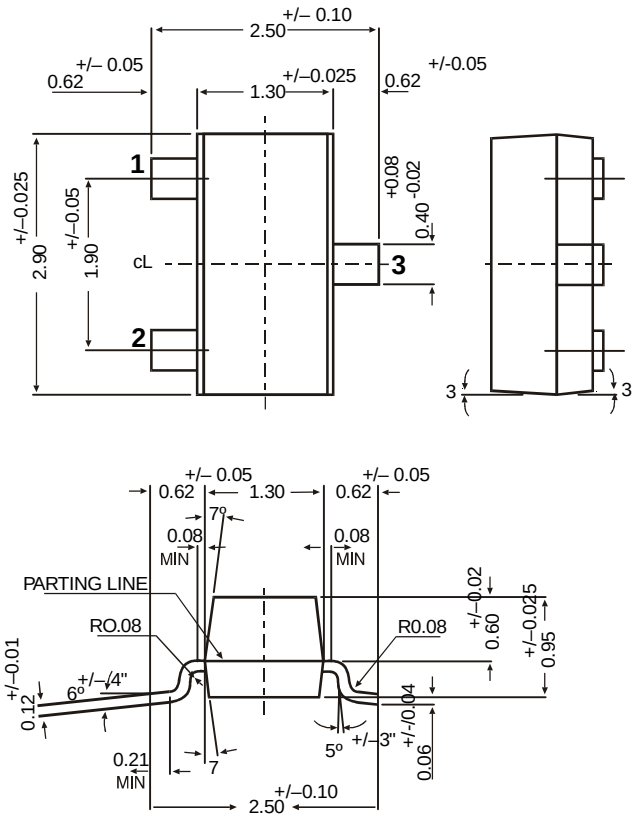
From junction to ambient	$R_{th\ j-a}$ =	*500*	K/W

CHARACTERISTICS

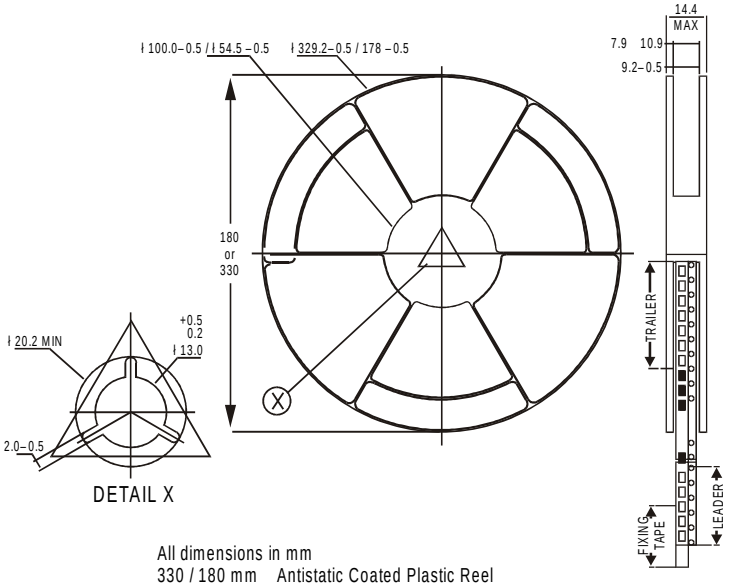
T_j = 25 °C unless otherwise specified

Collector cut–off current			
I_E = 0; $-V_{CB}$ = 20 V	$-I_{CB0}$	<	*100 nA*
I_E = 0; $-V_{CB}$ = 20 V; T_j = 100 °C	$-I_{CB0}$	<	*10 µA*
Base–emitter voltage			
$-I_C$ = 2 mA; $-V_{CE}$ = 5 V; T_j = 25 °C	$-V_{BE}$	*600 to 750*	*mV*
Saturation voltages			
$-I_C$ = 10 mA; $-I_B$ = 0,5 mA	$-V_{CEsat}$	*typ.*	*80 mV*
		<	*300 mV*
	$-V_{BEsat}$	*typ.*	*720 mV*
$-I_C$ = 50 mA; $-I_B$ = 2,5 mA	$-V_{CEsat}$	*typ.*	*150 mV*
	$-V_{BEsat}$	*typ.*	*810 mV*
D.C. current gain			
$-I_C$ = 10 µA; $-V_{CE}$ = 5 V	h_{FE}	*typ.*	*90*
$-I_C$ = 2 mA; $-V_{CE}$ = 5 V	h_{FE}	>	*120*
		<	*260*
Collector capacitance at f = 1 MHz			
$I_E = I_e$ = 0; $-V_{CB}$ = 10 V	C_c	*typ.*	*4,5 pF*
Transition frequency at f = 35 MHz			
$-I_C$ = 10 mA; $-V_{CE}$ = 5 V	f_T	*typ.*	*150* MHz
Noise figure at R_S = 2 kΩ			
$-I_C$ = 200µA; $-V_{CE}$ = 5 V			
f = 1 kHz; B = 200 Hz	*F*	<	*10 dB*

SOT-23 Formed SMD Package



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

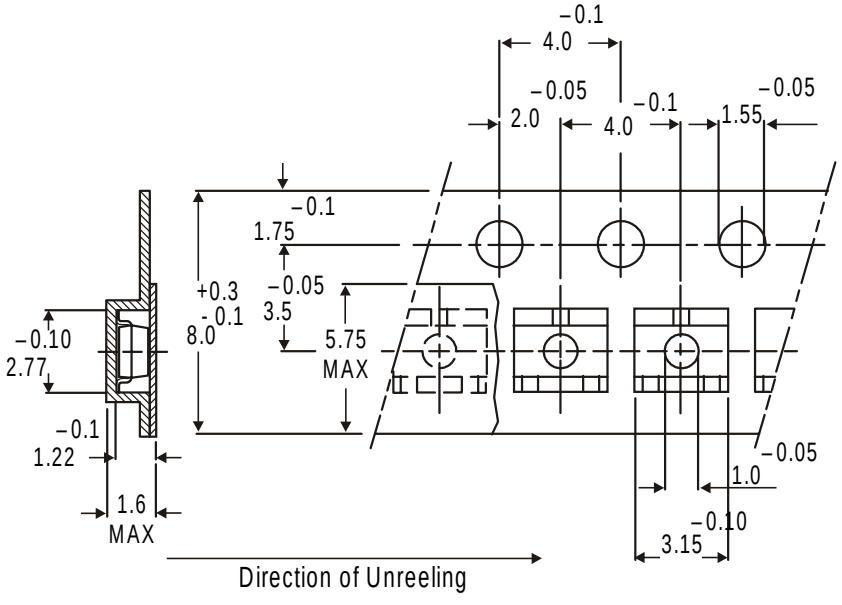


All dimensions in mm
330 / 180 mm Antistatic Coated Plastic Reel

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

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