

SOT-23 Formed SMD Package

BCW69
BCW70

SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors

Marking

BCW69 = H1

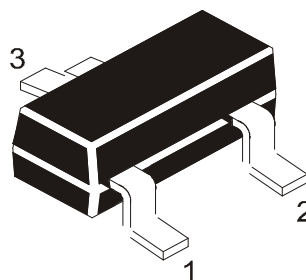
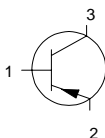
BCW70 = H2

Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

D.C. current gain at $T_j = 25^\circ\text{C}$

$-I_C = 2\text{ mA}$; $-V_{CE} = 5\text{ V}$

Collector-base voltage (open emitter)

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 $f = 35\text{ MHz}$

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

Noise figure at $R_S = 2\text{ k}\Omega$

$-I_C = 200\text{ }\mu\text{A}$; $-V_{CE} = 5\text{ V}$;

$f = 1\text{ kHz}$; $B = 200\text{ Hz}$

		BCW69	BCW70
h_{FE}	$>$	120	215
h_{FE}	$<$	260	500
$-V_{CB0}$	max.	50	V
$-V_{CE0}$	max.	45	V
$-I_{CM}$	max.	200	mA
P_{tot}	max.	250	mW
T_j	max.	150	$^\circ\text{C}$
f_T	typ.	150	MHz
F	$<$	10	dB

BCW69
BCW70

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

Limiting values

Collector-base voltage (open emitter)

$-V_{CB0}$ max. 50 V

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

$-V_{CES}$ max. 50 V

Collector-emitter voltage (open base)

$-I_C = 2 \text{ mA}$

$-V_{CE0}$ max. 45 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 $T_{amb} = 25^\circ\text{C}$

P_{tot} max. 250 mW

Storage temperature

T_{stg} -55 to $+150^\circ\text{C}$

Junction temperature

T_j max. 150°C

THERMAL RESISTANCE

From junction to ambient

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

CHARACTERISTICS

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

Collector cut-off current

$I_E = 0$; $-V_{CB} = 20 \text{ V}$

$-I_{CB0}$ < 100 nA

$I_E = 0$; $-V_{CB} = 20 \text{ V}$; $T_j = 100^\circ\text{C}$

$-I_{CB0}$ < 10 μA

Base-emitter voltage

$-I_C = 2 \text{ mA}$; $-V_{CE} = 5 \text{ V}$

$-V_{BE}$ 600 to 750 mV

Saturation voltages

$-I_C = 10 \text{ mA}$; $-I_B = 0,5 \text{ mA}$

$-V_{CEsat}$ typ. 80 mV

< 300 mV

$-V_{BEsat}$ typ. 720 mV

$-I_C = 50 \text{ mA}$; $-I_B = 2,5 \text{ mA}$

$-V_{CEsat}$ typ. 150 mV

$-V_{BEsat}$ typ. 810 mV

D.C. current gain

$-I_C = 10 \mu\text{A}$; $-V_{CE} = 5 \text{ V}$

		BCW69	BCW70
h_{FE}	typ.	90	150

$-I_C = 2 \text{ mA}$; $-V_{CE} = 5 \text{ V}$

	>	120	215
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h_{FE}	<	260	500
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Collector capacitance at f : 1 MHz

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

C_c	typ.	4,5	pF
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Transition frequency at $f = 35 \text{ MHz}$

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

f_T	typ.	150	MHz
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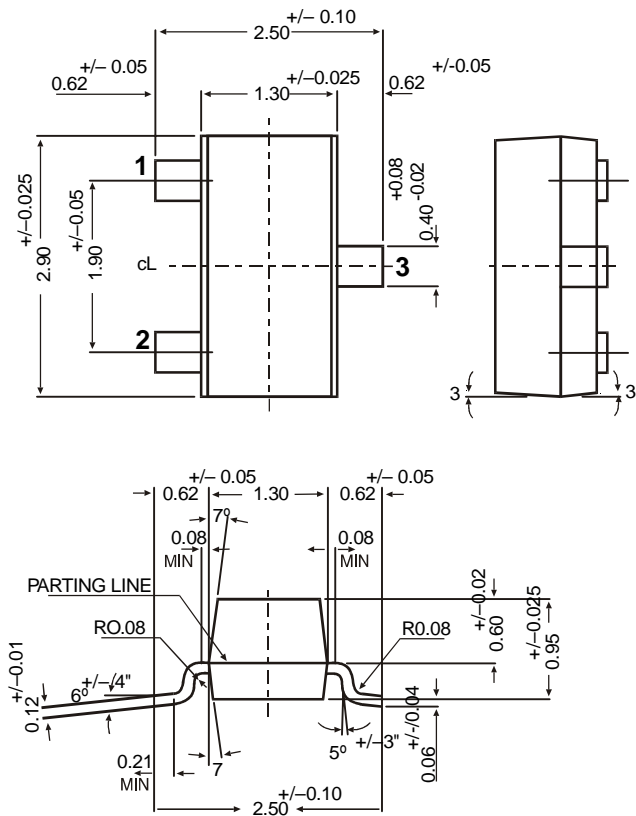
Noise figure at $R_S = 2 \text{ k}\Omega$

$-I_C = 200 \mu\text{A}$; $-V_{CE} = 5 \text{ V}$

$f = 1 \text{ kHz}$; $B = 200 \text{ Hz}$

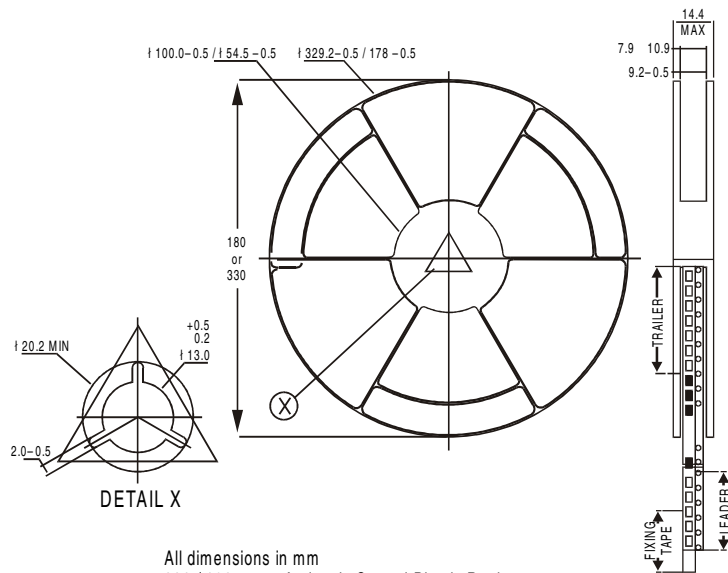
F	<	10	dB
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SOT-23 Formed SMD Package



SOT-23 Package Reel Information

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



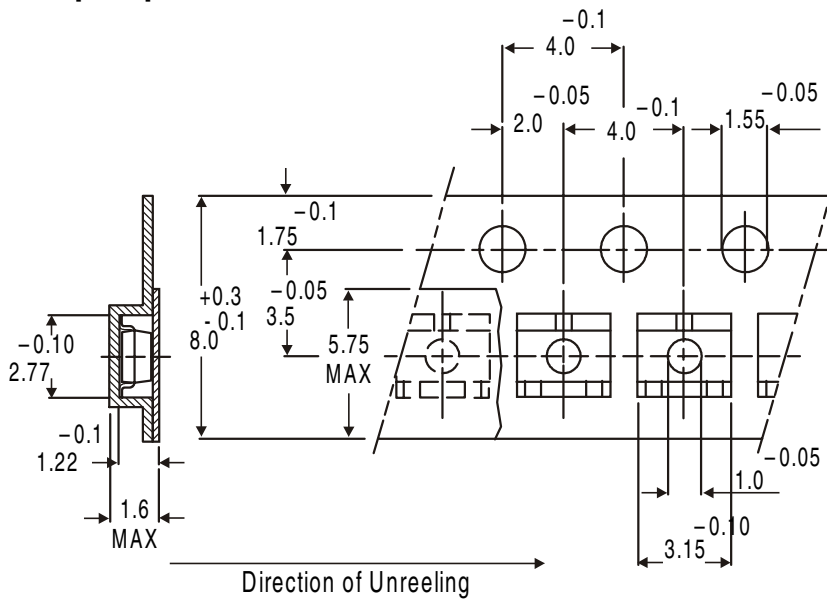
All dimensions in mm
330 / 180 mm Antistatic Coated Plastic Reel

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

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