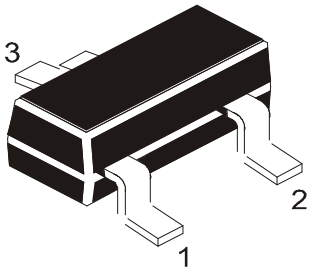
SOT-23 Formed SMD Package

BCX70G BCX70H
BCX70J BCX70K

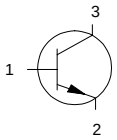
SILICON PLANAR EPITAXIAL TRANSISTORS

N–P–N silicon transistors

Marking
BCX70G = AG
BCX70H = AH
BCX70J = AJ
BCX70K = AK



Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

Collector–emitter voltage (V_{BE} = 0)	V_{CES}	*max.*	*45 V*
Collector–emitter voltage (open base)	V_{CE0}	*max.*	*45 V*
Collector current (d.c.)	I_C	*max.*	*200 mA*
Total power dissipation at T_{amb} = 25 °C	P_{tot}	*max.*	*250* mW
Junction temperature	T_j	*max.*	*150 ° C*
Transition frequency at f = 100 MHz			
V_{CE} = 5 V; I_C = 10 mA	f_T	*typ.*	*250* MHz
Noise figure at f: 1 kHz			
V_{CE} = 5 V; I_C: 200 mA; B = 200 Hz	*F*	*typ.*	*2 dB*

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

Limiting values			
Collector–emitter voltage (V_{BE} = 0)	V_{CES}	*max.*	*45 V*
Collector–emitter voltage (open base)	V_{CE0}	*max.*	*45 V*
Emitter–base voltage (open collector)	V_{EB0}	*max.*	*5 V*

Collector current (d.c.)	I_C	*max.*	*200 mA*
Base current	I_B	*max.*	*50 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_{amb}: *25 °C unless otherwise specified*

Collector–emitter cut–off current			
V_{BE} *= 0;* V_{CE} *= 45 V*	I_{CES}	<	*20 nA*
V_{BE} *= 0;* V_{CE} *= 45 V;* T_{amb} *= 150 °C*	I_{CES}	<	*20 µA*
Emitter–base cut–off current			
I_C *= 0;* V_{EB} *= 4 V*	I_{EB0}	<	*20 nA*
Saturation voltages			
at I_C *= 10 mA;* I_B *= 0,25 mA*	V_{CEsat}		*0,05 to 0,35 V*
	V_{BEsat}		*0,6 to 0,85 V*
at I_C *= 50 mA;* I_B *= 1,25 mA*	V_{CEsat}		*0,1 to 0,55 V*
	V_{BEsat}		*0,7 to 1,05 V*
Transition frequency at f = 100 MHz		>	*125* MHz
I_C *= 10 mA;* V_{CE} *= 5 V*	f_T	*typ.*	*250* MHz
Collector capacitance at f = 1 MHz			
$I_E = I_e = 0$; V_{CB} *= 10 V*	C_c	*typ.*	*2,5 pF*
Emitter capacitance at f = 1 MHz			
$I_C = I_c = 0$; V_{EB} *= 0,5 V*	C_e	*typ.*	*8 pF*
Noise figure at R_S *= 2 kΩ,*		*typ.*	*2 dB*
I_C *= 200 µA;* V_{CE} *= 5 V; f = 1 kHz; B = 200 Hz*	F	<	*6 dB*

			BCX70G	***70H***	***70J***	***70K***	
D.C. current gain							
V_{CE} *= 5V; lC = 10µA*	h_{FE}	>	—	*40*	*30*	*100*	
V_{CE} *= 5 V;* I_C *= 2 mA*	h_{FE}	>	*120*	*180*	*250*	*380*	
		<	*220*	*310*	*460*	*630*	
V_{CE} *= 1 V;* I_C *= 50 mA*	h_{FE}	>	*50*	*70*	*90*	*100*	
Small-signal current gain							
V_{CE} *= 5 V; IC = 2 mA; f = 1 kHz*	*hfe*	>	*125*	*175*	*250*	*350*	
		<	*250*	*350*	*500*	*700*	
Output admittance							
V_{CE} *= 5 V; IC = 2 mA; f = 1 kHz*	*hoe*	*typ.*	*18*	*24*	*30*	*50*	µS
Base-emitter voltage							
V_{CE} *= 5 V;* I_C *= 2 mA*	V_{BE}				*0,55 to 0.75*		*V*
		typ.			*0,65*		*V*
V_{CE} *= 5 V;* I_C *= 10 µA*	V_{BE}	*typ.*			*0,52*		*V*
V_{CE} *= 1 V;* I_C *= 50 mA*	V_{BE}	*typ.*			*0,78*		*V*

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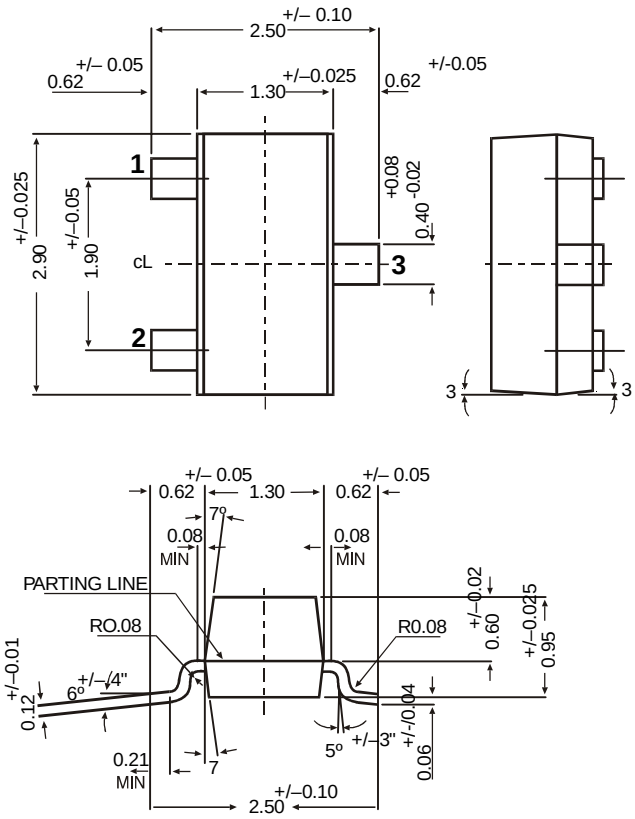
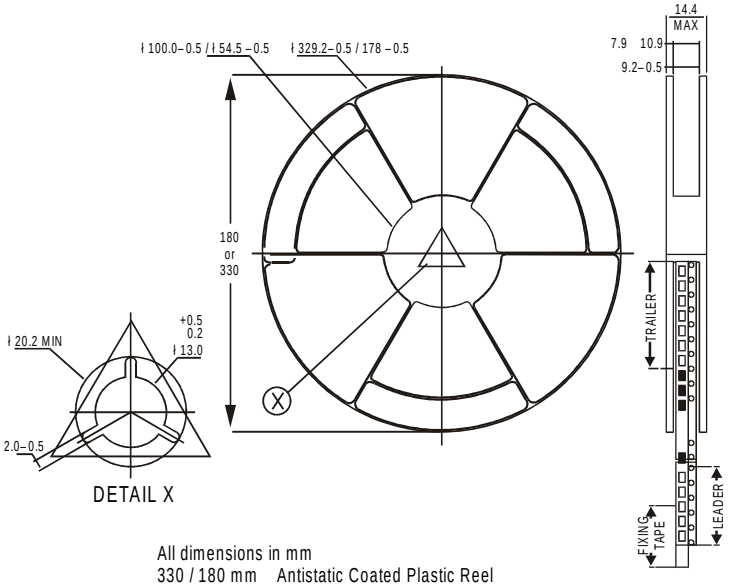


SOT-23 Package Reel Information
Reel specifications for Packing (13"/7" reels)

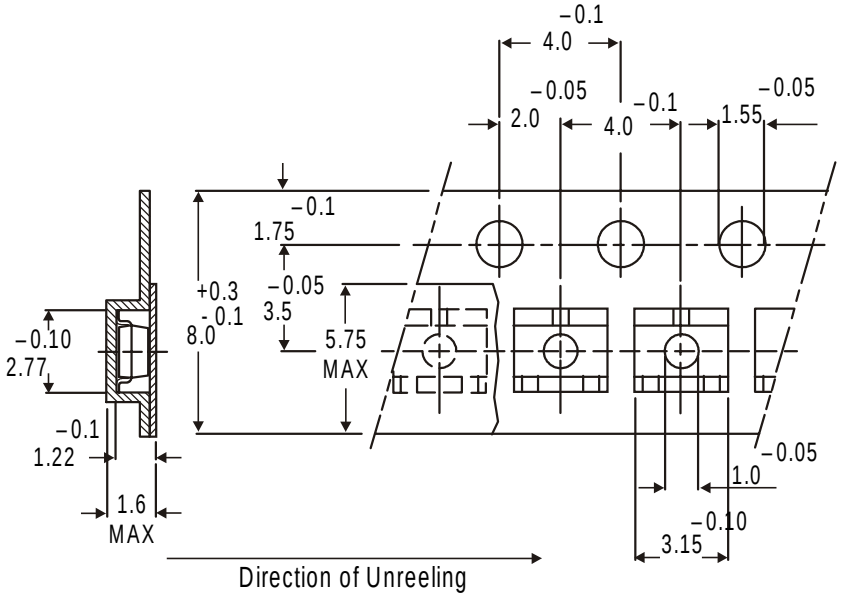


All dimensions in mm
330 / 180 mm Antistatic Coated Plastic Reel

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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