SOT-23 Formed SMD Package

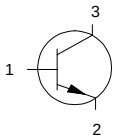
BCX70G BCX70H
BCX70J BCX70K

SILICON PLANAR EPITAXIAL TRANSISTORS

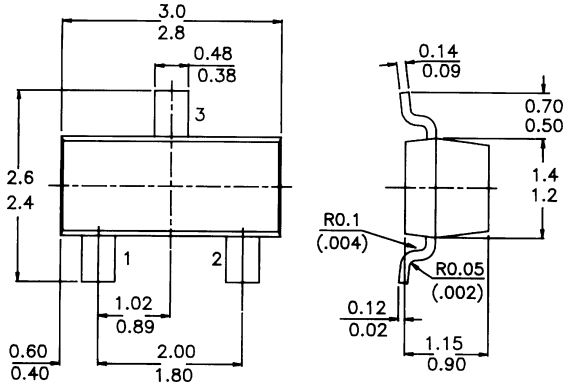
N–P–N silicon transistors

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

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS

Collector–emitter voltage (V_{BE} = 0)	V_{CES}	*max.*	*45 V*
Collector–emitter voltage (open base)	V_{CEO}	*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_{CEO}	*max.*	*45 V*
Emitter–base voltage (open collector)	V_{EBO}	*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* mA
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* kW,		*typ.*	*2 dB*
I_C *= 200* mA; 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 = 10*mA	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*	mS
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* mA	V_{BE}	*typ.*			*0,52*		*V*
V_{CE} *= 1 V;* I_C *= 50 mA*	V_{BE}	*typ.*			*0,78*		*V*

Notes

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 is 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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