SOT-23 Formed SMD Package

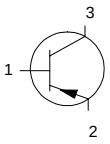
BCX71G BCX71H
BCX71J BCX71K

SILICON PLANAR EPITAXIAL TRANSISTORS

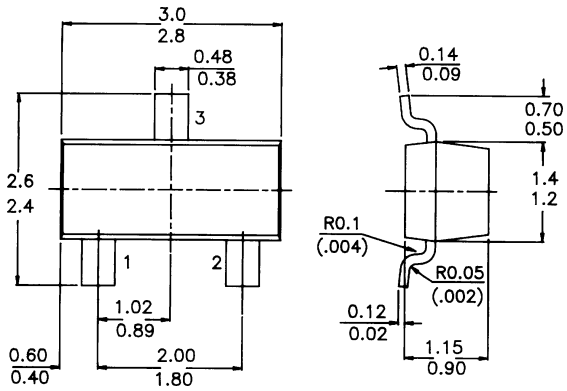
P–N–P silicon transistors

Marking
BCX71G = BG
BCX71H = BH
BCX71J = BJ
BCX71K = BK

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)	$-V_{CE0}$	*max.*	*45 V*
Collector current (d.c.)	$-I_C$	*max.*	*200 mA*
Total power dissipation	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.*	*180* MHz
Noise figure at f = 1 kHz			
*$-V_{CE}$ = 5V; $-I_C$ = 200*mA	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* KW

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

Collector–emitter cut–off current			
V_{EB} = 0; $-V_{CE}$ = 45 V	$-I_{CES}$	<	*20 nA*
V_{EB} = 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			
$-I_C$ = 10 mA; $-I_B$ = 0,25 mA	$-V_{CEsat}$		*0,06 to 0,25 V*
	$-V_{BEsat}$		*0,6 to 0,85 V*
$-I_C$ = 50 mA; $-I_B$ = 1,25 mA	$-V_{CEsat}$		*0,12 to 0,55 V*
	$-V_{BEsat}$		*0,68 to 1,05 V*
Transition frequency at f = 100 MHz ·			
$-V_{CE}$ = 5 V; $-I_C$ = 10 mA	f_T	*typ.*	*180* MHz
Capacitance at f = 1 MHz			
$-V_{CB}$ = 10 V; $I_E = I_e$ = 0	C_c	*typ.*	*4,5 pF*
Emitter capacitance at f = 1 MHz			
$-V_{EB}$ = 0,5 V; $I_C = I_c$ = 0	C_e	*typ.*	*11 pF*
*Noise figure at R_S = 2 k*W			
$-V_{CE}$ = 5 V; $-I_C$ = 200 mA; B = 200 Hz	F	*typ.*	*2 dB*
		<	*6 dB*

			BCX71G	***71H***	***71J***	***71K***	
D.C. current gain							
$-V_{CE}$ = 5 V; $-I_C$ = 10mA	h_{FE}	>	–	*30*	*40*	*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}	>	*60*	*80*	*100*	*110*	
Small-signal current gain							
$-V_{CE}$ = 5 V; $-I_C$ = 2 mA; f = 1 kHz	h_{fe}	>	*125*	*175*	*250*	*350*	
		<	*250*	*350*	*500*	*700*	
Output admittance							
$-V_{CE}$ = 5 V; $-I_C$ = 2 mA; f = 1 kHz	h_{oe}	*typ.*	*18*	*24*	*30*	*50*	mS
Base-emitter voltage							
$-V_{CE}$ = 5 V; $-I_C$ = 2 mA	V_{BE}				*0,6 to 0.75*		*V*
		typ.			*0,65*		*V*
$-V_{CE}$ = 5 V; $-I_C$ = 10 mA	V_{BE}	*typ.*			*0,55*		*V*
$-V_{CE}$ = 1 V; $-I_C$ = 50 mA	V_{BE}	*typ.*			*0,72*		*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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