

**SOT-23 Formed SMD Package**

**BCW71  
BCW72**

*SILICON PLANAR EPITAXIAL TRANSISTORS*

*N-P-N transistors*

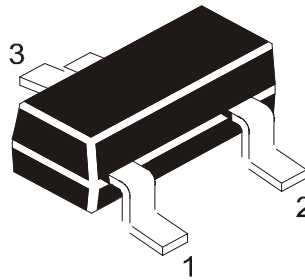
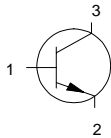
**Marking**

BCW71 = K1

BCW72 = K2

**Pin configuration**

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



**ABSOLUTE MAXIMUM RATINGS**

		<b>BCW71</b>	<b>BCW72</b>
D.C. current gain at $T_j = 25\text{ }^\circ\text{C}$			
$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	$h_{FE} >$	110	200
Collector-base voltage (open emitter)	$h_{FE} <$	220	450
$V_{CB0}$ max.		50	V
Collector-emitter voltage (open base)		45	V
$V_{CE0}$ max.		200	mA
Collector current (peak value)	$I_{CM}$ max.	250	mW
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	$P_{tot}$ max.	150	$^\circ\text{C}$
Junction temperature	$T_j$ max.	300	MHz
Transition frequency at $f = 35\text{ MHz}$	$f_T$ typ.	10	dB
$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$			
Noise figure at $R_S = 2\text{ k}\Omega$			
$I_C = 200\text{ }\mu\text{A}; V_{CE} = 5\text{ V};$			
$f = 1\text{ kHz}; B = 200\text{ Hz}$			

**BCW71  
BCW72**

**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 (open base)	$V_{CE0}$	max.	45 V
$I_C = 2\text{ mA}$	$V_{EB0}$	max.	5 V
Emitter-base voltage (open collector)	$I_C$	max.	100 mA
Collector current (d.c.)	$I_{CM}$	max.	200 mA
Collector current (peak value)	$P_{tot}$	max.	250 mW
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Storage temperature	$T_j$	max.	150 $^\circ\text{C}$
Junction temperature			

**THERMAL RESISTANCE**

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

**CHARACTERISTICS**

$T_j = 25^\circ\text{C}$  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 $\mu\text{A}$

Base emitter voltage

$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	$V_{BE}$	550 to 700 mV
--	----------	---------------

Saturation voltages

$I_C = 10\text{ mA}; I_B = 0,5\text{ mA}$		typ.	120 mV
	$V_{CEsat}$	<	250 mV
	$V_{BEsat}$	typ.	750 mV
	$V_{CEsat}$	typ.	210 mV
	$V_{BEsat}$	typ.	850 mV

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

D.C. current gain

		<b>BCW71</b>	<b>BCW72</b>
$I_C = 10\ \mu\text{A}; V_{CE} = 5\text{ V}$	$h_{FE}$	typ. 90	150
	$h_{FE}$	> 110	200
$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	$h_{FE}$	< 220	450

Collector capacitance at  $f = 1\text{ MHz}$

$I_E = I_e = 0; V_{CB} = 10\text{ V}$	$C_c$	typ.	2,5 pF
---------------------------------------	-------	------	--------

Transition frequency at  $f = 35\text{ MHz}$

$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	$f_T$	typ.	300 MHz
---	-------	------	---------

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

$I_C = 200\ \mu\text{A}; V_{CE} = 5\text{ V}$	$F$	<	10 dB
$f = 1\text{ kHz}; B = 200\text{ Hz}$			



## 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

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 are 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of  
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-2579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119

email@cdil.com www.cdilsemi.com