

SILICON PLANAR EPITAXIAL TRANSISTORS

N-P-N transistors

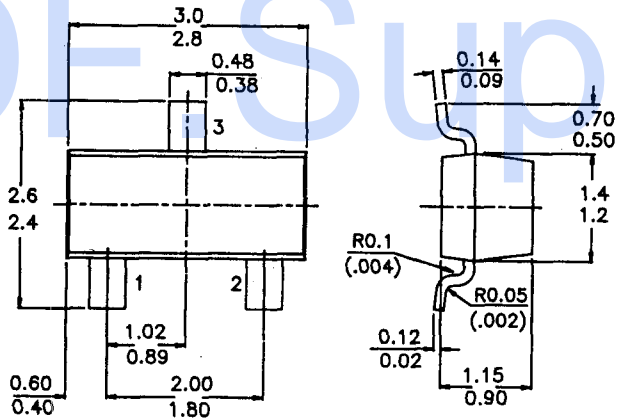
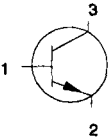
Marking

BCW71 = K1
BCW72 = K2

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

Pin configuration

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



ABSOLUTE MAXIMUM RATINGS

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

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) $I_C = 2 \text{ mA}$	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 $^\circ\text{C}$

THERMAL RESISTANCE

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

Base emitter voltage

$I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$	V_{BE}		550 to 700 mV
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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
$I_C = 50 \text{ mA}; I_B = 2,5 \text{ mA}$	V_{CEsat}	typ.	210 mV
	V_{BEsat}	typ.	850 mV

D.C. current gain

		<u>BCW71</u>		<u>BCW72</u>	
$I_C = 10 \mu\text{A}; V_{CE} = 5 \text{ V}$	h_{FE}	typ.	90		150
$I_C = 2 \text{ mA}; V_{CE} = 5 \text{ V}$	h_{FE}	>	110		200
		<	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
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Transition frequency at $f = 35 \text{ MHz}$

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