

BCW29
BCW30

SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors

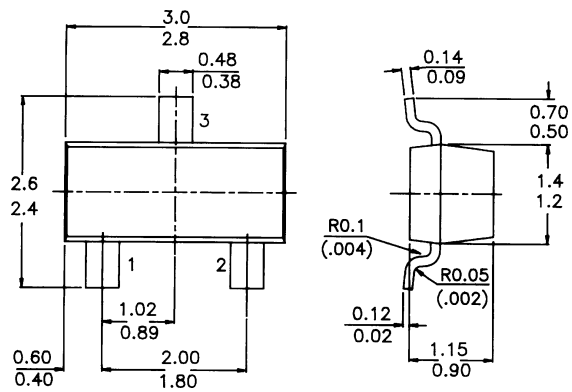
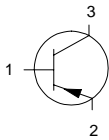
Marking

BCW29 = C1
BCW30 = C2

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

		BCW29	BCW30	
D.C. current gain at $T_j = 25\text{ }^\circ\text{C}$	$>$	120	215	
$-I_C = 2\text{ mA}; -V_{CE} = 5\text{ V}$	h_{FE}	$<$ 260	500	
Collector-base voltage (open emitter)	$-V_{CB0}$ max.		32	V
Collector-emitter voltage (open base)	$-V_{CE0}$ max.		32	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 $f = 35\text{ MHz}$				
$-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$	f_T typ.		150	MHz
Noise figure at $R_S = 2\text{ kW}$				
$-I_C = 200\text{ mA}; -V_{CE} = 5\text{ V};$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	F	$<$	10	dB

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RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

Collector-base voltage (open emitter)	$-V_{CB0}$	max.	32 V
Collector-emitter voltage ($V_{BE} = 0$)	$-V_{CES}$	max.	32 V
Collector-emitter voltage (open base)			
$-I_C = 2$ mA	$-V_{CE0}$	max.	32 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

$I_E = 0$; $-V_{CB} = 32$ V	$-I_{CB0}$	<	100 nA
$I_E = 0$; $-V_{CB} = 32$ V; $T_j = 100^\circ\text{C}$	$-I_{CB0}$	<	10 nA

Base-emitter voltage

$-I_C = 2$ mA; $-V_{CE} = 5$ V	$-V_{BE}$	600 to 750	mV
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Saturation voltages

$-I_C = 10$ mA; $-I_B = 0,5$ mA	$-V_{CEsat}$	typ.	80 mV
		<	300 mV
	$-V_{BEsat}$	typ.	720 mV
$-I_C = 50$ mA; $-I_B = 2,5$ mA	$-V_{CEsat}$	typ.	150 mV
	$-V_{BEsat}$	typ.	810 mV

D.C. current gain

$-I_C = 10$ mA; $-V_{CE} = 5$ V	h_{FE}	BCW 29 typ.	30 90	150
$-I_C = 2$ mA; $-V_{CE} = 5$ V		>	120	215
		<	260	500

Collector capacitance at $f = 1$ MHz

$I_E = I_e = 0$; $-V_{CB} = 10$ V	C_c	typ.	4,5	pF
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Transition frequency at $f = 35$ MHz

$-I_C = 10$ mA; $-V_{CE} = 5$ V	f_T	typ.	150	MHz
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Noise figure at $R_S = 2$ k Ω

$-I_C = 200$ mA; $-V_{CE} = 5$ V $f = 1$ KHz; $B = 200$ Hz	F	<	10	dB
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