

GENERAL PURPOSE TRANSISTOR

N-P-N transistor

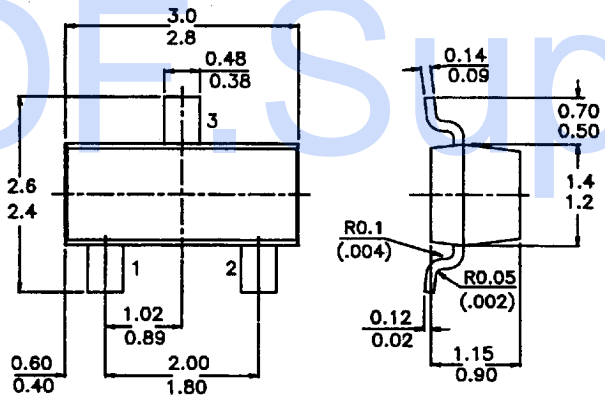
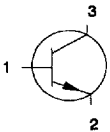
Marking

BCW65A = EA
BCW65B = EB
BCW65C = EC

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

		BCW65A	65B	65C
Collector-base voltage (open emitter)	$-V_{CBO}$	max. 60	60	60 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max. 32	32	32 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max. 5	5	5 V
Collector current (d.c.)	$-I_C$	max. 800	800	800 mA
Total power dissipation at $T_{amb} = 25^\circ C$	P_{tot}	max. 225	225	225 mW
D.C. current gain				
$-I_C = 100 \mu A; -V_{CE} = 10 V$	h_{FE}	min. 35	50	80
$I_C = 10 mA; V_{CE} = 1 V$		min. 75	110	180
		max. 220		
$I_C = 100 mA; V_{CE} = 1 V$		min. 100	160	250
		max. 250	400	630
$I_C = 500 mA; V_{CE} = 2 V$		min. 35	60	100

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

Limiting values

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	60	60	60	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	32	32	32	V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5	5	5	V
Collector current (d.c.)	$-I_C$	max.	800	800	800	mA
Total power dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	max.	225	225	225	mW
Storage temperature	T_{stg}		-55 to +150			$^\circ\text{C}$

THERMAL CHARACTERISTICS

$$T_j = P (R_{th\ j-t} + R_{th\ s-a}) + T_{amb}$$

Thermal resistance

from junction to ambient	$R_{th\ j-a}$	556	556	556	$^\circ\text{C/mW}$
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CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Collector-emitter breakdown voltage $-I_C = 10\text{ mA}; I_B = 0$	$-V_{(BR)CEO\ min.}$		32	32	32	V
Collector-base breakdown voltage $-I_C = 10\ \mu\text{A}; V_{EB} = 0$	$-V_{(BR)CES\ min.}$		60	60	60	V
Emitter-base breakdown voltage $-I_E = 10\ \mu\text{A}; I_C = 0$	$-V_{(BR)EBO\ min.}$		5	5	5	V
Collector cut-off current $-V_{CE} = 32\text{ V}; I_E = 0$	$-I_{CES}$	max.	20	20	20	nA
Emitter cut-off current $V_{EB} = 4\text{ V}; I_C = 0$	I_{EBO}	max.	20	20	20	nA
Output capacitance at $f = 1\text{ MHz}$ $I_E = 0; -V_{CB} = 10\text{ V}$	C_c	max.	12	12	12	pF
Input capacitance at $f = 100\text{ kHz}$ $I_C = 0; -V_{EB} = 0.5\text{ V}$	C_e	max.	80	80	80	pF
Saturation voltages						
$-I_C = 500\text{ mA}; -I_B = 50\text{ mA}$	$-V_{CEsat}$	max.	0.7	0.7	0.7	V
$-I_C = 100\text{ mA}; -I_B = 10\text{ mA}$	$-V_{CEsat}$	typ.	0.3	0.3	0.3	V
$-I_C = 500\text{ mA}; -I_B = 50\text{ mA}$	$-V_{BEsat}$	max.	2	2	2	V
Noise figure at $R_S = 1\text{ k}\Omega$ $-I_C = 0.2\text{ mA}; -V_{CE} = 5\text{ V}$ $f = 1\text{ KHz}, BW = 200\text{ Hz}$						
	NF	max.	10	10	10	dB
Current Gain-Band width Product $I_C = 20\text{ mA}, V_{CE} = 10\text{ V}, f = 100\text{ MHz}$						
	f_T	min	100	100	100	MHz