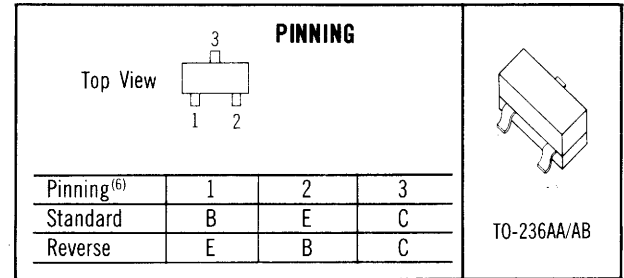


SERIES BCW MICROMINIATURE TRANSISTORS

- Series BCW consists of standard Pro-Electron transistor type numbers.
- These devices are molded in TO-236AA (high profile) or TO-236AB (low profile) packages. They are intended as an alternate to conventional "chip-and-wire" hybrid assembly techniques.
- P_D (Max.) = 350 mW, $T_J = +150^\circ\text{C}$ (Max.).
- Available in standard and reverse pin-out. Standard pin-out catalog numbers shown. For reverse pin-out add 'R' suffix to catalog number. Example: BCW29 standard pin-out; BCW29R reverse pin-out.



FOR PACKAGE DIMENSIONS, SEE PAGE 112.

Catalog Number ⁽⁶⁾	Marking	Polarity	V_{CB0} (V) Min.	V_{CE0} (V) Min.	V_{EB0} (V) Min.	I_{CB0} (nA) Max.	V_{CB} (V) α	I_{EB0} (nA) Max.	V_{EB} (V) α	h_{FE} Min.	h_{FE} Max.	I_C (mA) α	V_{CE} (V) &	$V_{CE(SAT)}$ (V) Max.	$V_{CE(SAT)}$ (V) Min.	$V_{BE(SAT)}$ (V) Max.	I_C (mA) α	I_B (mA)	C_{ob} (pF) Max.	f_T (MHz) Min.	I_C (mA) α	t_{off} (ns) Max.	NF (dB) Typ.
BCW29	C1	PNP	-30 ⁽¹⁾	-20	-5	-100	-20	—	—	120	260	-2	-5	-0.30	—	—	-10	-0.5	7	—	—	—	10 ⁽²⁾
BCW30	C2	PNP	-30 ⁽¹⁾	-20	-5	-100	-20	—	—	215	500	-2	-5	-0.30	—	—	-10	-0.5	7	—	—	—	10 ⁽²⁾
BCW31	D1	NPN	30	20	5	100	20	—	—	110	220	2	5	0.25	—	—	10	0.5	4	—	—	—	10 ⁽²⁾
BCW32	D2	NPN	30	20	5	100	20	—	—	200	450	2	5	0.25	—	—	10	0.5	4	—	—	—	10 ⁽²⁾
BCW33	D3	NPN	30	20	5	100	20	—	—	420	800	2	5	0.25	—	—	10	0.5	4	—	—	—	10 ⁽²⁾
BCW60A	AA	NPN	32 ⁽¹⁾	32	5	20	32	20	4	120	220	2	5	0.35	0.60	0.85	10	0.25	4.5	125	10	—	6 ⁽²⁾
BCW60B	AB	NPN	32 ⁽¹⁾	32	5	20	32	20	4	180	310	2	5	0.35	0.60	0.85	10	0.25	4.5	125	10	—	6 ⁽²⁾
BCW60C	AC	NPN	32 ⁽¹⁾	32	5	20	32	20	4	250	460	2	5	0.35	0.60	0.85	10	0.25	4.5	125	10	—	6 ⁽²⁾
BCW60D	AD	NPN	32 ⁽¹⁾	32	5	20	32	20	4	380	630	2	5	0.35	0.60	0.85	10	0.25	4.5	125	10	—	6 ⁽²⁾
BCW61A	BA	PNP	-32 ⁽¹⁾	-32	-5	-20	-32	-20	-5	120	220	-2	-5	-0.25	-0.60	-0.85	-10	-0.25	6	—	—	—	6 ⁽²⁾
BCW61B	BB	PNP	-32 ⁽¹⁾	-32	-5	-20	-32	-20	-5	180	310	-2	-5	-0.25	-0.60	-0.85	-10	-0.25	6	—	—	800 ⁽³⁾	6 ⁽²⁾
BCW61C	BC	PNP	-32 ⁽¹⁾	-32	-5	-20	-32	-20	-5	250	460	-2	-5	-0.25	-0.60	-0.85	-10	-0.25	6	—	—	800 ⁽³⁾	6 ⁽²⁾
BCW61D	BD	PNP	-32 ⁽¹⁾	-32	-5	-20	-32	-20	-5	380	630	-2	-5	-0.25	-0.60	-0.85	-10	-0.25	6	—	—	800 ⁽³⁾	6 ⁽²⁾
BCW65A	EA	NPN	60 ⁽¹⁾	32	5	20	32	20	4	100	250	100	1	—	—	2	500	50	12 ⁽⁴⁾	100	20	—	10 ⁽⁵⁾
BCW65B	EB	NPN	60 ⁽¹⁾	32	5	20	32	20	4	160	400	100	1	—	—	2	500	50	12 ⁽⁴⁾	100	20	—	10 ⁽⁵⁾
BCW66F	EF	NPN	75 ⁽¹⁾	45	5	20	45	20	4	100	250	100	1	—	—	2	500	50	12 ⁽⁴⁾	100	20	—	10 ⁽⁵⁾
BCW66G	EG	NPN	75 ⁽¹⁾	45	5	20	45	20	4	160	400	100	1	—	—	2	500	50	12 ⁽⁴⁾	100	-20	—	10 ⁽⁵⁾
BCW67A	DA	PNP	-45 ⁽¹⁾	-32	-5	-20	-32	-20	-4	100	250	-100	-1	-0.70	—	-2	-500	-50	18	100	-20	—	10 ⁽⁵⁾
BCW67B	DB	PNP	-45 ⁽¹⁾	-32	-5	-20	-32	-20	-4	160	400	-100	-1	-0.70	—	-2	-500	-50	18	100	-20	—	10 ⁽⁵⁾
BCW68F	DF	PNP	-60 ⁽¹⁾	-45	-5	-20	-45	-20	-4	100	250	-100	-1	-0.70	—	-2	-500	-50	18	100	-20	—	10 ⁽⁵⁾
BCW68G	DG	PNP	-60 ⁽¹⁾	-45	-5	-20	-45	-20	-4	160	400	-100	-1	-0.70	—	-2	-500	-50	18	100	-20	—	10 ⁽⁵⁾
BCW69	H1	PNP	-50 ⁽¹⁾	-45	-5	-100	-20	—	—	120	260	2	5	0.30	—	—	10	0.5	7	—	—	—	10 ⁽⁵⁾
BCW70	H2	PNP	50 ⁽¹⁾	45	5	100	20	—	—	215	500	2	5	-0.30	—	—	10	0.5	7	—	—	—	10 ⁽⁵⁾
BCW71	K1	NPN	50	45	5	100	20	—	—	110	220	2	5	0.25	—	—	10	0.5	4	—	—	—	10 ⁽⁵⁾
BCW72	K2	NPN	50	45	5	100	20	—	—	200	450	2	5	0.25	—	—	10	0.5	4	—	—	—	10 ⁽⁵⁾

Notes: 1. $V_{CE(SAT)}$.
 2. $I_C = 200 \mu\text{A}$, $V_{CE} = 5.0 \text{ V}$, $R_G = 2 \text{ k}\Omega$, $f = 1 \text{ kHz}$, $\Delta f = 200 \text{ Hz}$.
 3. $I_C = 10 \text{ mA}$, $I_{B1} = I_{B2} = 1 \text{ mA}$, $V_{CC} = 10 \text{ V}$.
 4. C_{ob} .

5. $I_C = 200 \mu\text{A}$, $V_{CE} = 5.0 \text{ V}$, $R_G = 1 \text{ k}\Omega$, $f = 1 \text{ kHz}$.
 6. Part numbers shown are for the high profile package and standard pinouts. To order the low profile package, add an "L" to the part number. To order reverse pinouts, end the part number with an "R."