

PNP general purpose transistors

BCW61 series

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 32 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT23 plastic package.
NPN complement: BCW60.

MARKING

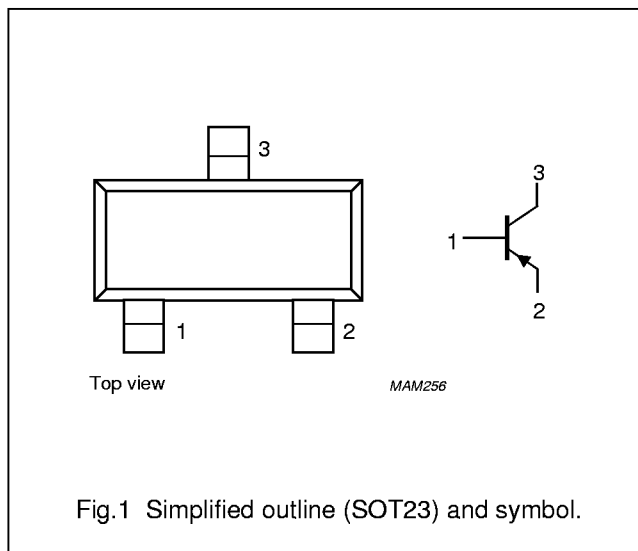
TYPE NUMBER	MARKING CODE ⁽¹⁾
BCW61B	BB*
BCW61C	BC*
BCW61D	BD*

Note

- * = p : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	—	–32	V
V_{CEO}	collector-emitter voltage	open base	—	–32	V
V_{EBO}	emitter-base voltage	open collector	—	–5	V
I_C	collector current (DC)		—	–100	mA
I_{CM}	peak collector current		—	–200	mA
I_{BM}	peak base current		—	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$; note 1	—	250	mW
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	junction temperature		—	150	$^{\circ}\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^{\circ}\text{C}$

Note

1. Transistor mounted on an FR4 printed-circuit board.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

$T_{amb} = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -32\text{ V}$	–	–	–20	nA
		$I_E = 0; V_{CB} = -32\text{ V}; T_{amb} = 150\text{ °C}$	–	–	–20	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -4\text{ V}$	–	–	–20	nA
h_{FE}	DC current gain	$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$				
	BCW61B		30	–	–	
	BCW61C		40	–	–	
	BCW61D		100	–	–	
	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$				
	BCW61B		180	–	310	
	BCW61C		250	–	460	
	BCW61D		380	–	630	
	DC current gain	$I_C = -50\text{ mA}; V_{CE} = -1\text{ V}$				
	BCW61B		80	–	–	
	BCW61C		100	–	–	
	BCW61D		110	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.25\text{ mA}$	–60	–	–250	mV
		$I_C = -50\text{ mA}; I_B = -1.25\text{ mA}$	–120	–	–550	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.25\text{ mA}$	–600	–	–850	mV
		$I_C = -50\text{ mA}; I_B = -1.25\text{ mA}$	–0.68	–	–1.05	V
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	–650	–750	mV
		$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	–	–550	–	mV
		$I_C = -50\text{ mA}; V_{CE} = -1\text{ V}$	–	–720	–	mV
C_c	collector capacitance	$I_E = I_C = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	4.5	–	pF
C_e	emitter capacitance	$I_C = I_E = 0; V_{EB} = -0.5\text{ V}; f = 1\text{ MHz}$	–	11	–	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ $f = 100\text{ MHz};$ note 1	100	–	–	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$	–	2	6	dB

Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$.

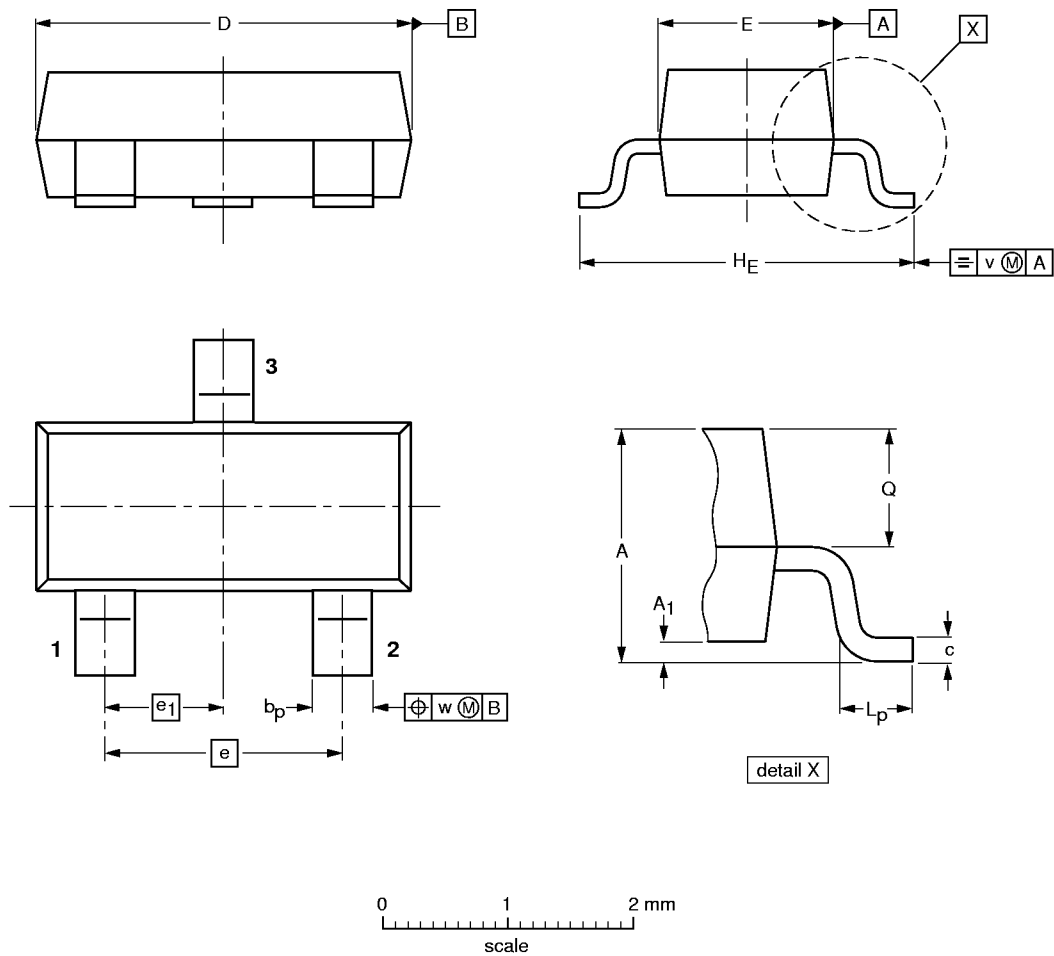
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23						97-02-28