

PNP general purpose transistors

BCW69; BCW70

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 45 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT23 plastic package.
NPN complements: BCW71 and BCW72.

MARKING

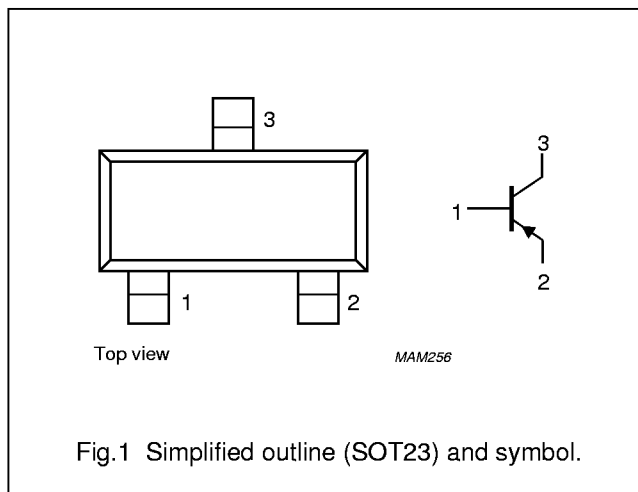
TYPE NUMBER	MARKING CODE ⁽¹⁾
BCW69	H1*
BCW70	H2*

Note

1. * = 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	—	–50	V
V_{CEO}	collector-emitter voltage	open base; $I_C = -2$ mA	—	–45	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		—	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	—	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

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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

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -20\text{ V}$	—	—	–100	nA
		$I_E = 0; V_{CB} = -20\text{ V}; T_j = 100\text{ °C}$	—	—	–10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	—	—	–100	nA
h_{FE}	DC current gain BCW69 BCW70	$I_C = -10\text{ μA}; V_{CE} = -5\text{ V}$	—	90	—	
			—	150	—	
	DC current gain BCW69 BCW70	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	120	—	260	
			215	—	500	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	—	–80	–300	mV
		$I_C = -50\text{ mA}; I_B = -2.5\text{ mA}; \text{note 1}$	—	–150	—	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	—	–720	—	mV
		$I_C = -50\text{ mA}; I_B = -2.5\text{ mA}; \text{note 1}$	—	–810	—	mV
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	—	–750	mV
C_c	collector capacitance	$I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	—	4.5	—	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	—	—	MHz
F	noise figure	$I_C = -200\text{ μA}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$	—	—	10	dB

Note

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

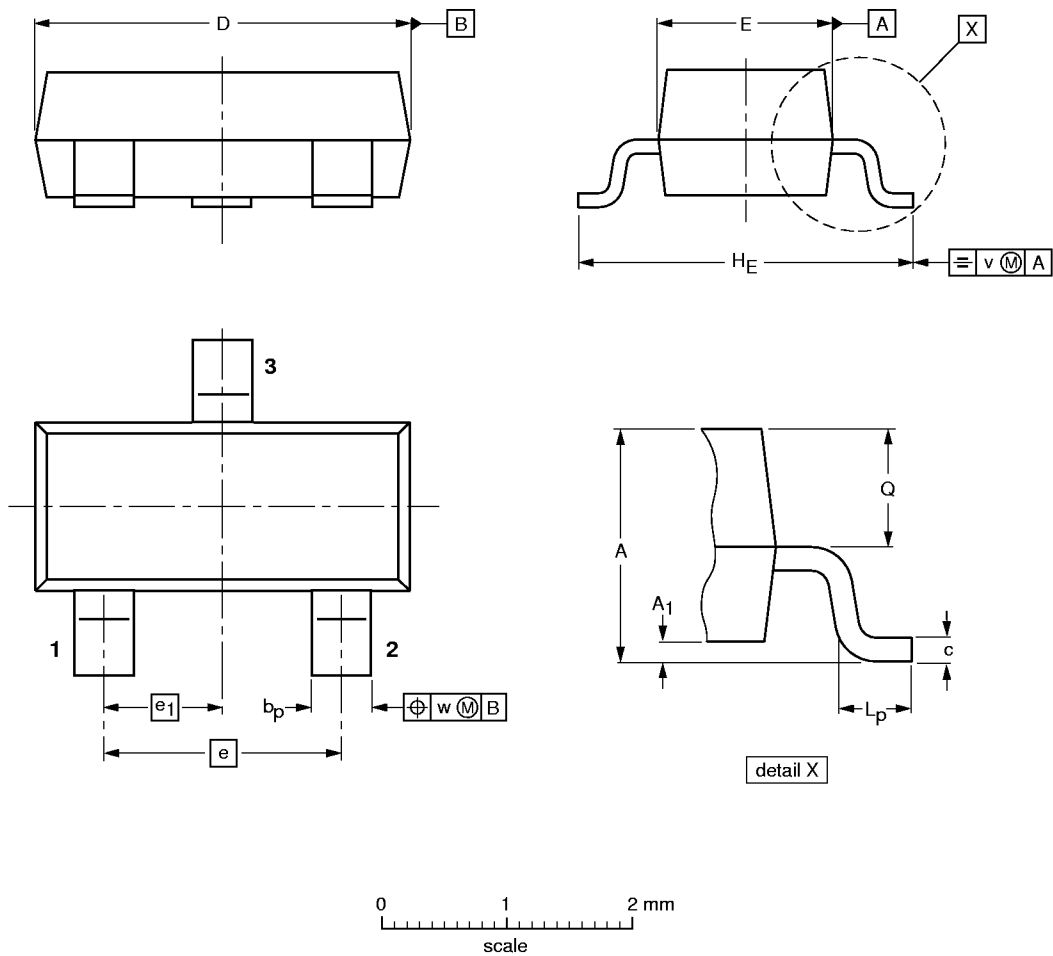
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PACKAGE OUTLINE

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