

NPN general purpose transistor

BCX19

FEATURES

- High current (500 mA)
- Low voltage (45 V).

APPLICATIONS

- General purpose amplification
- Saturated switching and driver applications.

DESCRIPTION

NPN transistor in a SOT23 plastic package.
PNP complement: BCX17.

MARKING

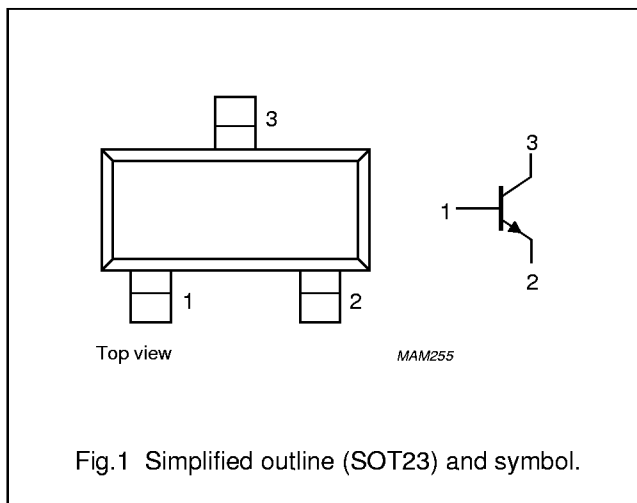
TYPE NUMBER	MARKING CODE ⁽¹⁾
BCX19	U8*

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; $I_C = 10\text{ mA}$	—	45	V
V_{EBO}	emitter-base voltage	open collector	—	5	V
I_C	collector current (DC)		—	500	mA
I_{CM}	peak collector current		—	1	A
I_{BM}	peak base current		—	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	—	250	mW
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		−65	+150	°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

$T_j = 25\text{ °C}$ 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
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ °C}$	–	–	5	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 1\text{ V}; \text{note 1}$				
		$I_C = 100\text{ mA}$	100	–	600	
		$I_C = 300\text{ mA}$	70	–	–	
		$I_C = 500\text{ mA}$	40	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA}; \text{note 2}$	–	–	620	mV
V_{BE}	base-emitter voltage	$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}; \text{notes 1 and 2}$	–	–	1.2	V
C_c	collector capacitance	$I_E = I_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	5	–	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz

Notes

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.
2. V_{BE} decreases by approximately -2 mV/°C with increasing temperature.

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23

