

## SILICON PLANAR EPITAXIAL TRANSISTORS

P-N-P transistors, in a SOT-23 plastic package, intended for application in thick and thin-film circuits. These transistors are intended for general purposes as well as saturated switching and driver applications for industrial service.

N-P-N complements are BCX19 and BCX20 respectively.

### QUICK REFERENCE DATA

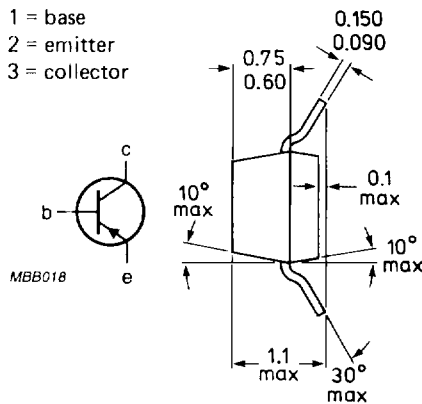
	BCX17	BCX18	
Collector-emitter voltage ( $V_{BE} = 0$ )	$-V_{CES}$ max.	50	30 V
Collector-emitter voltage (open base)	$-V_{CEO}$ max.	45	25 V
Collector current (peak value)	$-I_{CM}$ max.	1000	mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	$P_{tot}$ max.	250	mW
Junction temperature	$T_j$ max.	150	$^\circ\text{C}$
D.C. current gain	$h_{FE}$	100 to 600	
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$			
Transition frequency	$f_T$	> 80	MHz
$-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}; f = 100\text{ MHz}$			

### MECHANICAL DATA

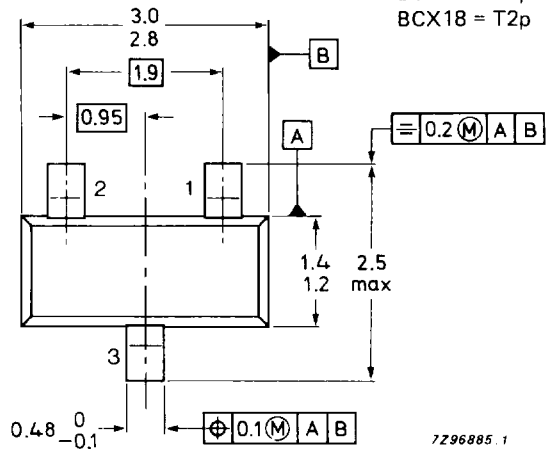
Fig. 1 SOT-23.

#### Pinning:

- 1 = base
- 2 = emitter
- 3 = collector



#### Dimensions in mm



#### Marking code

BCX17 = T1p  
BCX18 = T2p

#### TOP VIEW

Reverse pinning types are available on request.

**RATINGS**

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			BCX17	BCX18	
Collector-emitter voltage ( $V_{BE} = 0$ )	$-V_{CES}$	max.	50	30	V
Collector-emitter voltage $-I_C = 10$ mA (see Fig. 2)	$-V_{CEO}$	max.	45	25	V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5	5	V
Collector current (d.c.)	$-I_C$	max.	500		mA
Collector current (peak value)	$-I_{CM}$	max.	1000		mA
Emitter current (peak value)	$I_{EM}$	max.	1000		mA
Base current (d.c.)	$-I_B$	max.	100		mA
Base current (peak value)	$-I_{BM}$	max.	200		mA
Total power dissipation up to $T_{amb} = 25$ °C*	$P_{tot}$	max.	250		mW
Storage temperature	$T_{stg}$		-65 to + 150		°C
Junction temperature	$T_j$	max.	150		°C

**THERMAL RESISTANCE**

From junction to ambient  $R_{th\ j-a} = 500$  K/W

**CHARACTERISTICS**

$T_j = 25$  °C unless otherwise specified

Collector cut-off current $I_E = 0; -V_{CB} = 20$ V	$-I_{CBO}$	<	100	nA
$I_E = 0; -V_{CB} = 20$ V; $T_j = 150$ °C	$-I_{CBO}$	<	5	μA
Emitter cut-off current $I_C = 0; -V_{EB} = 5$ V	$-I_{EBO}$	<	10	μA
Base-emitter voltage ▲ $-I_C = 500$ mA; $-V_{CE} = 1$ V	$-V_{BE}$	<	1,2	V
Saturation voltage $-I_C = 500$ mA; $-I_B = 50$ mA	$-V_{CEsat}$	<	620	mV

\* Mounted on an FR4 printed-circuit board 8 mm x 10 mm x 0.7 mm.  
▲  $-V_{BE}$  decreases by about 2 mV/°C with increasing temperature.

D.C. current gain

$-I_C = 100 \text{ mA}; -V_{CE} = 1 \text{ V}$

BCX17-25  $h_{FE} > 160$

$-I_C = 300 \text{ mA}; -V_{CE} = 1 \text{ V}$

BCX17/18  $h_{FE} 100 \text{ to } 600$

$-I_C = 500 \text{ mA}; -V_{CE} = 1 \text{ V}$

$h_{FE} > 70$

$h_{FE} > 40$

Transition frequency at  $f = 100 \text{ MHz}$

$-I_C = 10 \text{ mA}; -V_{CE} = 5 \text{ V}$

$f_T \text{ typ. } 80 \text{ MHz}$

Collector capacitance at  $f = 1 \text{ MHz}$

$I_E = I_e = 0; -V_{CB} = 10 \text{ V}$

$C_c \text{ typ. } 8 \text{ pF}$