

SILICON PLANAR EPITAXIAL TRANSISTORS

Medium power n-p-n transistors in a miniature plastic package intended for applications in thick and thin-film circuits. These transistors are intended for general purposes as well as for use in driver stages of audio amplifiers.

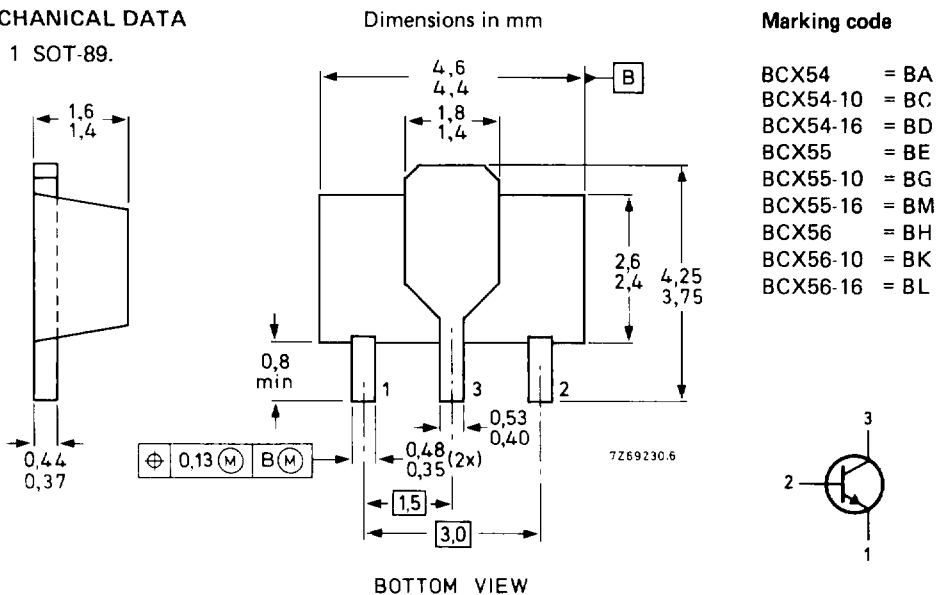
P-N-P complements are BCX51, BCX52 and BCX53 respectively.

QUICK REFERENCE DATA

	BCX54	BCX55	BCX56
Collector-base voltage (open emitter)	V_{CB0} max. 45	60	100 V
Collector-emitter voltage (open base)	V_{CEO} max. 45	60	80 V
Collector-emitter voltage ($R_{BE} = 1 \text{ k}\Omega$)	V_{CER} max. 45	60	100 V
Collector current (peak value)	I_{CM} max.	1,5	A
Total power dissipation up to $T_{amb} = 25 \text{ }^\circ\text{C}$	P_{tot} max.	1	W
Junction temperature	T_j max.	150	$^\circ\text{C}$
D.C. current gain $I_C = 150 \text{ mA}; V_{CE} = 2 \text{ V}$	h_{FE}	40 to 250	
Transition frequency at $f = 100 \text{ MHz}$ $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	f_T typ.	130	MHz

MECHANICAL DATA

Fig. 1 SOT-89.



RATINGS

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

		BCX54	BCX55	BCX56
Collector-base voltage (open emitter)	V_{CBO}	max. 45	60	100 V
Collector-emitter voltage (open base)	V_{CEO}	max. 45	60	80 V
Collector-emitter voltage ($R_{BE} = 1 \text{ k}\Omega$)	V_{CER}	max. 45	60	100 V
Emitter-base voltage (open collector)	V_{EBO}	max. 5	5	5 V
Collector current (d.c.)	I_C	max.	1,0	A
Collector current (peak value)	I_{CM}	max.	1,5	A
Base current (d.c.)	I_B	max.	0,1	A
Base current (peak value)	I_{BM}	max.	0,2	A
Total power dissipation up to $T_{amb} = 25 \text{ }^\circ\text{C}$ mounted on a ceramic substrate area = 2,5 cm ² ; thickness = 0,7 mm	P_{tot}	max.	1,0	W
Storage temperature	T_{stg}		-65 to +150	$^\circ\text{C}$
Junction temperature	T_j	max.	150	$^\circ\text{C}$

THERMAL RESISTANCE

From junction to collector tab	$R_{th \text{ j-tab}}$	=	10	K/W
From junction to ambient in free air mounted on a ceramic substrate area = 2,5 cm ² ; thickness = 0,7 mm	$R_{th \text{ j-a}}$	=	125	K/W

CHARACTERISTICS

$T_{amb} = 25 \text{ }^\circ\text{C}$ unless otherwise specified

Collector cut-off current $I_E = 0; V_{CB} = 30 \text{ V}$	I_{CBO}	<	100	nA
$I_E = 0; V_{CB} = 30 \text{ V}; T_j = 125 \text{ }^\circ\text{C}$	I_{CBO}	<	10	μA
Emitter cut-off current $I_C = 0; V_{EB} = 5 \text{ V}$	I_{EBO}	<	10	μA
Base-emitter voltage $I_C = 500 \text{ mA}; V_{CE} = 2 \text{ V}$	V_{BE}	<	1	V
Saturation voltage $I_C = 500 \text{ mA}; I_B = 50 \text{ mA}$	V_{CEsat}	<	0,5	V
D.C. current gain $I_C = 5 \text{ mA}; V_{CE} = 2 \text{ V}$	h_{FE}	>	25	
$I_C = 150 \text{ mA}; V_{CE} = 2 \text{ V}$	h_{FE}		40 to 250	
$I_C = 500 \text{ mA}; V_{CE} = 2 \text{ V}$	h_{FE}	>	25	
Transition frequency at $f = 100 \text{ MHz}$ $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	f_T	typ.	130	MHz

CHARACTERISTICS (continued)

D.C. current gain

 $I_C = 150 \text{ mA}; V_{CE} = 2 \text{ V}$ $h_{FE} >$
 $h_{FE} <$

BCX54-10	BCX54-16
55-10	55-16
56-10	56-16
63	100
160	250