

# HF SILICON PLANAR EPITAXIAL TRANSISTORS

PNP transistors in a plastic envelope intended for HF and IF applications in radio receivers, especially for mixer stages in AM receivers and IF stages in AM/FM receivers with negative earth.

## QUICK REFERENCE DATA

Collector-base voltage (open emitter)		$-V_{CBO}$	max.	40 V
Collector-emitter voltage (open base)		$-V_{CEO}$	max.	40 V
Collector current (DC)		$-I_C$	max.	25 mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$		$P_{tot}$	max.	300 mW
Junction temperature		$T_j$	max.	150 $^\circ\text{C}$
DC current gain		$h_{FE}$		62 to 200
$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$	BF450:			
	BF451:	$h_{FE}$		30 to 90
Transition frequency		$f_T$	min.	350 MHz
$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$				

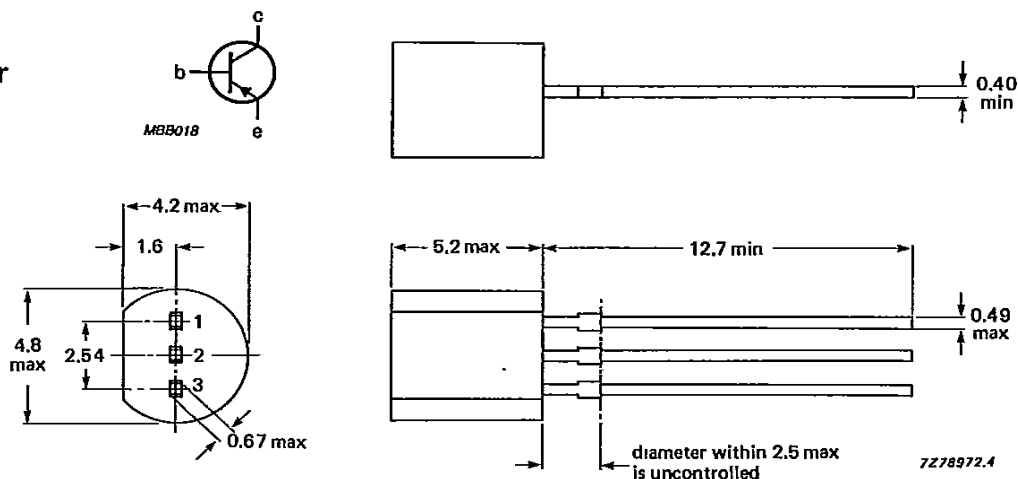
## MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

### Pinning:

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



**RATINGS**

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

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	40 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	40 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	4 V
Collector current (DC)	$-I_C$	max.	25 mA
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	$P_{tot}$	max.	300 mW
Storage temperature range	$T_{stg}$		-65 to +150 $^{\circ}\text{C}$
Junction temperature	$T_j$	max.	150 $^{\circ}\text{C}$

**THERMAL RESISTANCE**

From junction to ambient in free air	$R_{th\ j-a}$	=	420 K/W
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**CHARACTERISTICS**

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

Collector cut-off current

$I_E = 0; -V_{CB} = 30\text{ V}$

$-I_{CBO}$  max. 50 nA

$I_E = 0; -V_{CB} = 30\text{ V}; T_{amb} = 150\text{ }^{\circ}\text{C}$

$-I_{CBO}$  max. 4  $\mu\text{A}$

Emitter-cut-off current

$I_C = 0; -V_{EB} = 3\text{ V}$

$-I_{EBO}$  max. 100 nA

DC current gain

$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$

BF450

$h_{FE}$  62 to 200  $\mu\text{A}$

BF451

$h_{FE}$  30 to 90  $\mu\text{A}$

Base-emitter voltage

$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$

$-V_{BE}$  680 to 780 mV

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

$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$

$f_T$  min. 350 MHz

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

$-I_C = 1\text{ mA}; -V_{CE} = 10\text{ V}$

$C_{re}$  max. 0.43 pF