

SILICON PLANAR EPITAXIAL TRANSISTOR

NPN transistor in a plastic TO-92 package intended for HF applications in radio and television receivers; it is especially recommended for FM tuners, low noise AM mixer-oscillators with high source impedance and IF amplifiers in AM/FM receivers where a high current gain is of importance.

QUICK REFERENCE DATA

Collector-base voltage (open emitter)	V_{CBO}	max.	30 V
Collector-emitter voltage (open base)	V_{CEO}	max.	20 V
Collector current (DC)	I_C	max.	30 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			
$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	BF494	h_{FE}	67 to 220
	BF495	h_{FE}	35 to 125
Transition frequency at $f = 100\text{ MHz}$			
$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$		f_T	min. 120 MHz

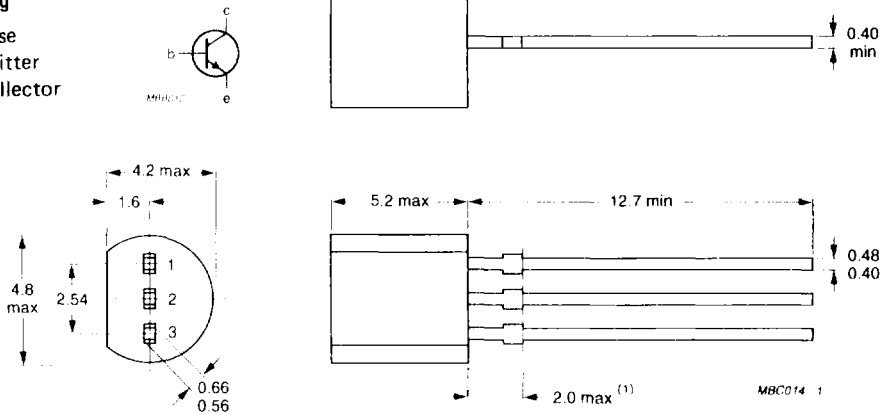
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

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



Note (1) Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

RATINGS

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

Collector-base voltage (open emitter)	V_{CBO}	max.	30 V
Collector-emitter voltage (open base)	V_{CEO}	max.	20 V
Emitter-base voltage (open collector)	V_{EBO}	max.	5 V
Collector current (DC)	I_C	max.	30 mA
Collector current (peak value)	I_{CM}	max.	30 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 specified

Base-emitter voltage

$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	V_{BE}	0.65 to 0.74 V
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DC current gain

$I_C = 1\text{ mA}, V_{CE} = 10\text{ V}$	BF494	h_{FE}	67 to 220
	BF494B	h_{FE}	100 to 220
	BF495	h_{FE}	35 to 125
	BF495C	h_{FE}	67 to 125
	BF495D	h_{FE}	35 to 76

Feedback capacitance at $f = 0.45\text{ MHz}$

$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	C_{re}	max.	1 pF
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Transition frequency

$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	f_T	min.	120 MHz
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Collector cut-off current

$I_E = 0; V_{CB} = 20\text{ V}$	I_{CBO}	max.	100 nA
$I_E = 0; V_{CB} = 20\text{ V}; T_{amb} = 150\text{ }^\circ\text{C}$	I_{CBO}	max.	4 μA

Emitter-base cut-off current

$I_C = 0; V_{EB} = 4\text{ V}$	I_{EBO}	max.	100 nA
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