



T-31-17

HF SILICON PLANAR EPITAXIAL TRANSISTORS

NPN transistors in a plastic envelope, recommended for AM mixers and IF amplifiers in AM/FM receivers.

QUICK REFERENCE DATA

Collector-base voltage (open emitter)	V_{CB0}	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 $T_{amb} = 25^\circ\text{C}$	P_{tot}	max.	300 mW															
Junction temperature	T_j	max.	150 $^\circ\text{C}$															
			<table border="1"> <thead> <tr> <th></th> <th>BF240</th> <th>BF241</th> </tr> </thead> <tbody> <tr> <td>DC current gain $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$</td> <td>$h_{FE}$</td> <td>67 to 220</td> <td>35 to 125 μA</td> </tr> <tr> <td>Transition frequency $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$</td> <td>$f_T$</td> <td>min. 150</td> <td>MHz</td> </tr> <tr> <td>Feedback capacitance at $f = 1\text{ MHz}$ $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$</td> <td>$-C_{re}$</td> <td>max.</td> <td>0.34 pF</td> </tr> </tbody> </table>		BF240	BF241	DC current gain $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	h_{FE}	67 to 220	35 to 125 μA	Transition frequency $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	f_T	min. 150	MHz	Feedback capacitance at $f = 1\text{ MHz}$ $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	$-C_{re}$	max.	0.34 pF
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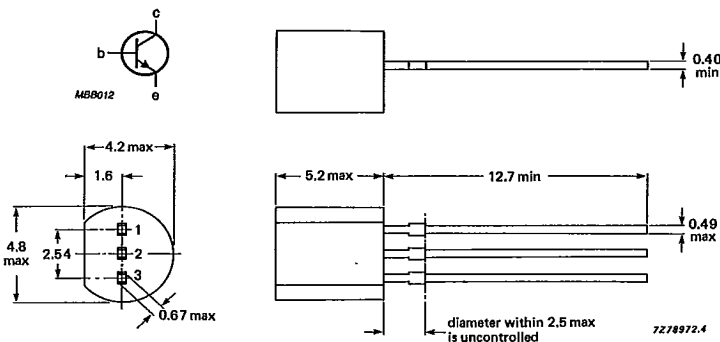
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

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



Capability approved to CECC NECC-C-002

BF240
BF241

PHILIPS INTERNATIONAL

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T-31-17

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 specified

Collector cut-off current

$I_E = 0; V_{CB} = 20\text{ V}$

$I_E = 0; V_{CB} = 20\text{ V}; T_{amb} = 150\text{ }^\circ\text{C}$

I_{CBO}	max.	100 nA
I_{CBO}	max.	4 μA

Base-emitter voltage

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

V_{BE}	typ.	700 mV
		650 to 740 mV

DC current gain

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

	BF240	BF241
h_{FE}	67 to 220	35 to 125

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

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

f_T	min.	150	MHz
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Feedback capacitance at $f = 1\text{ MHz}$

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

C_{re}	max.	0.34	pF
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Emitter-base cut-off current

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

I_{EBO}	max.	100	nA
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