

## SILICON PLANAR TRANSISTOR

N-P-N transistor in a plastic TO-92 package. The BF198 has a very low feedback capacitance and is intended for use in the forward gain control stage of the television i.f. amplifier.

### QUICK REFERENCE DATA

Collector-base voltage (open emitter)	$V_{CBO}$	max.	40 V
Collector-emitter voltage (open base)	$V_{CEO}$	max.	30 V
Collector current (d.c.)	$I_C$	max.	25 mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	$P_{tot}$	max.	500 mW
Junction temperature	$T_j$	max.	150 $^\circ\text{C}$
Transition frequency at $f = 100\text{ MHz}$ $I_C = 4\text{ mA}; V_{CE} = 10\text{ V}$	$f_T$	typ.	400 MHz
Feedback capacitance at $f = 10,7\text{ MHz}$ $I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	$C_{re}$	typ.	200 fF

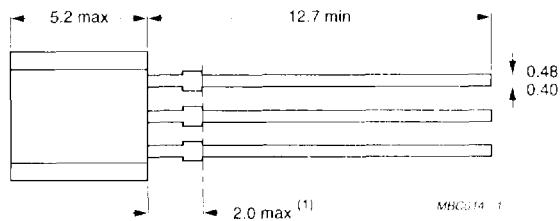
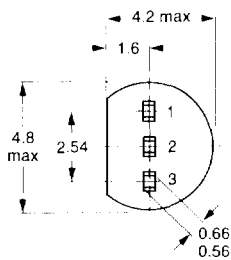
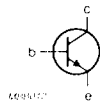
### MECHANICAL DATA

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.	40	V
Collector-emitter voltage (open base)	$V_{CEO}$	max.	30	V
Emitter-base voltage (open collector)	$V_{EBO}$	max.	4	V
Collector current (d. c.)	$I_C$	max.	25	mA
Collector current (peak value)	$I_{CM}$	max.	25	mA
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	$P_{tot}$	max.	500	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	$R_{th\ j-a}$	=	0,25	K/mW
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**CHARACTERISTICS**

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

Base current at about 50 dB gain control

$I_C = 6\text{ mA}; V_{CE} = 2\text{ V}$	$I_B$	<	270	$\mu\text{A}$
$I_C = 15\text{ mA}; V_{CE} = 5\text{ V}$	$I_B$	<	1,5	mA

Base current

$I_C = 4\text{ mA}; V_{CE} = 10\text{ V}$	$I_B$	typ.	60	$\mu\text{A}$
		<	150	$\mu\text{A}$

Base-emitter voltage <sup>1)</sup>

$I_C = 4\text{ mA}; V_{CE} = 10\text{ V}$	$V_{BE}$	typ.	760	mV
		<	850	mV

Feedback capacitance at  $f = 10,7\text{ MHz}$

$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	$C_{re}$	typ.	200	fF
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Transition frequency at  $f = 100\text{ MHz}$

$I_C = 4\text{ mA}; V_{CE} = 10\text{ V}$	$f_T$	typ.	400	MHz
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1)  $V_{BE}$  decreases by about 1,7 mV/K with increasing temperature.