



SILICON PLANAR EPITAXIAL TRANSISTOR

NPN transistor in a plastic TO-92 envelope, intended for low-voltage, high-current LF applications. BC375/BC376 is the matched complementary pair suitable for output stages up to 2 W.

QUICK REFERENCE DATA

Collector-base voltage (open emitter)	V_{CBO}	max.	30 V
Collector-emitter voltage (open base)	V_{CEO}	max.	30 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.	800 mW
Junction temperature	T_j	max.	150 $^{\circ}\text{C}$
DC current gain $I_C = 150\text{ mA}; V_{CE} = 1\text{ V}$	h_{FE}		100 to 400
Transition frequency at $f = 35\text{ MHz}$ $I_C = 150\text{ mA}; V_{CE} = 1\text{ V}$	f_T	typ.	150 MHz

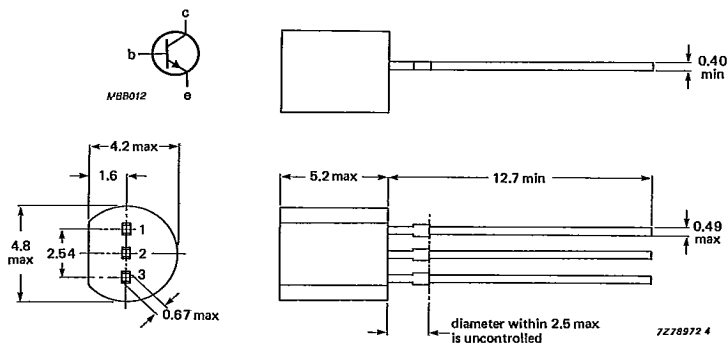
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

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



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.	30 V
Emitter-base voltage (open collector)	V_{EBO}	max.	6 V
Collector current (DC)	I_C	max.	1 A
Collector current (peak value)	I_{CM}	max.	1,5 A
Base current (DC)	I_B	max.	100 mA
Base current (peak value)	I_{BM}	max.	200 mA
Total power dissipation	P_{tot}	max.	625 mW
at $T_{amb} = 25\text{ }^\circ\text{C}$ (in free air)	P_{tot}	max.	800 mW
up to $T_{amb} = 25\text{ }^\circ\text{C}^*$			
Storage temperature	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	$R_{th\ j-a}$	=	200 K/W
From junction to ambient *	$R_{th\ j-a}$	=	156 K/W
From junction to case	$R_{th\ j-c}$	=	95 K/W

CHARACTERISTICS

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

Collector cut-off current

 $I_E = 0; V_{CB} = 25\text{ V}$ $I_E = 0; V_{CB} = 25\text{ V}; T_j = 150\text{ }^\circ\text{C}$

I_{CBO}	max.	100 nA
I_{CBO}	max.	5 μA

Emitter cut-off current

 $I_C = 0; V_{EB} = 5\text{ V}$

I_{EBO}	max.	10 μA
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Base-emitter voltage**

 $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$ $I_C = 700\text{ mA}; V_{CE} = 1\text{ V}$

V_{BE}	typ.	650 mV
V_{BE}	max.	1.1 V

Collector-emitter saturation voltage

 $I_C = 700\text{ mA}; I_B = 70\text{ mA}$

V_{CEsat}	typ.	250 mV
	max.	400 mV

D.C. current gain

 $I_C = 5\text{ mA}; V_{CE} = 10\text{ V}$ $I_C = 150\text{ mA}; V_{CE} = 1\text{ V}$ $I_C = 700\text{ mA}; V_{CE} = 1\text{ V}$

h_{FE}	min.	100
h_{FE}		100 to 400
h_{FE}	min.	50

Transition frequency at $f = 35\text{ MHz}$ $I_C = 150\text{ mA}; V_{CE} = 1\text{ V}$

f_T	typ.	150 MHz
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* Transistor mounted on printed-circuit board, maximum lead length 4 mm, mounting pad for collector lead minimum 10 mm x 10 mm.

** V_{BE} decreases by about 2 mV/K with increasing temperature.