



SILICON PLANAR EPITAXIAL TRANSISTOR

NPN transistor in a plastic TO-92 envelope, intended for low-voltage, high current LF applications. BC368/BC369 is the matched complementary pair suitable for class-B audio output stages up to 3 W.

QUICK REFERENCE DATA

Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max.	25 V
Collector-emitter voltage (open base)	V_{CEO}	max.	20 V
Collector current (peak value)	I_{CM}	max.	2 A
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	max.	1 W
Junction temperature	T_j	max.	150 $^\circ\text{C}$
DC current gain	h_{FE}		85 to 375
$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$			
Transition frequency at $f = 35\text{ MHz}$	f_T	min.	40 MHz
$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$			

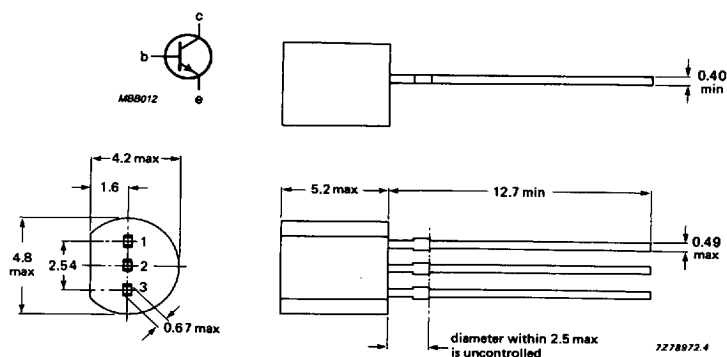
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

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



Capability approved to CECC NECC-C-002

RATINGS

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

Collector-emitter voltage ($V_{BE} = 0$)	V_{CES}	max.	25 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.	1 A
Collector current (peak value)	I_{CM}	max.	2 A
Base current (DC)	I_B	max.	100 mA
Base current (peak value)	I_{BM}	max.	200 mA
Total power dissipation	P_{tot}	max.	0,8 W
at $T_{amb} = 25\text{ }^\circ\text{C}$ (in free air)	P_{tot}	max.	1 W
up to $T_{amb} = 25\text{ }^\circ\text{C}^*$			
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	$R_{th\ j-a}$	=	156 K/W
From junction to ambient*	$R_{th\ j-a}$	=	125 K/W
From junction to case	$R_{th\ j-c}$	=	60 K/W

* Transistor mounted on printed-circuit board, maximum lead length 4 mm, mounting pad for collector lead min. 10 mm x 10 mm.

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.	10 μA
I_{CBO}	max.	1 mA

Emitter cut-off current

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

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

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

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

V_{BE}	max.	0.7 V
V_{BE}	max.	1 V

Collector-emitter saturation voltage

$I_C = 1\text{ A}; I_B = 100\text{ mA}$

V_{CEsat}	max.	0.5 V
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DC current gain

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

$I_C = 500\text{ mA}; V_{CE} = 1\text{ V}$

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

h_{FE}	min.	50
h_{FE}		85 to 375
h_{FE}	min.	60

Collector capacitance at $f = 450\text{ kHz}$

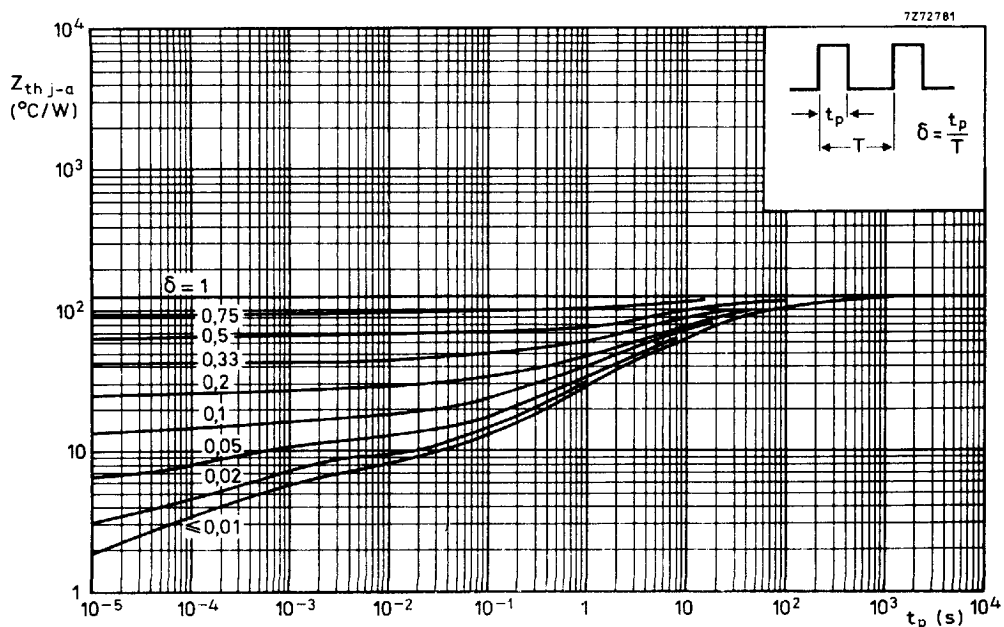
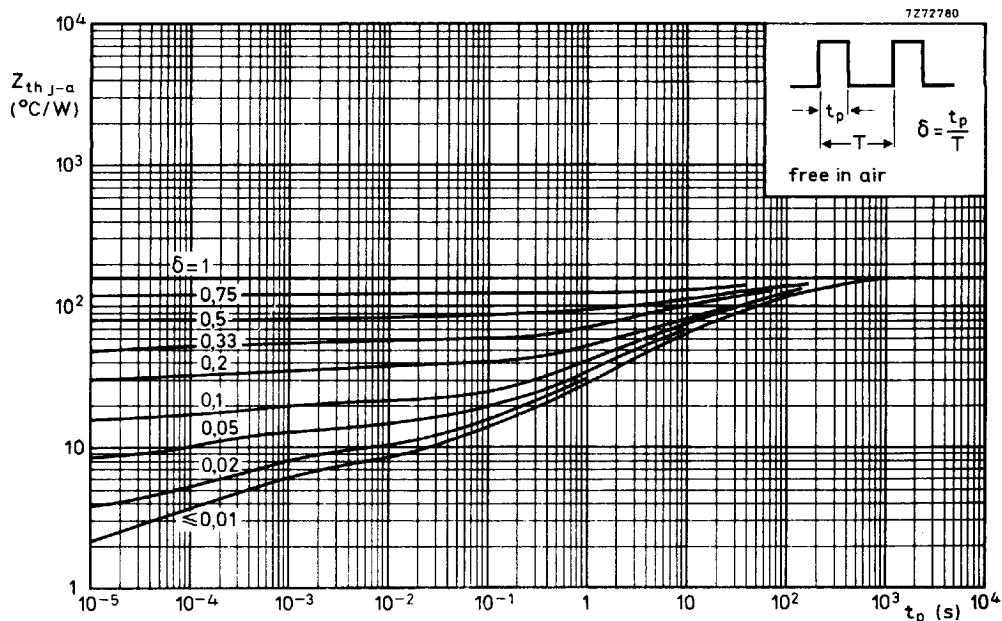
$I_E = I_e = 0; V_{CB} = 5\text{ V}$

C_c	max.	40 pF
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Transition frequency at $f = 35\text{ MHz}$

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

f_T	min.	40 MHz
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Silicon planar epitaxial transistor

BC368

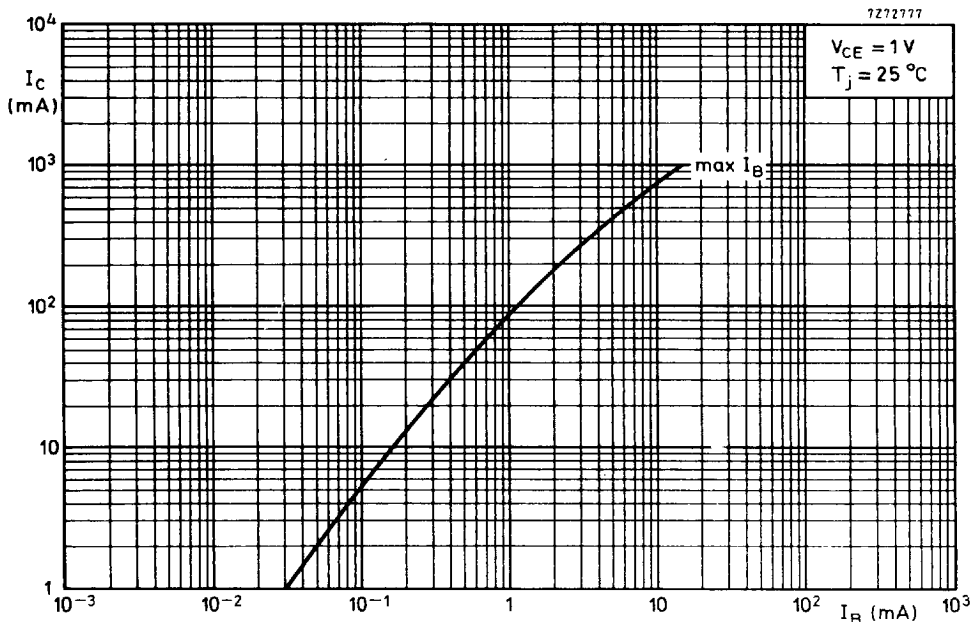


Fig. 4.

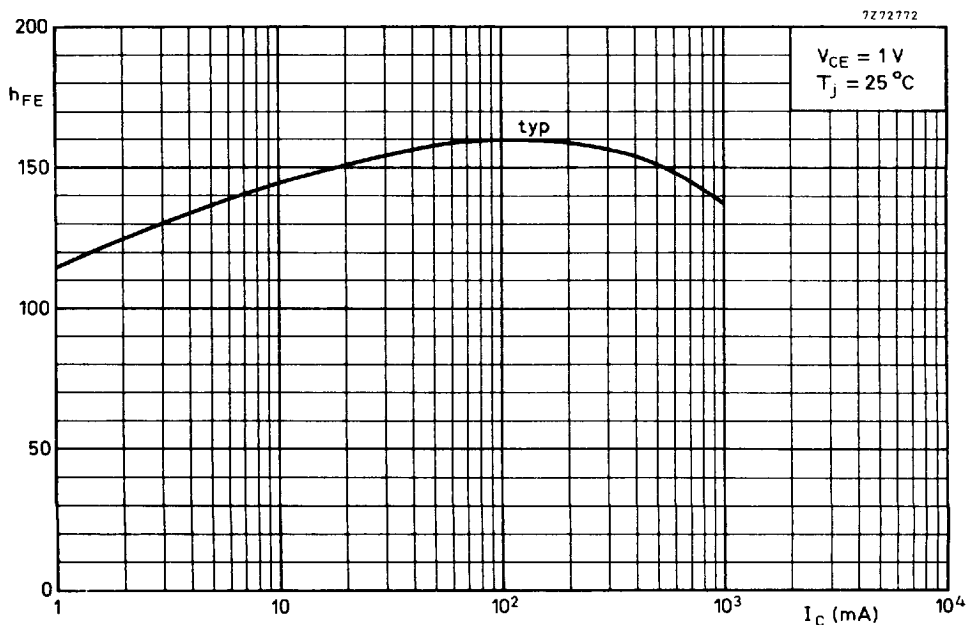


Fig. 5.

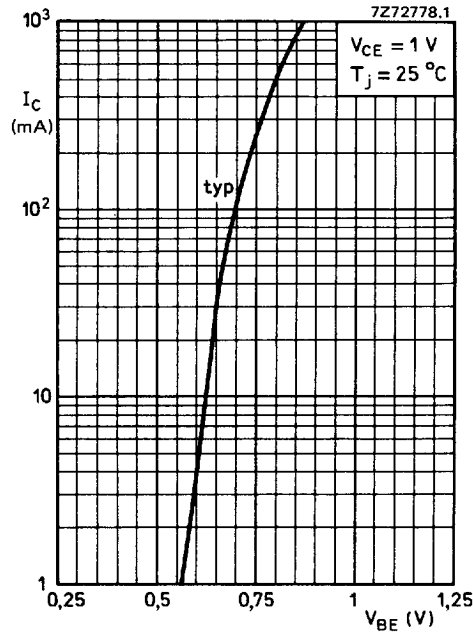


Fig. 6.

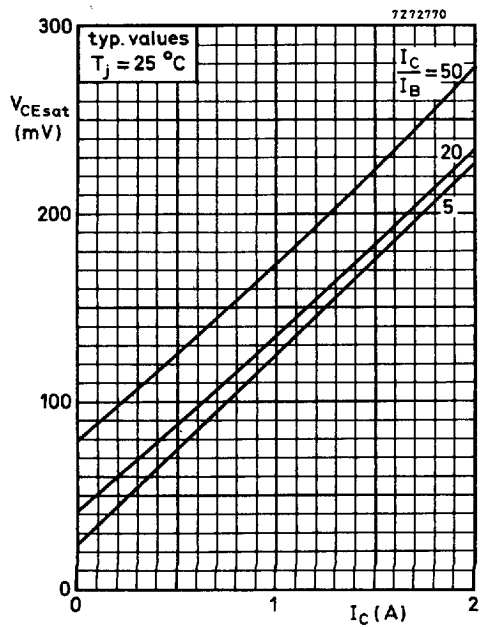


Fig. 7.

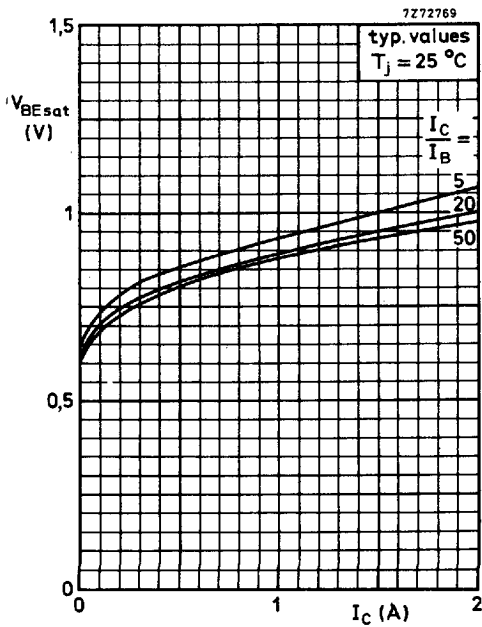


Fig. 8.

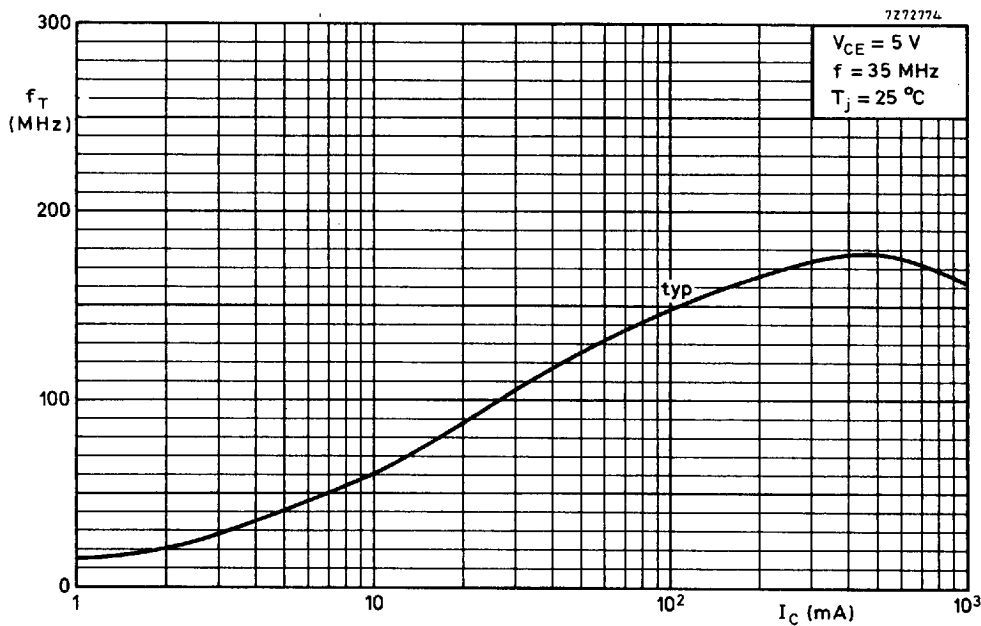


Fig. 9.