BC337
BC337A
BC338

SILICON PLANAR EPITAXIAL TRANSISTORS

N-P-N transistors in plastic TO-92 envelopes, primarily intended for use in driver and output stages of audio amplifiers.

The BC337, BC337A, BC338 are complementary to the BC327, BC327A and BC328 respectively.

QUICK REFERENCE DATA

			BC337	BC337A	BC338	
Collector-emitter voltage (V_{BE} = 0)	V_{CES}	max.	50	60	30	V
Collector-emitter voltage (open base)	V_{CEO}	max.	45	60	25	V
Collector current (peak value)	I_{CM}	max.		1000		mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.		800		mW
Junction temperature	T_j	max.		150		°C
Transition frequency at f = 35 MHz I_C = 10 mA; V_{CE} = 5 V	f_T	typ.		100		MHz
D.C. current gain I_C = 100 mA; V_{CE} = 1 V	h_{FE}			100 to 600		

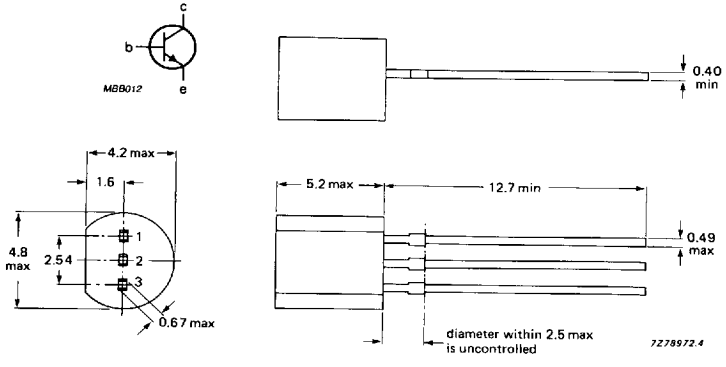
MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92.

Pinning

1 = emitter
2 = base
3 = collector



Capability approved to CECC NECC-C-002

RATINGS

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

			BC337	BC337A	BC338	
Collector-emitter voltage (V_{BE} = 0)	V_{CES}	max.	50	60	30	V
Collector-emitter voltage (open base) I_C = 10 mA	V_{CEO}	max.	45	60	25	V
Emitter-base voltage (open collector)	V_{EBO}	max.	5	5	5	V
Collector current (d.c.)	I_C	max.		500		mA
Collector current (peak value)	I_{CM}	max.		1000		mA
Emitter current (peak value)	$-I_{EM}$	max.		1000		mA
Base current (d.c.)	I_B	max.		100		mA
Base current (peak value)	I_{BM}	max.		200		mA
Total power dissipation at T_{amb} = 25 °C	P_{tot}	max.		625		mW
up to T_{amb} = 25 °C	P_{tot}	max.		800		mW*
Storage temperature	T_{stg}			−65 to +150		°C
Junction temperature	T_j	max.		150		°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\text{-}a}$	=	0,2	K/mW
From junction to ambient	$R_{th\ j\text{-}a}$	=	0,156	K/mW*

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

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Collector cut-off current				
I_E = 0; V_{CB} = 20 V; T_j = 25 °C		I_{CBO}	<	100 nA
I_E = 0; V_{CB} = 20 V; T_j = 150 °C		I_{CBO}	<	5 μA
Emitter cut-off current				
I_C = 0; V_{EB} = 5 V		I_{EBO}	<	10 μA
Base-emitter voltage*				
I_C = 500 mA; V_{CE} = 1 V		V_{BE}	<	1,2 V
Saturation voltage				
I_C = 500 mA; I_B = 50 mA		V_{CEsat}	<	700 mV
D.C. current gain				
I_C = 500 mA; V_{CE} = 1 V		h_{FE}	>	40
I_C = 100 mA; V_{CE} = 1 V;	BC337; BC338	h_{FE}		100 to 600
	BC337A	h_{FE}		100 to 400
	BC337-16 BC338-16	h_{FE}		100 to 250
	BC337-25 BC338-25	h_{FE}		160 to 400
	BC337-40 BC338-40	h_{FE}		250 to 600
Transition frequency at f = 35 MHz				
I_C = 10 mA; V_{CE} = 5 V		f_T	typ.	100 MHz
Collector capacitance at f = 1 MHz				
$I_E = I_e$ = 0; V_{CB} = 10 V		C_c	typ.	5 pF

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

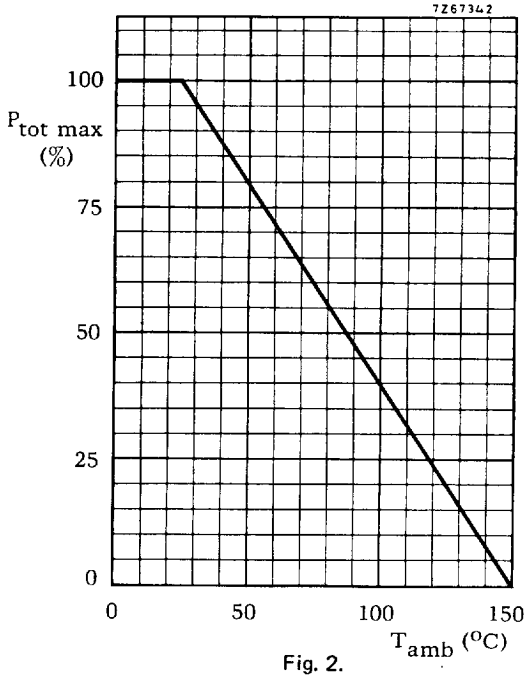


Fig. 2.

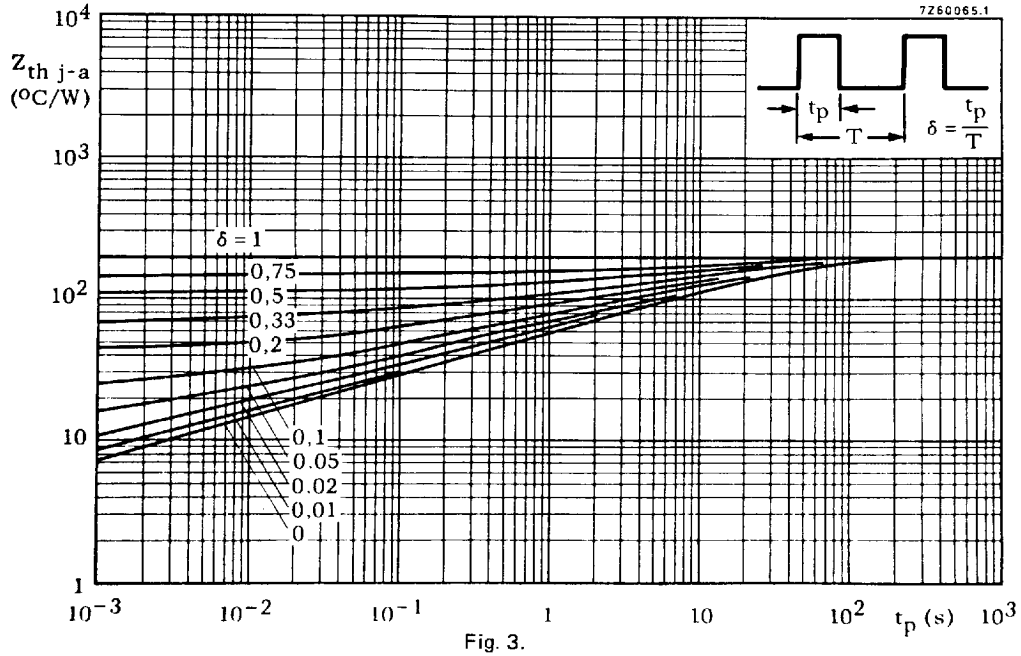


Fig. 3.

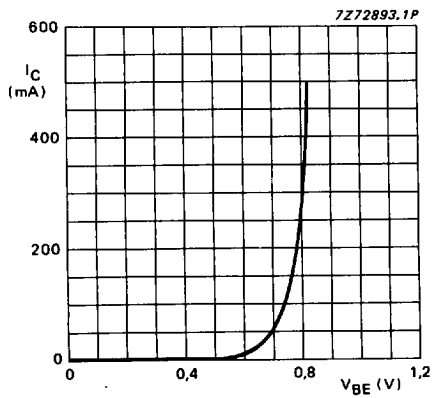


Fig. 4 V_{CE} = 1 V; T_j = 25 °C; typical values.

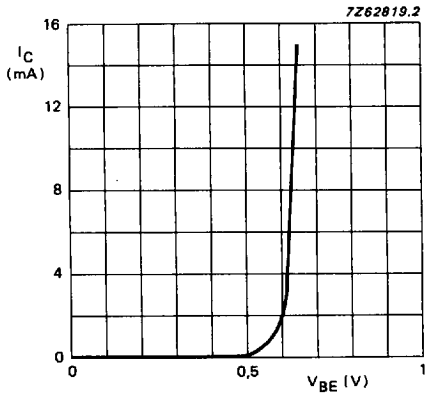


Fig. 5 V_{CE} = 5 V; T_j = 25 °C; typical values.

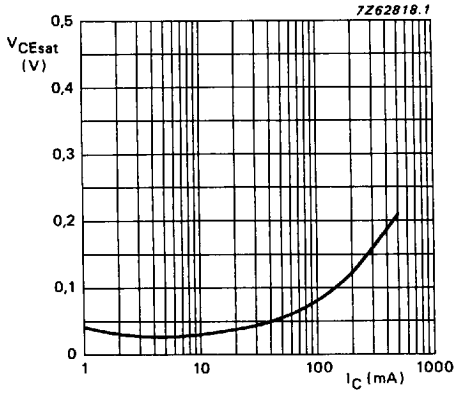


Fig. 6 I_C/I_B = 10; T_j = 25 °C; typical values.

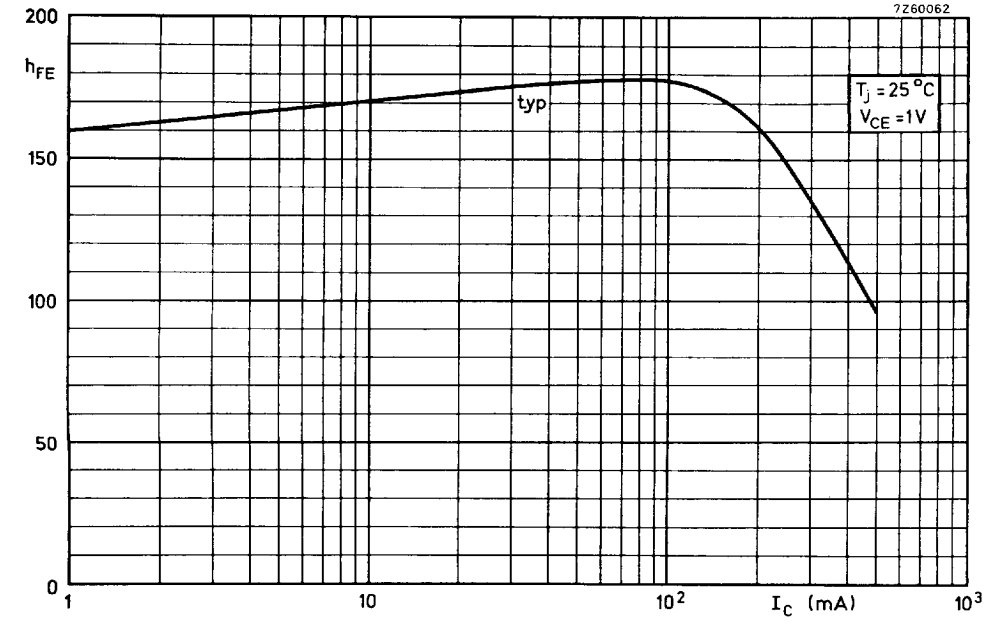


Fig. 7.

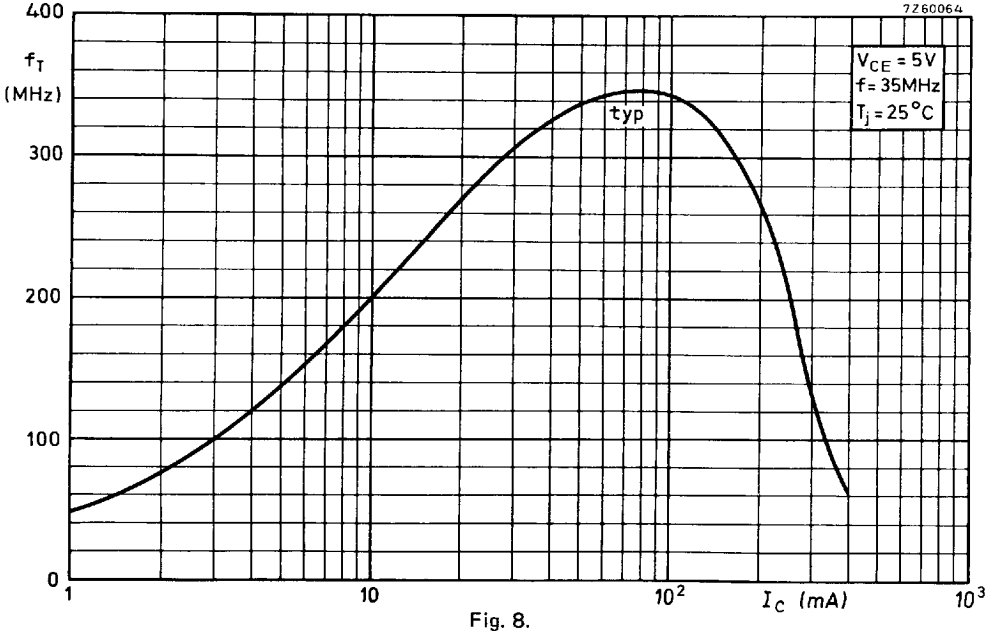


Fig. 8.

APPLICATION INFORMATION, see BC327; BC328.