SILICON PLANAR EPITAXIAL TRANSISTOR

P-N-P transistor in a plastic microminiature envelope, intended for low-voltage, high-current l.f. applications. BC868/BC869 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 °C	P_{tot}	max.	1	W
Junction temperature	T_j	max.	150	°C
D.C. current gain $-I_C$ = 500 mA; $-V_{CE}$ = 1 V	h_{FE}		85 to 375	
Transition frequency at f = 35 MHz $-I_C$ = 10 mA; $-V_{CE}$ = 5 V	f_T	typ.	60	MHz

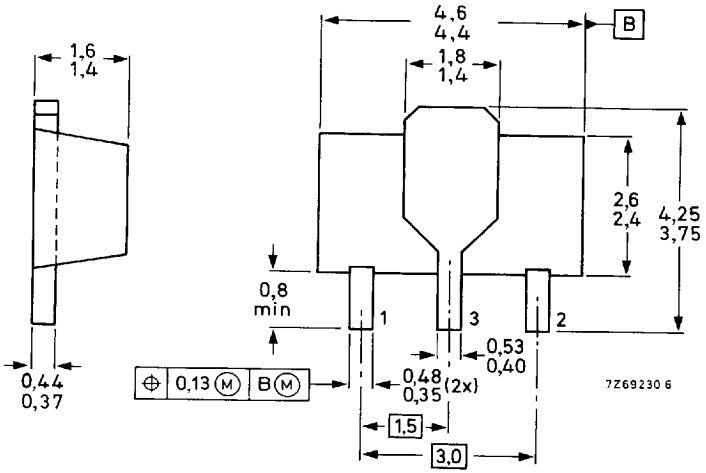
MECHANICAL DATA

Fig. 1 SOT-89.

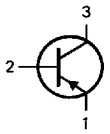
Dimensions in mm

Marking code

BC869 = CEC
BC869-10 = CFC



BOTTOM VIEW



See also *Soldering recommendations.*

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 (d.c.)	$-I_C$	max.	1 A
Collector current (peak value)	$-I_{CM}$	max.	2 A
Base current (d.c.)	$-I_B$	max.	100 mA
Base current (peak value)	$-I_{BM}$	max.	200 mA
Total power dissipation up to T_{amb} = 25 °C*	P_{tot}	max.	1 W
Storage temperature	T_{stg}		−65 to + 150 °C
Junction temperature	T_j	max.	150 °C

THERMAL RESISTANCE

From junction to ambient in free air*	$R_{th\ j\text{-}a}$	=	125 K/W
From junction to tab	$R_{th\ j\text{-}t}$	=	10 K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Collector cut-off current				
I_E = 0; $-V_{CB}$ = 25 V		$-I_{CBO}$	<	10 μA
I_E = 0; $-V_{CB}$ = 25 V; T_j = 150 °C		$-I_{CBO}$	<	1 mA
Emitter cut-off current				
I_C = 0; $-V_{EB}$ = 5 V		$-I_{EBO}$	<	10 μA
Base-emitter voltage				
$-I_C$ = 5 mA; $-V_{CE}$ = 10 V		$-V_{BE}$	typ.	0,62 V
$-I_C$ = 1 A; $-V_{CE}$ = 1 V		$-V_{BE}$	<	1 V
Collector-emitter saturation voltage				
$-I_C$ = 1 A; $-I_B$ = 100 mA		$-V_{CEsat}$	<	0,5 V
D.C. current gain				
$-I_C$ = 5 mA; $-V_{CE}$ = 10 V	BC869	h_{FE}	>	50
$-I_C$ = 500 mA; $-V_{CE}$ = 1 V	BC869	h_{FE}		85 to 375
	BC869-10	h_{FE}	⩽	160
	BC869-16	h_{FE}		100 to 250
	BC869-25	h_{FE}	⩾	160
$-I_C$ = 1 A; $-V_{CE}$ = 1 V	BC869	h_{FE}	>	60
Collector capacitance at f = 450 kHz				
$I_E = I_e$ = 0; $-V_{CB}$ = 5 V		C_c	typ.	45 pF
Transition frequency at f = 35 MHz				
$-I_C$ = 10 mA; $-V_{CE}$ = 5 V		f_T	typ.	60 MHz

* Mounted on a ceramic substrate, area = 2,5 cm²; thickness = 0,7 mm.

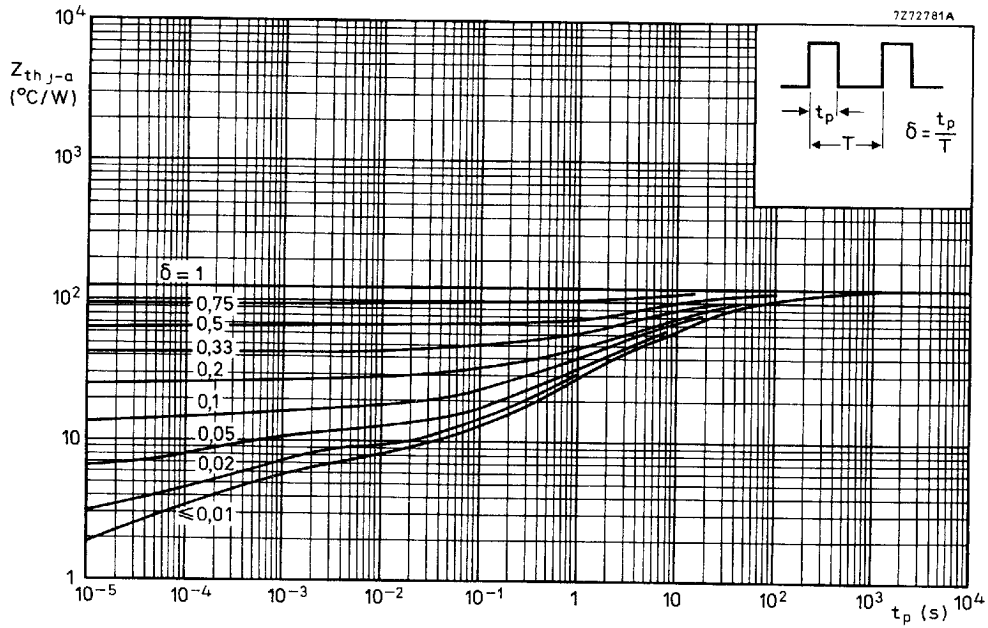


Fig. 2 Pulse power rating chart.

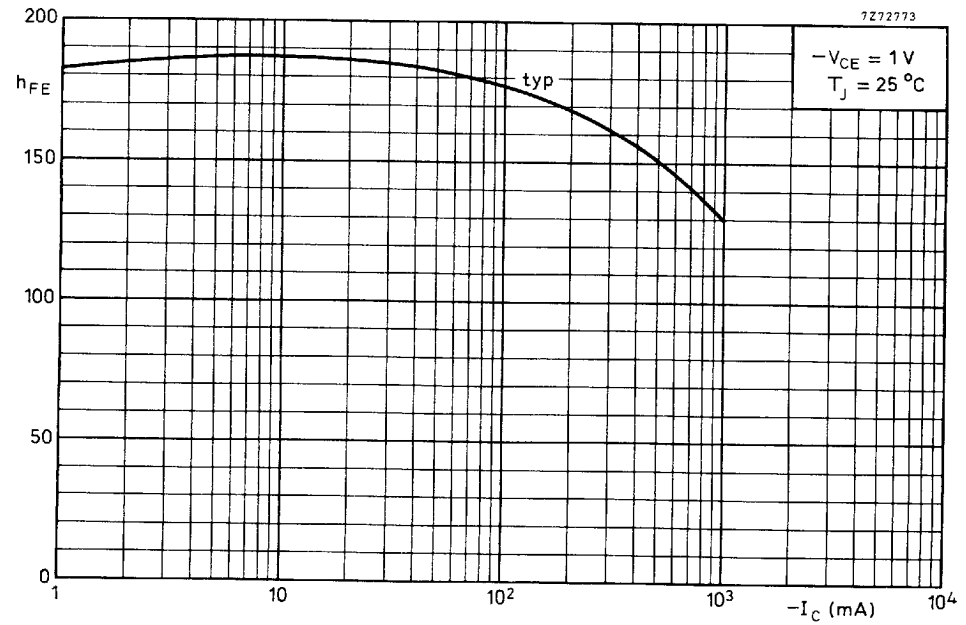


Fig. 3 D.C. current gain.

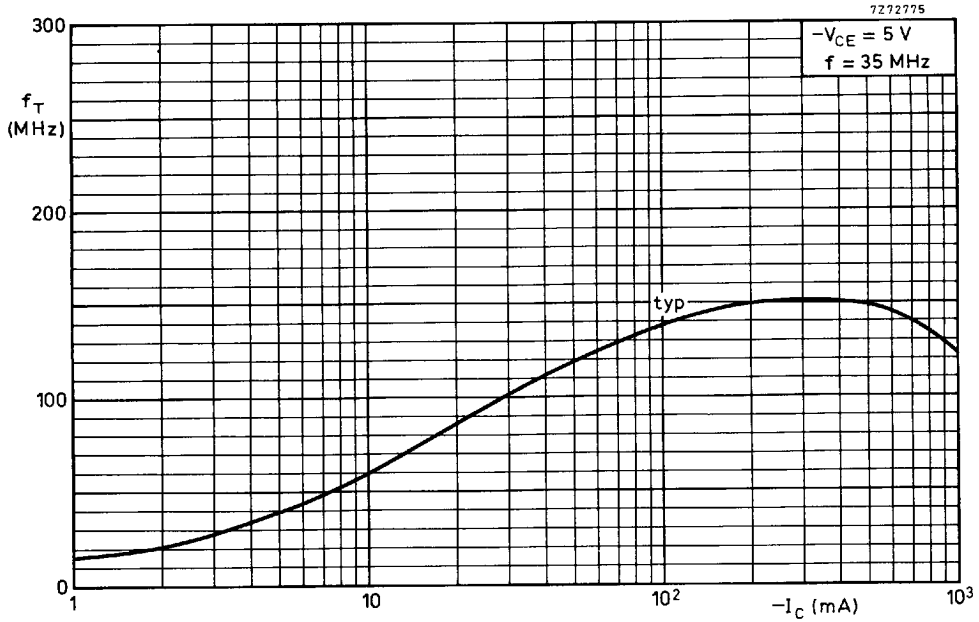


Fig. 4 Typical values transition frequency as a function of collector current.

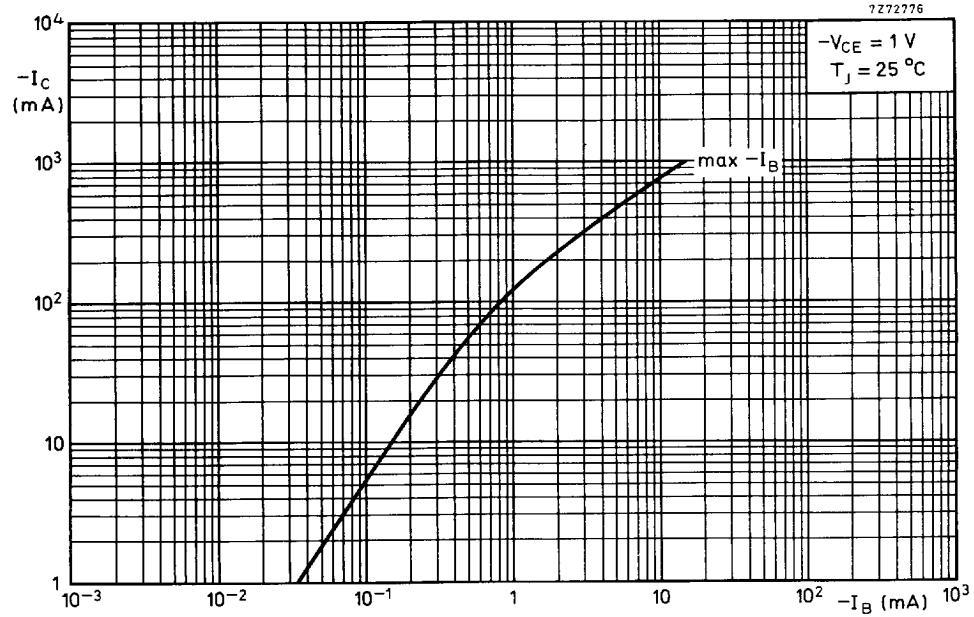


Fig. 5 Typical values collector current as a function of maximum base current.

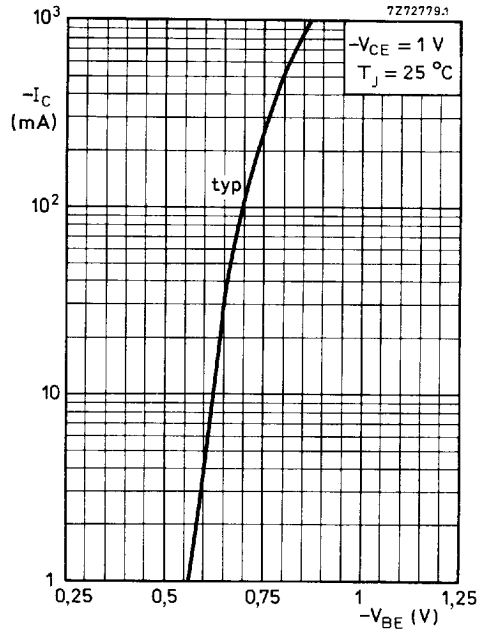


Fig. 6 Typical values collector current as a function of base-emitter voltage.

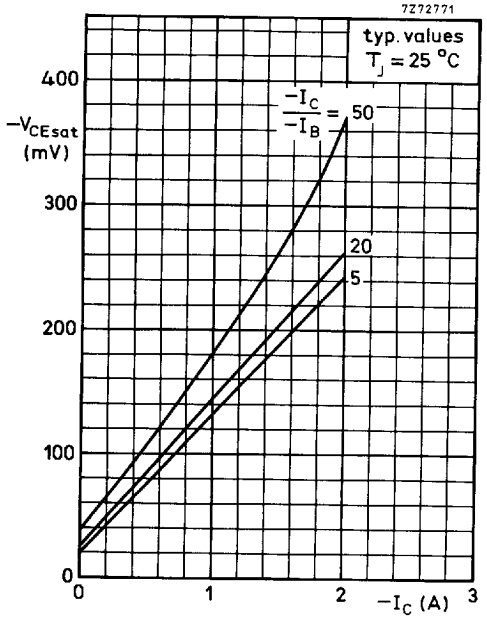


Fig. 7 Collector-emitter saturation voltage as a function of collector current.

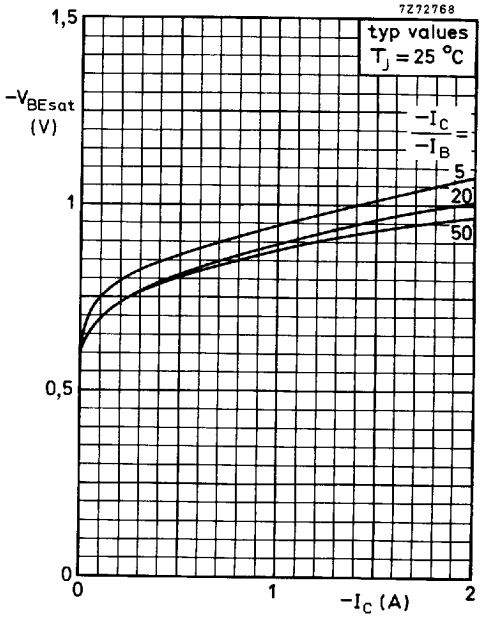


Fig. 8 Base-emitter saturation voltage as a function of collector current.