

SILICON PLANAR EPITAXIAL TRANSISTOR

P-N-P transistor in a plastic microminiature package, 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 $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot} max.	1 W
Junction temperature	T_j max.	150 $^{\circ}\text{C}$
D.C. current gain $-I_C = 500\text{ mA}; -V_{CE} = 1\text{ V}$	h_{FE}	85 to 375
Transition frequency at $f = 100\text{ MHz}$ $-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$	f_T	> 40 MHz

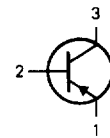
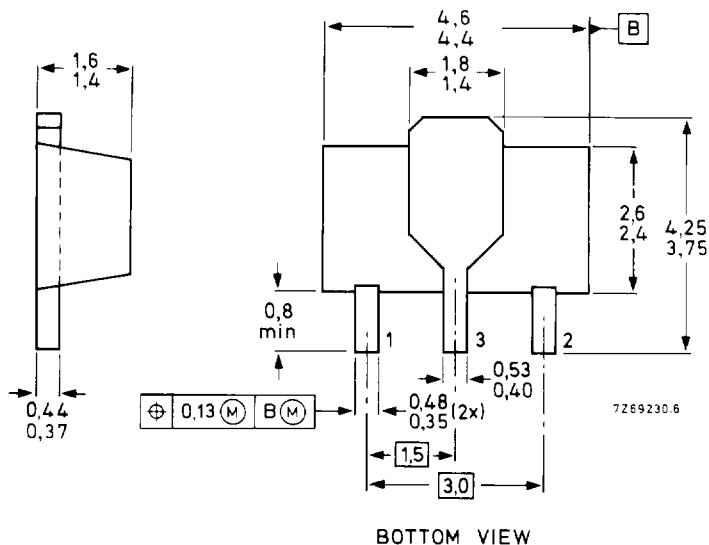
MECHANICAL DATA

Dimensions in mm

Marking code

BC869 = CEC
BC869-10 = CFC

Fig. 1 SOT-89.



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)	$-V_{CFO}$	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 $T_{amb} = 25\text{ }^\circ\text{C}^*$	P_{tot}	max.	1 W
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*	$R_{th\ j-a}$	=	125 K/W
From junction to tab	$R_{th\ j-t}$	=	10 K/W

CHARACTERISTICS

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

Collector cut-off current			
$I_E = 0; -V_{CB} = 25\text{ V}$	$-I_{CBO}$	<	10 μA
$I_E = 0; -V_{CB} = 25\text{ V}; T_j = 150\text{ }^\circ\text{C}$	$-I_{CBO}$	<	1 mA
Emitter cut-off current			
$I_C = 0; -V_{EB} = 5\text{ V}$	$-I_{EBO}$	<	10 μA
Base-emitter voltage			
$-I_C = 5\text{ mA}; -V_{CE} = 10\text{ V}$	$-V_{BE}$	typ.	0,62 V
$-I_C = 1\text{ A}; -V_{CE} = 1\text{ V}$	$-V_{BE}$	<	1 V
Collector-emitter saturation voltage			
$-I_C = 1\text{ A}; -I_B = 100\text{ mA}$	$-V_{CEsat}$	<	0,5 V
D.C. current gain			
$-I_C = 5\text{ mA}; -V_{CE} = 10\text{ V}$	BC869	h_{FE}	> 50
$-I_C = 500\text{ mA}; -V_{CE} = 1\text{ V}$	BC869	h_{FE}	85 to 375
	BC869-10	h_{FE}	\leq 160
	BC869-16	h_{FE}	100 to 250
	BC869-25	h_{FE}	\geq 160
$-I_C = 1\text{ A}; -V_{CE} = 1\text{ V}$	BC869	h_{FE}	> 60
Collector capacitance at $f = 450\text{ kHz}$			
$I_E = I_e = 0; -V_{CB} = 5\text{ V}$		C_c	typ. 45 pF
Transition frequency at $f = 100\text{ MHz}$			
$-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$		f_T	> 40 MHz

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

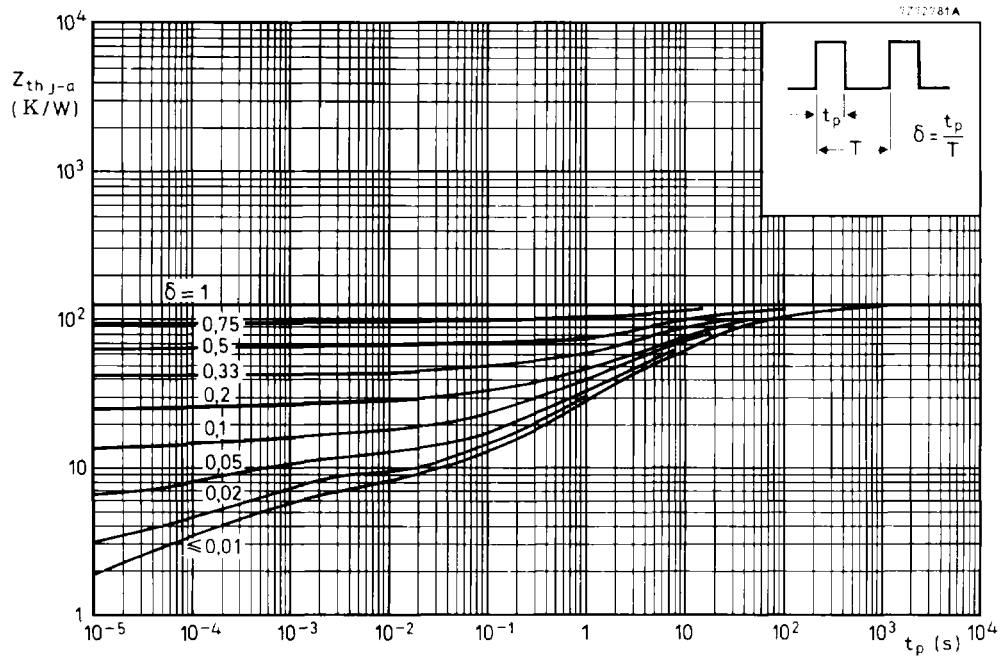


Fig. 2 Pulse power rating chart.