SILICON PLANAR EPITAXIAL TRANSISTOR

N-P-N transistor in a microminiature plastic 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.

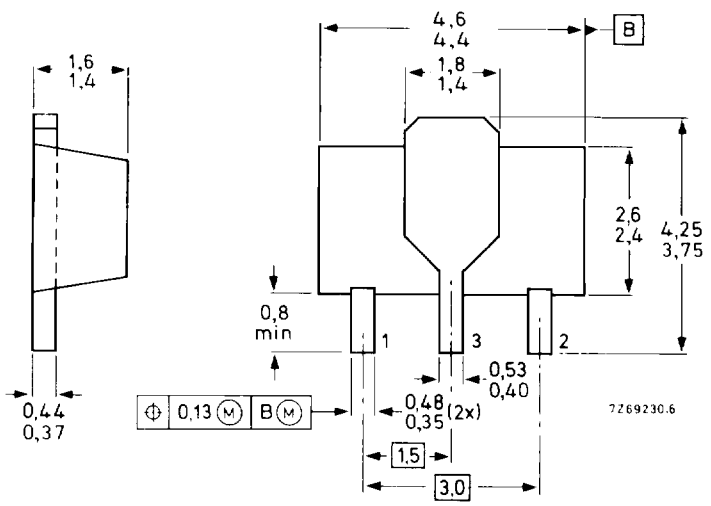
QUICK REFERENCE DATA

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 °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 = 100 MHz I_C = 10 mA; V_{CE} = 5 V	f_T	>	40 MHz

MECHANICAL DATA

Dimensions in mm

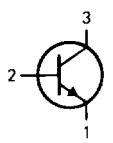
Fig. 1 SOT-89.



BOTTOM VIEW

Marking code

BC868 = CAC
BC868-10 = CBC
BC868-16 = CCC
BC868-25 = CDC



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
DC current gain				
I_C = 5 mA; V_{CE} = 10 V	BC868	h_{FE}	>	50
I_C = 500 mA; V_{CE} = 1 V	BC868	h_{FE}		85 to 375
	BC868-10	h_{FE}	⩽	160
	BC868-16	h_{FE}		100 to 250
	BC868-25	h_{FE}	⩾	160
I_C = 1 A; V_{CE} = 1 V	BC868	h_{FE}	>	60
Collector capacitance at f = 450 kHz				
$I_E = I_e$ = 0; V_{CB} = 5 V		C_c	typ.	27 pF
Transition frequency at f = 100 MHz				
I_C = 10 mA; V_{CE} = 5 V		f_T	>	40 MHz

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

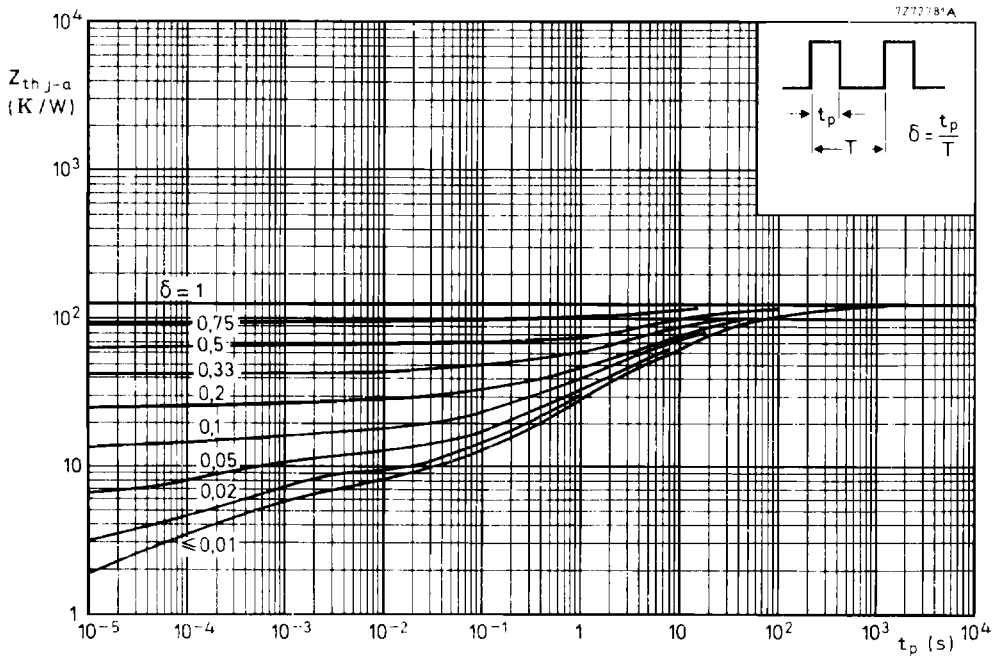


Fig. 2 Pulse power rating chart.