

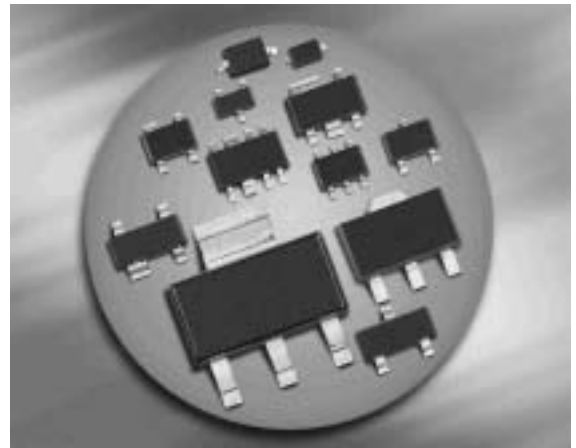


**THE DATASHEET OF  
BC80825WE6327HTSA1**



**PNP Silicon AF Transistor**

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary type:  
BC817.../W, BC818.../W (NPN)
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



Type	Marking	Pin Configuration						Package
		1 = B	2 = E	3 = C	-	-	-	
BC807-16	5As	1 = B	2 = E	3 = C	-	-	-	SOT23
BC807-16W	5As	1 = B	2 = E	3 = C	-	-	-	SOT323
BC807-25	5Bs	1 = B	2 = E	3 = C	-	-	-	SOT23
BC807-25W	5Bs	1 = B	2 = E	3 = C	-	-	-	SOT323
BC807-40	5Cs	1 = B	2 = E	3 = C	-	-	-	SOT23
BC807-40W	5Cs	1 = B	2 = E	3 = C	-	-	-	SOT323
BC808-25	5Fs	1 = B	2 = E	3 = C	-	-	-	SOT23
BC808-25W	5Fs	1 = B	2 = E	3 = C	-	-	-	SOT323
BC808-40	5Gs	1 = B	2 = E	3 = C	-	-	-	SOT23
BC808-40W	5Gs	1 = B	2 = E	3 = C	-	-	-	SOT323

<sup>1</sup>Pb-containing package may be available upon special request

**Maximum Ratings**

Parameter	Symbol	Value	Unit
Collector-emitter voltage BC807... BC808...	$V_{CEO}$	45 25	V
Collector-base voltage BC807... BC808...	$V_{CBO}$	50 30	
Emitter-base voltage	$V_{EBO}$	5	
Collector current	$I_C$	500	mA
Peak collector current	$I_{CM}$	1000	
Base current	$I_B$	100	
Peak base current	$I_{BM}$	200	
Total power dissipation- $T_S \leq 79\text{ °C}$ BC807, BC808 $T_S \leq 130\text{ °C}$ BC807W, BC808W	$P_{tot}$	330 250	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-65 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>1)</sup> BC807, BC808 BC807W, BC808W	$R_{thJS}$	$\leq 215$ $\leq 80$	K/W

<sup>1</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Collector-emitter breakdown voltage $I_C = 10\text{ mA}$ , $I_B = 0$ , BC807... $I_C = 10\text{ mA}$ , $I_B = 0$ , BC808...	$V_{(BR)CEO}$	45 25	- -	- -	V
Collector-base breakdown voltage $I_C = 10\text{ }\mu\text{A}$ , $I_E = 0$ , BC807... $I_C = 10\text{ }\mu\text{A}$ , $I_E = 0$ , BC808...	$V_{(BR)CBO}$	50 30	- -	- -	
Emitter-base breakdown voltage $I_E = 10\text{ }\mu\text{A}$ , $I_C = 0$	$V_{(BR)EBO}$	5	-	-	
Collector-base cutoff current $V_{CB} = 25\text{ V}$ , $I_E = 0$ $V_{CB} = 25\text{ V}$ , $I_E = 0$ , $T_A = 150^\circ\text{C}$	$I_{CBO}$	- -	- -	0.1 50	$\mu\text{A}$
Emitter-base cutoff current $V_{EB} = 4\text{ V}$ , $I_C = 0$	$I_{EBO}$	-	-	100	nA
DC current gain <sup>1)</sup> $I_C = 100\text{ mA}$ , $V_{CE} = 1\text{ V}$ , $h_{FE}$ -grp. 16 $I_C = 100\text{ mA}$ , $V_{CE} = 1\text{ V}$ , $h_{FE}$ -grp. 25 $I_C = 100\text{ mA}$ , $V_{CE} = 1\text{ V}$ , $h_{FE}$ grp. 40 $I_C = 500\text{ mA}$ , $V_{CE} = 1\text{ V}$	$h_{FE}$	100 160 250 40	160 250 350 -	250 400 630 -	-
Collector-emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{CEsat}$	-	-	0.7	V
Base emitter saturation voltage <sup>1)</sup> $I_C = 500\text{ mA}$ , $I_B = 50\text{ mA}$	$V_{BEsat}$	-	-	1.2	

<sup>1)</sup>Pulse test:  $t < 300\mu\text{s}$ ;  $D < 2\%$

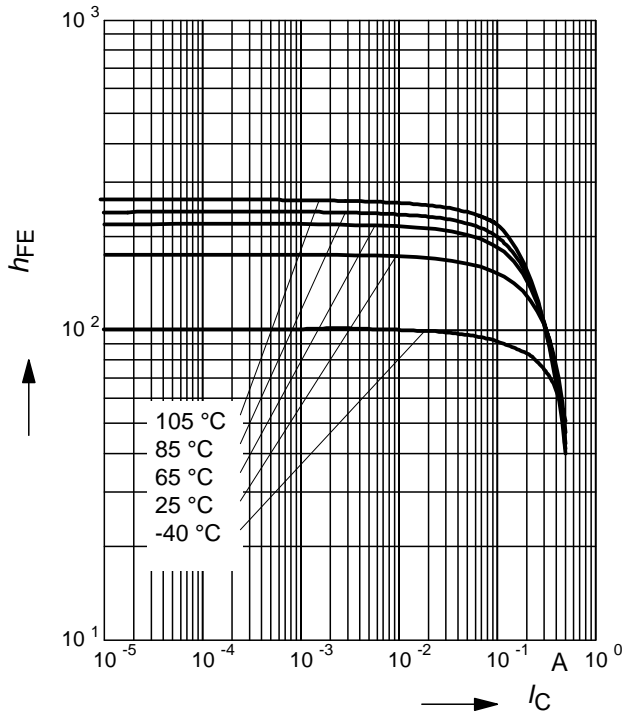
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>AC Characteristics</b>					
Transition frequency $I_C = 50\text{ mA}$ , $V_{CE} = 5\text{ V}$ , $f = 100\text{ MHz}$	$f_T$	-	200	-	MHz
Collector-base capacitance $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{cb}$	-	8	-	pF
Emitter-base capacitance $V_{EB} = 0.5\text{ V}$ , $f = 1\text{ MHz}$	$C_{eb}$	-	60	-	

**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 1\text{ V}$

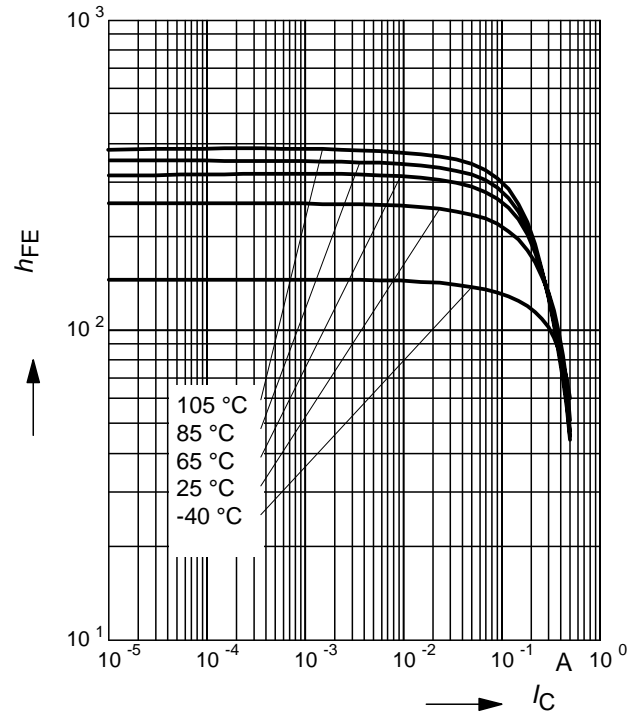
$h_{FE}$ -grp. 16



**DC current gain  $h_{FE} = f(I_C)$**

$V_{CE} = 1\text{ V}$

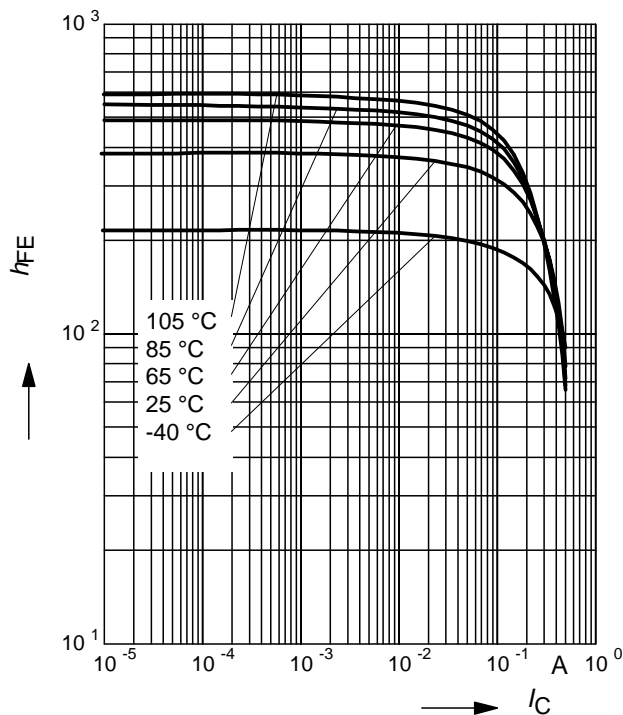
$h_{FE}$ -grp. 25



**DC current gain  $h_{FE} = f(I_C)$**

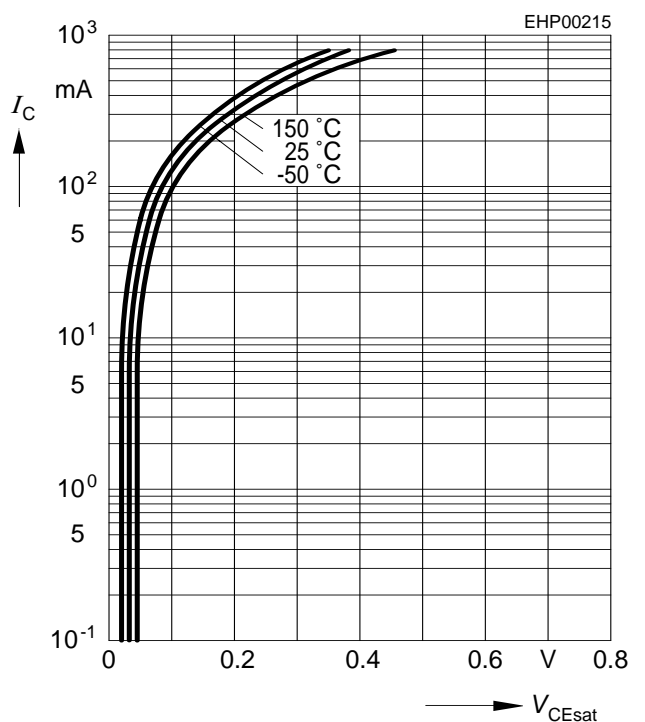
$V_{CE} = 1\text{ V}$

$h_{FE}$ -grp. 40



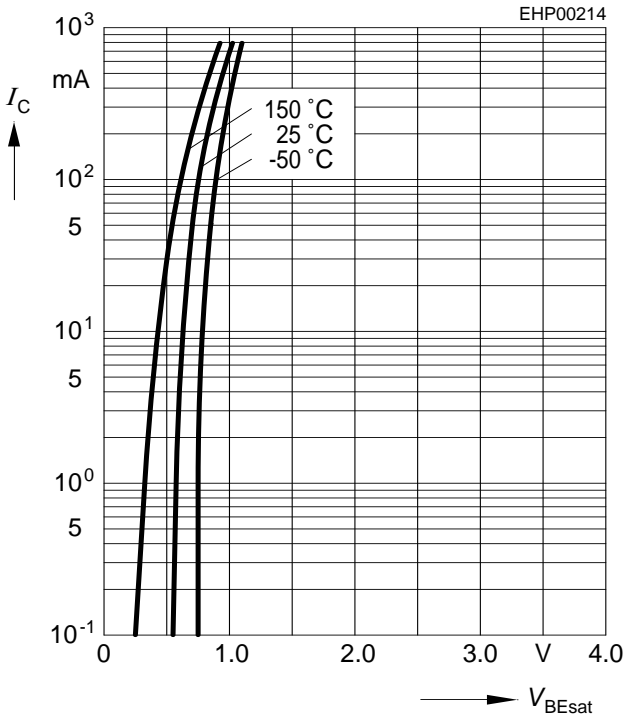
**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat}), h_{FE} = 10$



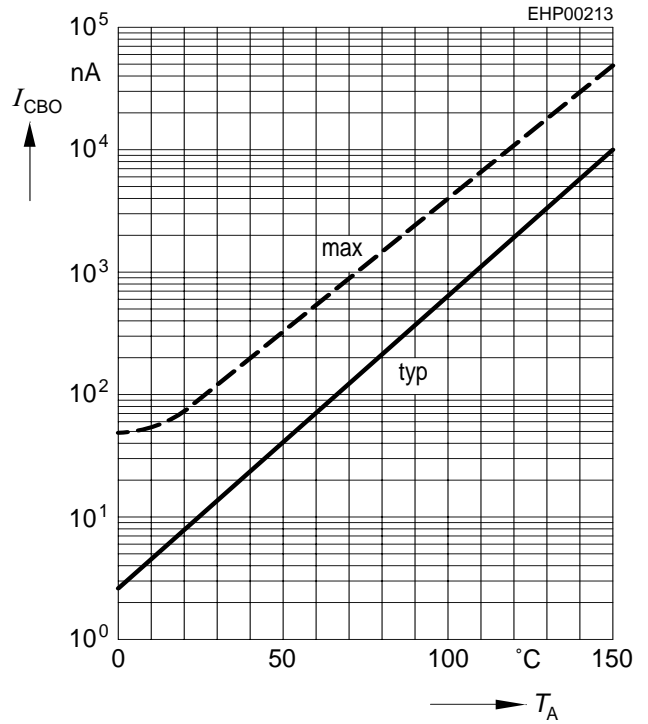
**Base-emitter saturation voltage**

$I_C = f(V_{BEsat}), h_{FE} = 10$



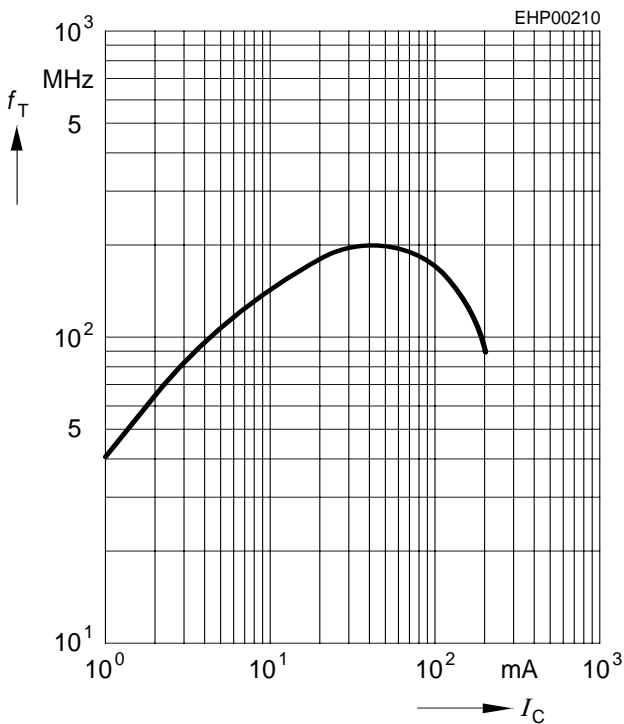
**Collector cutoff current  $I_{CBO} = f(T_A)$**

$V_{CBO} = 25\text{ V}$



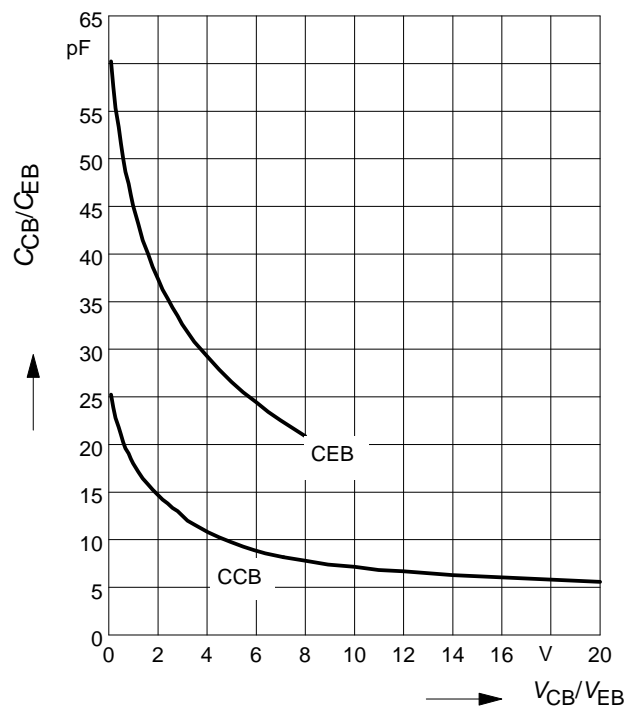
**Transition frequency  $f_T = f(I_C)$**

$V_{CE} = \text{parameter in V}, f = 2\text{ GHz}$



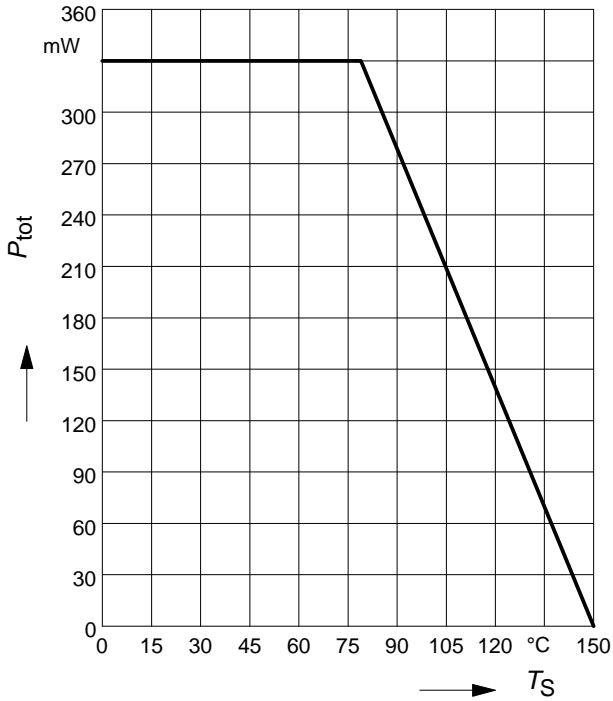
**Collector-base capacitance  $C_{cb} = f(V_{CB})$**

**Emitter-base capacitance  $C_{eb} = f(V_{EB})$**



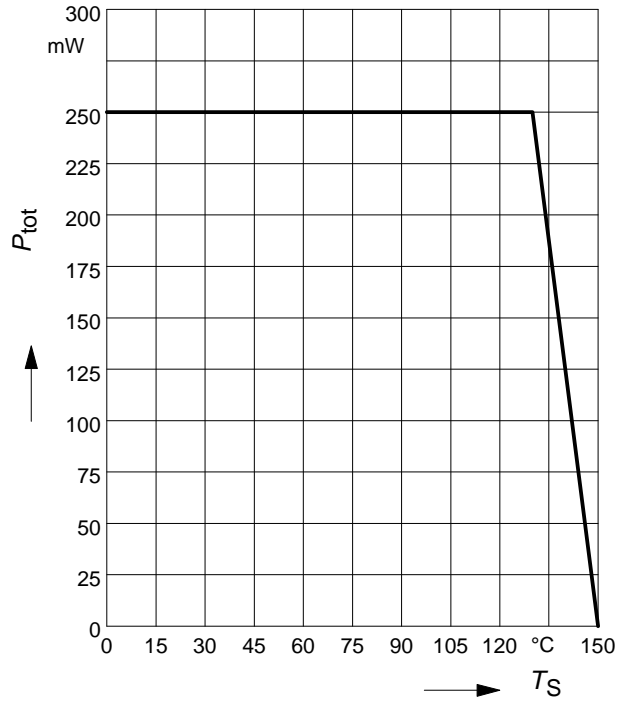
**Total power dissipation  $P_{tot} = f(T_S)$**

BC807, BC808



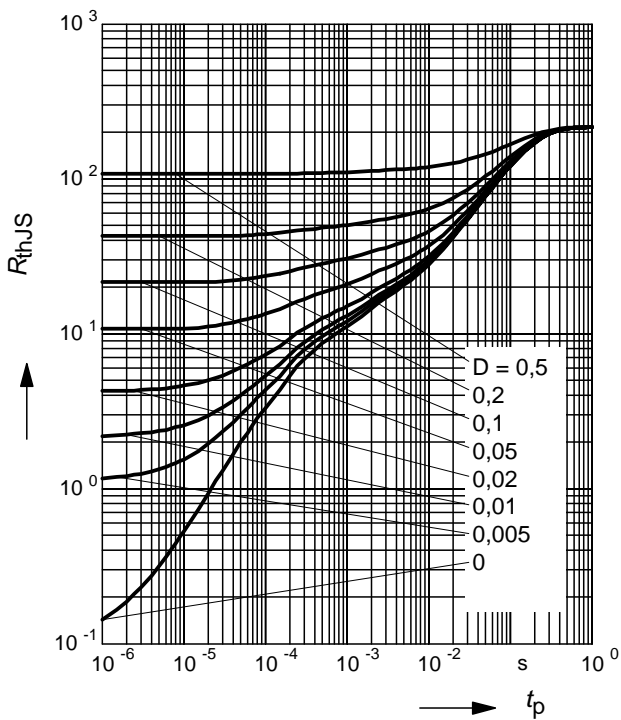
**Total power dissipation  $P_{tot} = f(T_S)$**

BC807W, BC808W



**Permissible Pulse Load  $R_{thJS} = f(t_p)$**

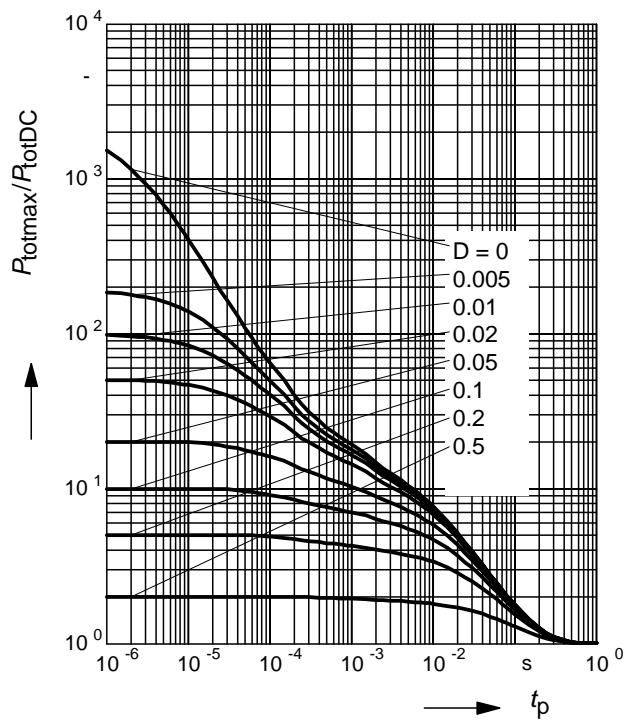
BC807, BC808



**Permissible Pulse Load**

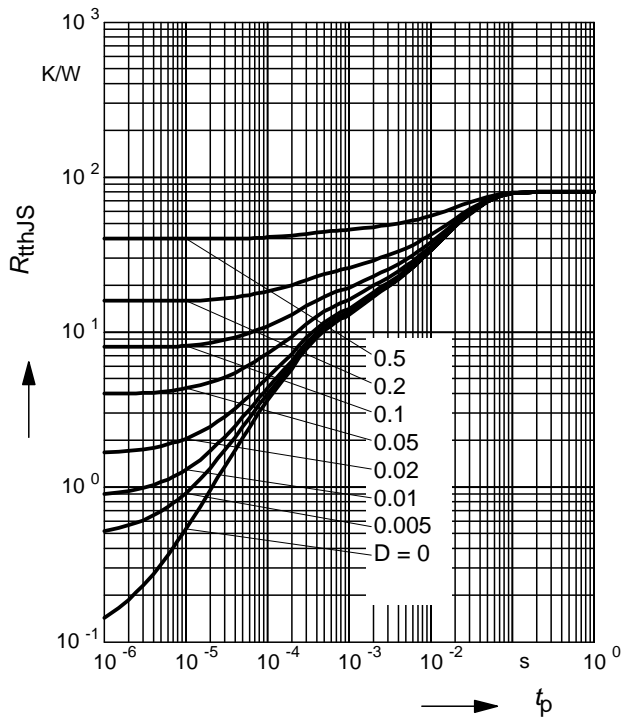
$P_{totmax}/P_{totDC} = f(t_p)$

BC807, BC808



**Permissible Puls Load  $R_{thJS} = f(t_p)$**

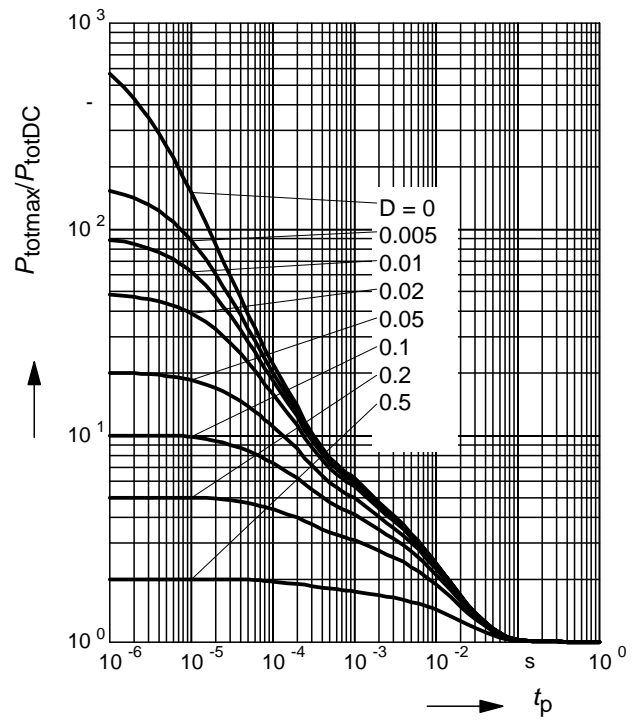
BC807W, BC808W



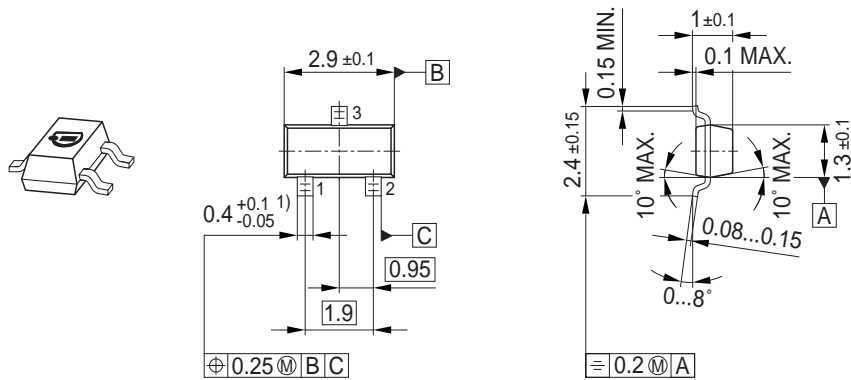
**Permissible Pulse Load**

$P_{totmax}/P_{totDC} = f(t_p)$

BC807W, BC808W

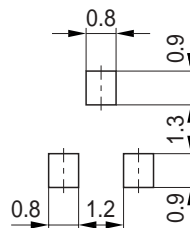


Package Outline

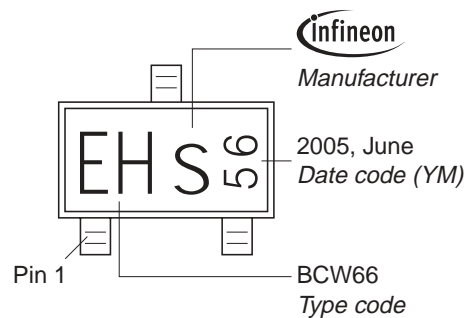


1) Lead width can be 0.6 max. in dambar area

Foot Print

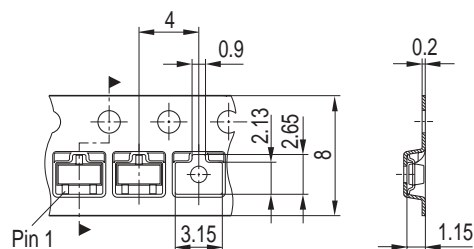


Marking Layout (Example)

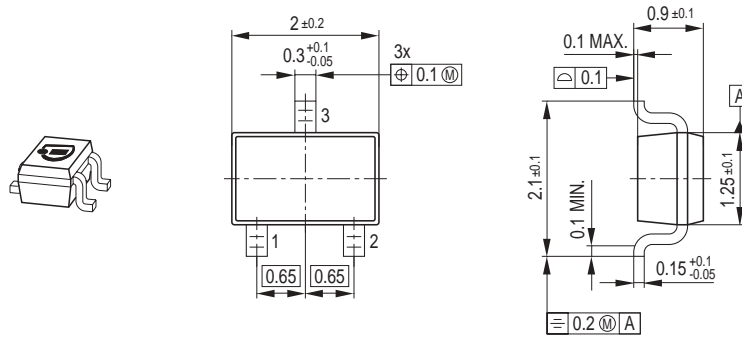


Standard Packing

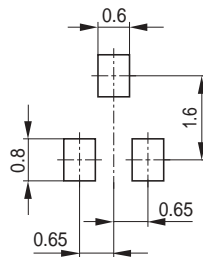
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



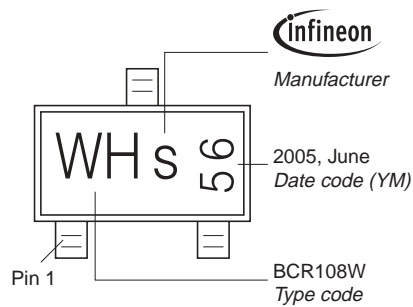
Package Outline



Foot Print

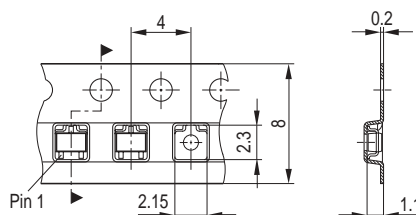


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

© Infineon Technologies AG 2007.

All Rights Reserved.

### **Attention please!**

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenhheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

### **Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

### **Warnings**



Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system.

Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View BC80825WE6327HTSA1 on WIN SOURCE](#)
-  [Infineon Technologies Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management