

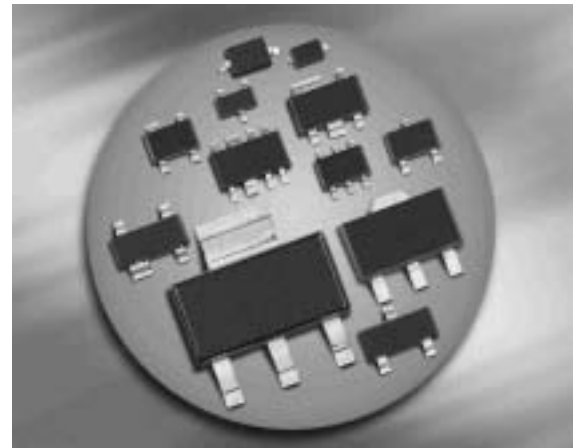


**THE DATASHEET OF
BC 807-40 E6433**



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) package¹⁾
- 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

¹Pb-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 ¹⁾ BC807, BC808 BC807W, BC808W	R_{thJS}	≤ 215 ≤ 80	K/W

¹For 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.	
DC Characteristics					
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 $V_{CB} = 25\text{ V}$, $I_E = 0$ $V_{CB} = 25\text{ V}$, $I_E = 0$, $T_A = 150\text{ }^\circ\text{C}$	I_{CBO}	- -	- -	0.1 50	μA
Emitter-base cutoff current $V_{EB} = 4\text{ V}$, $I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain ¹⁾ $I_C = 100\text{ mA}$, $V_{CE} = 1\text{ V}$, 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 ¹⁾ $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	V_{CEsat}	-	-	0.7	V
Base emitter saturation voltage ¹⁾ $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	V_{BEsat}	-	-	1.2	

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

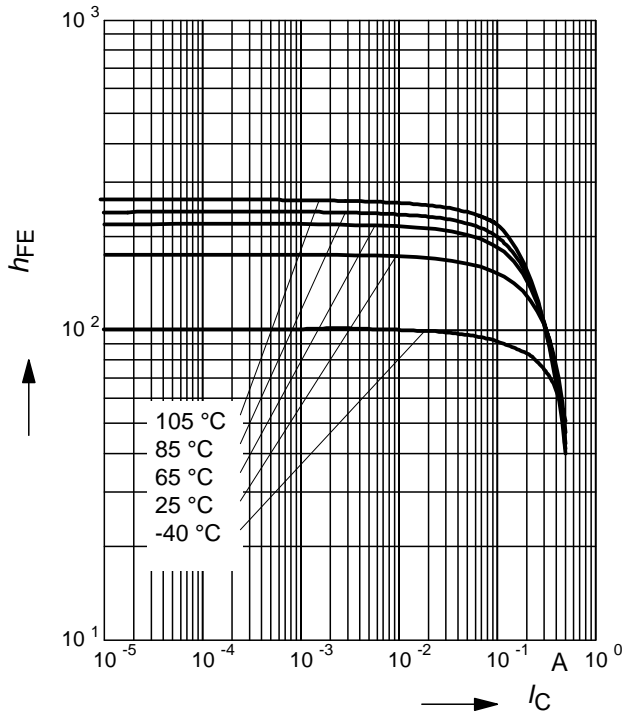
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
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 $h_{FE} = f(I_C)$

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

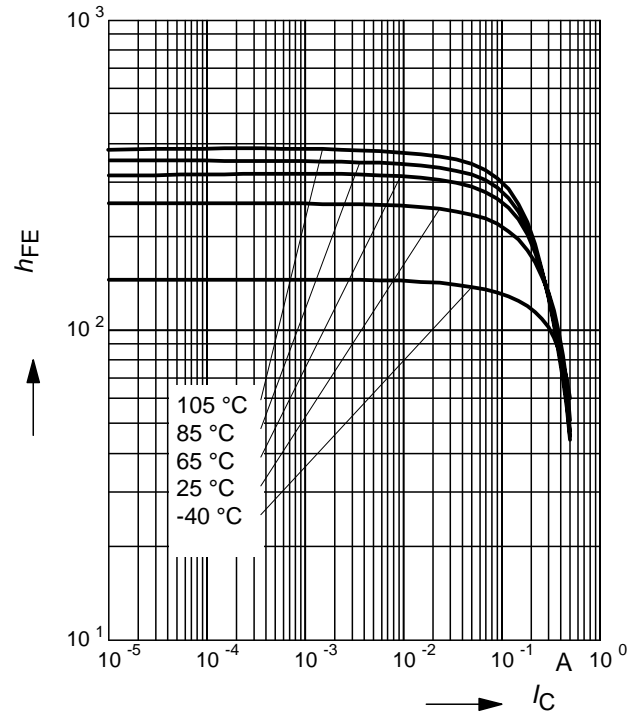
h_{FE} -grp. 16



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

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

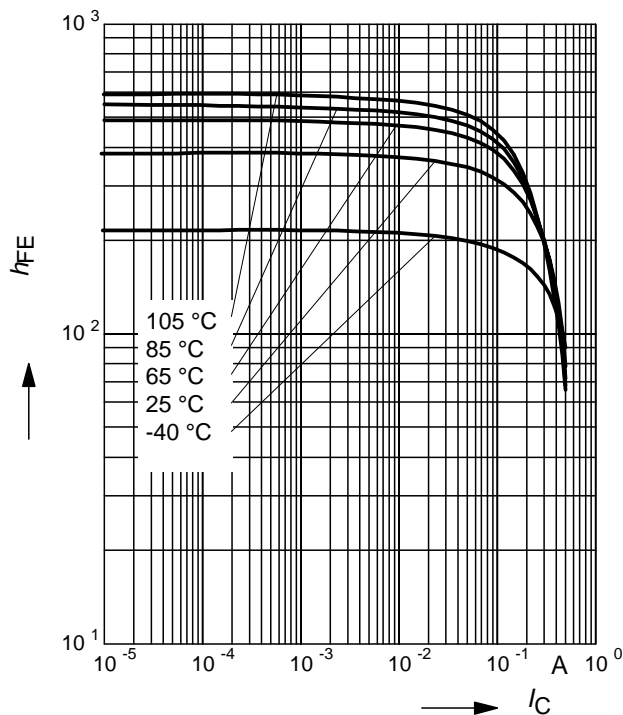
h_{FE} -grp. 25



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

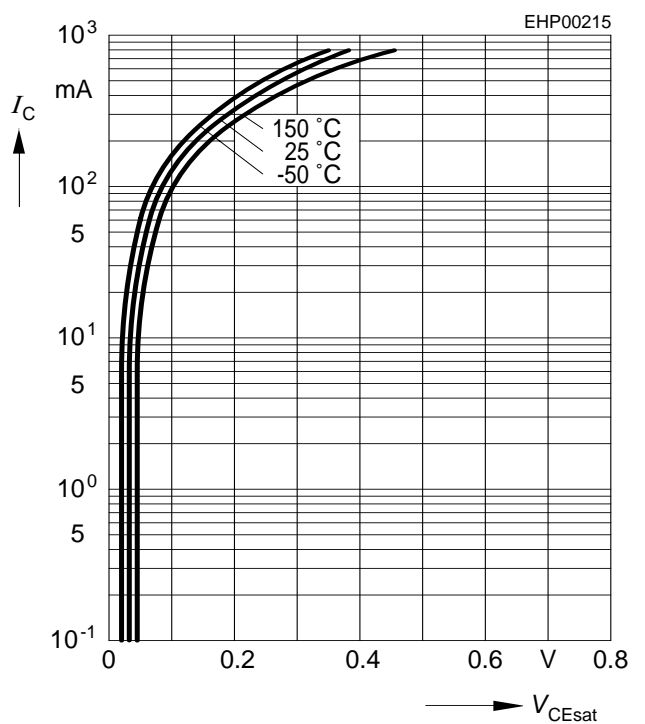
$V_{CE} = 1\text{ V}$

h_{FE} -grp. 40



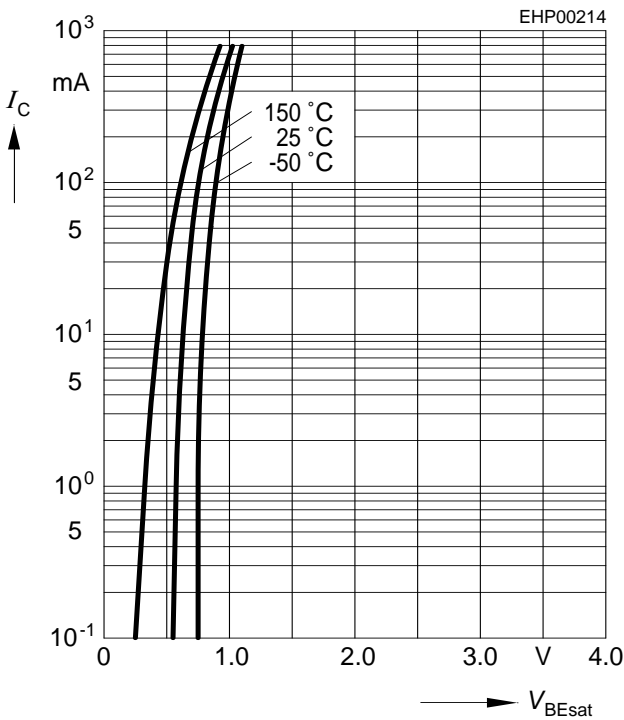
Collector-emitter saturation voltage

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



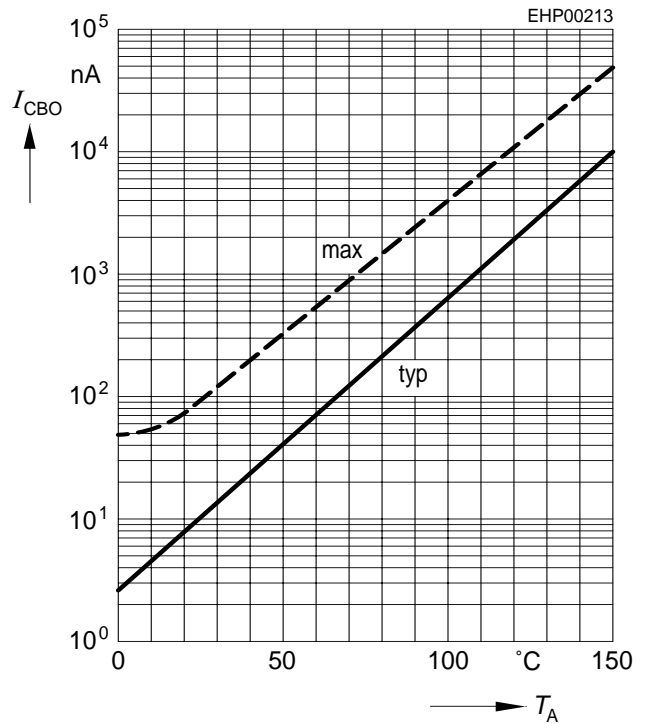
Base-emitter saturation voltage

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



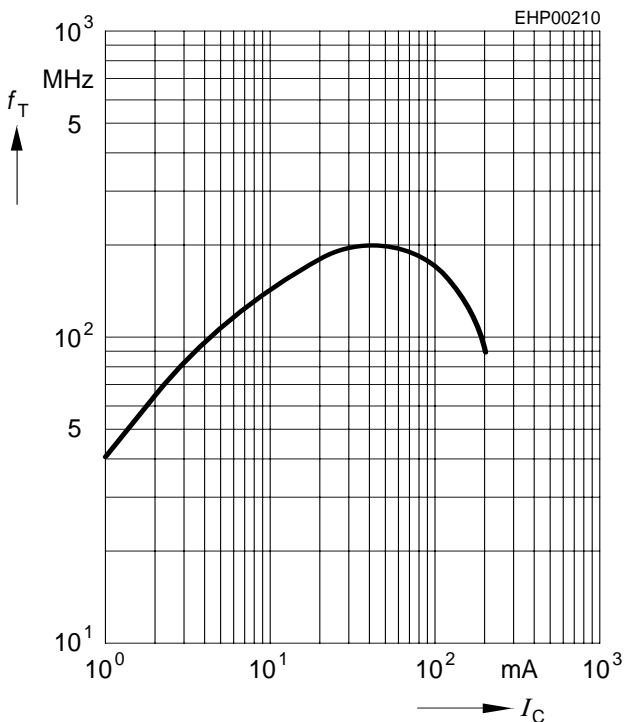
Collector cutoff current $I_{CBO} = f(T_A)$

$V_{CBO} = 25 V$



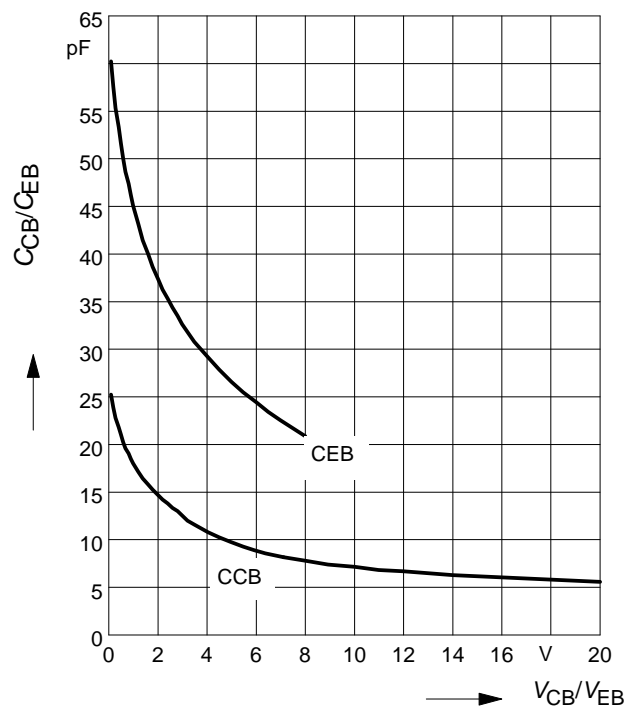
Transition frequency $f_T = f(I_C)$

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



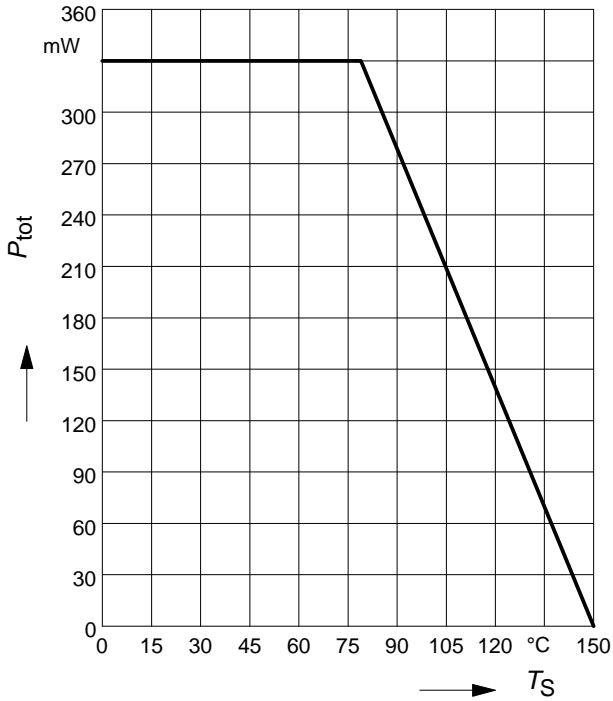
Collector-base capacitance $C_{cb} = f(V_{CB})$

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



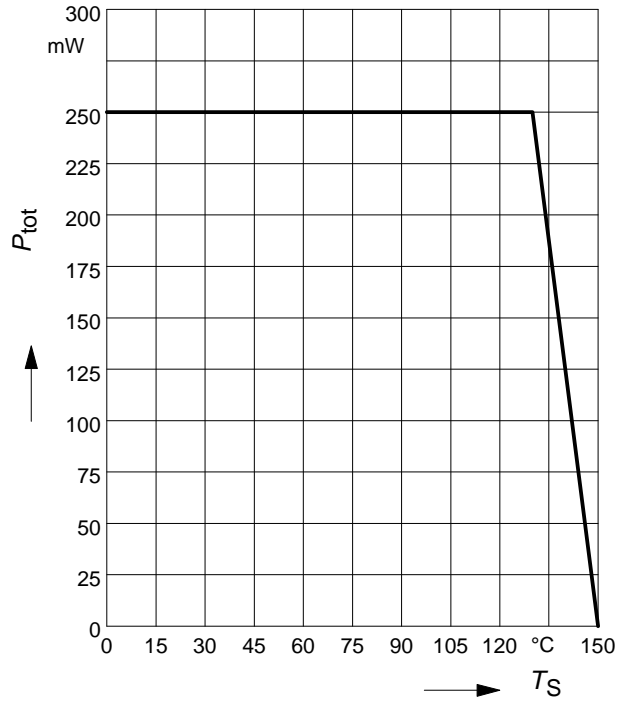
Total power dissipation $P_{tot} = f(T_S)$

BC807, BC808



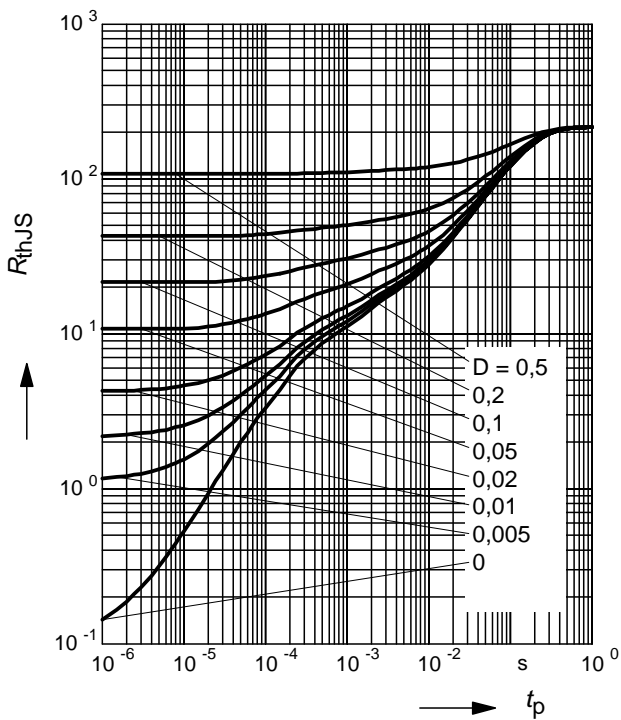
Total power dissipation $P_{tot} = f(T_S)$

BC807W, BC808W



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

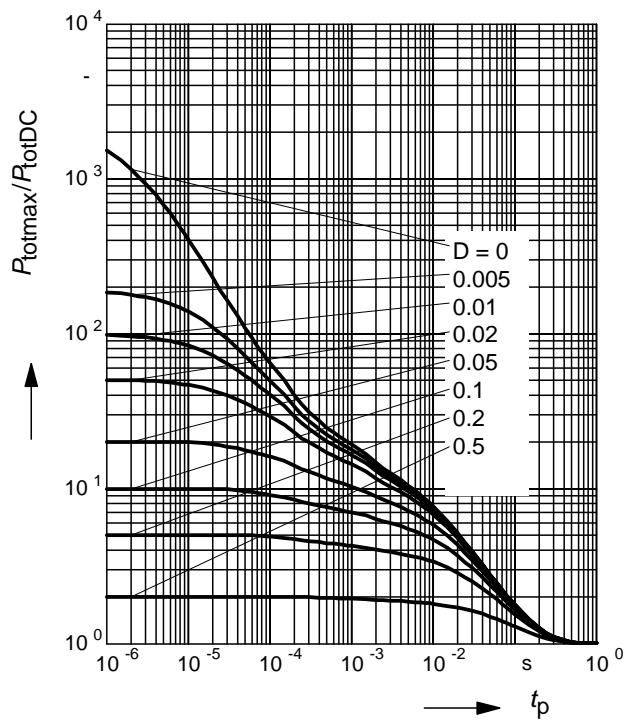
BC807, BC808



Permissible Pulse Load

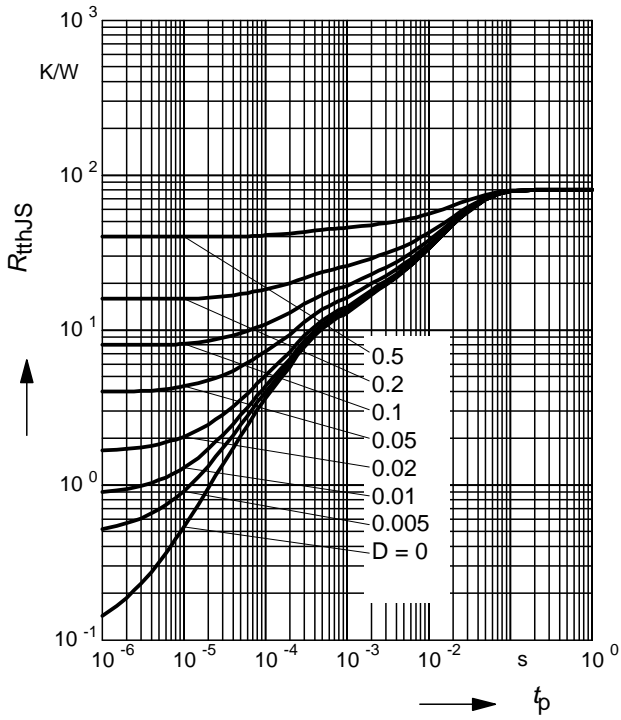
$P_{totmax}/P_{totDC} = f(t_p)$

BC807, BC808



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

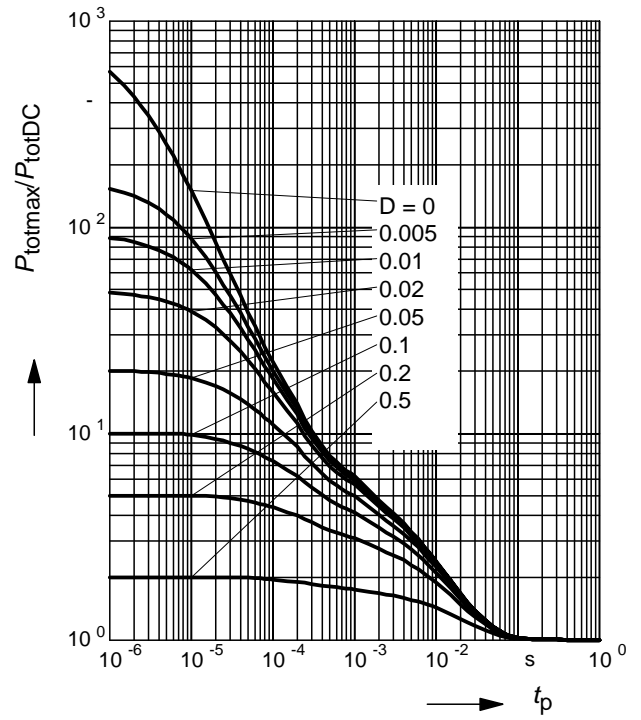
BC807W, BC808W



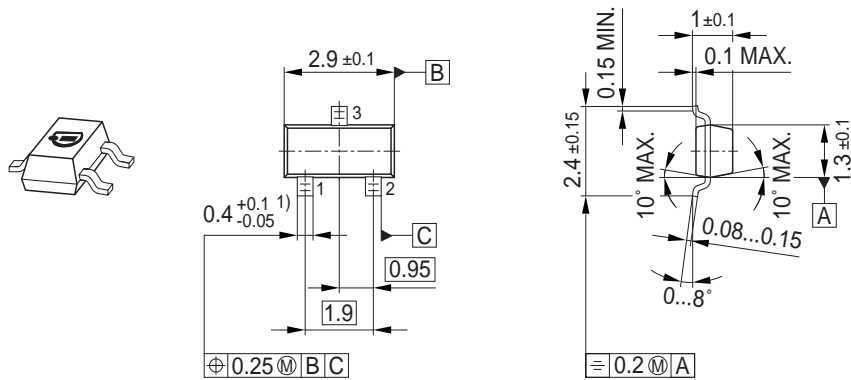
Permissible Pulse Load

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

BC807W, BC808W

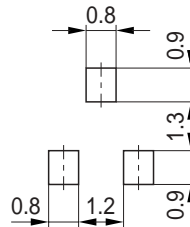


Package Outline

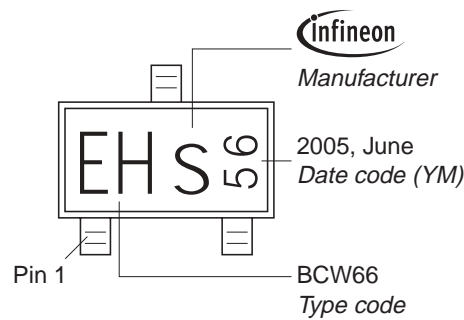


1) Lead width can be 0.6 max. in dambar area

Foot Print

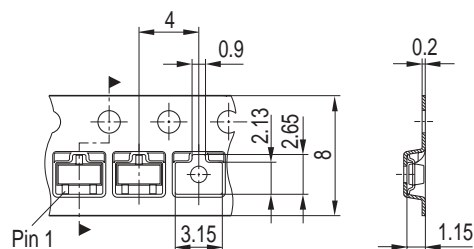


Marking Layout (Example)

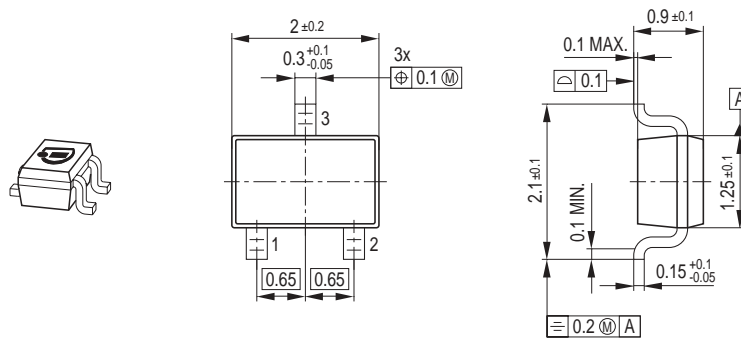


Standard Packing

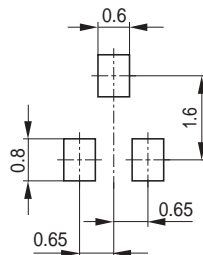
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



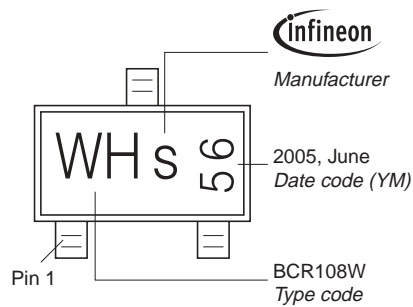
Package Outline



Foot Print

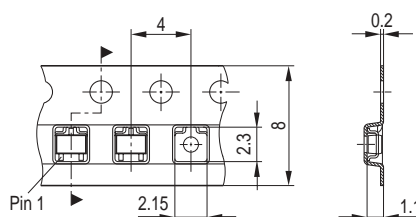


Marking Layout (Example)



Standard Packing

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



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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