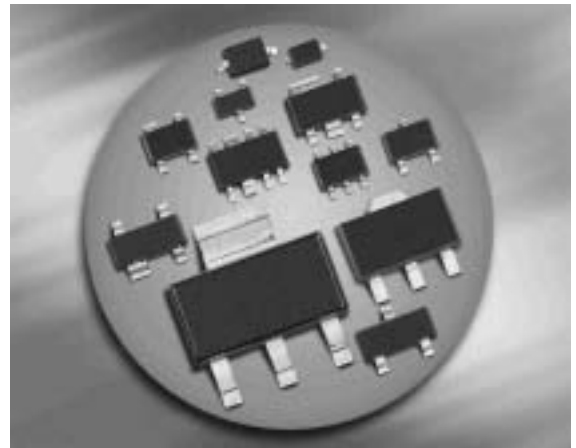




THE DATASHEET OF BC 807-16 E6327

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
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	
Storage temperature	T_{stg}	-65 ... 150	°C

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BC807, BC808 BC807W, BC808W	R_{thJS}	≤ 215 ≤ 80	K/W

¹⁾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.	
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	
Emitter-base cutoff current $V_{EB} = 4\text{ V}$, $I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain ¹⁾ $I_C = 100\text{ mA}$, $V_{CE} = 1\text{ V}$, $h_{FE}\text{-grp. 16}$ $I_C = 100\text{ mA}$, $V_{CE} = 1\text{ V}$, $h_{FE}\text{-grp. 25}$ $I_C = 100\text{ mA}$, $V_{CE} = 1\text{ V}$, $h_{FE}\text{ grp. 40}$ $I_C = 500\text{ mA}$, $V_{CE} = 1\text{ V}$	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: $t < 300\mu\text{s}$; $D < 2\%$

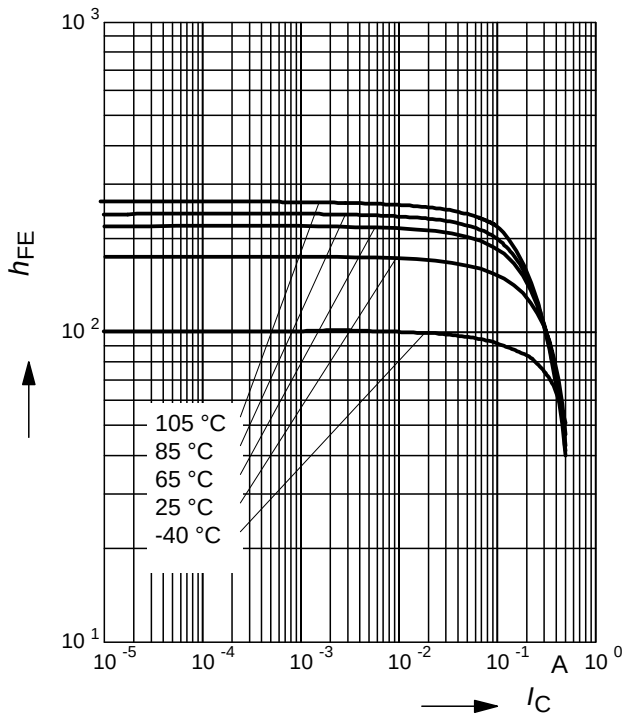
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

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 $h_{FE} = f(I_C)$

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

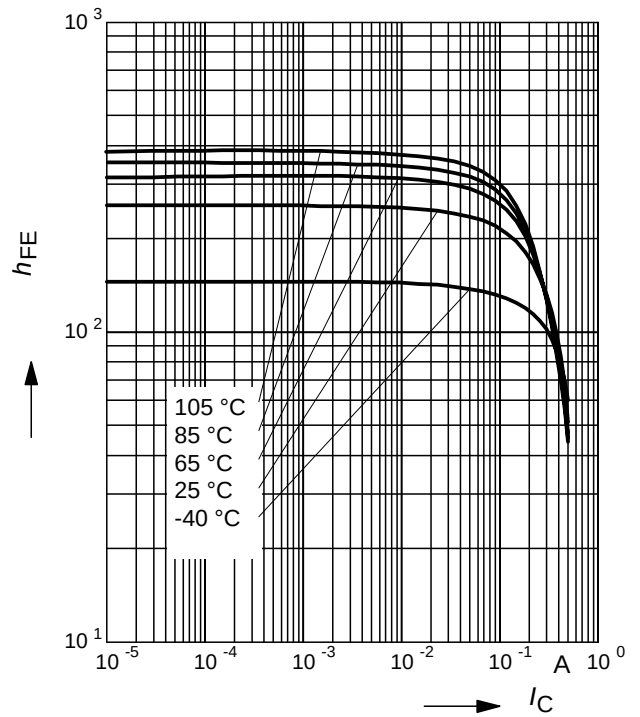
$h_{FE}\text{-grp. 16}$



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

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

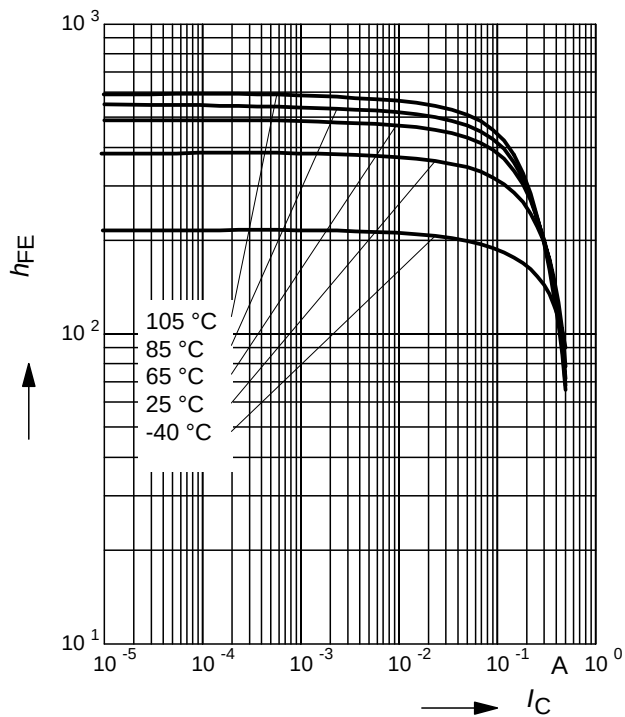
$h_{FE}\text{-grp. 25}$



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

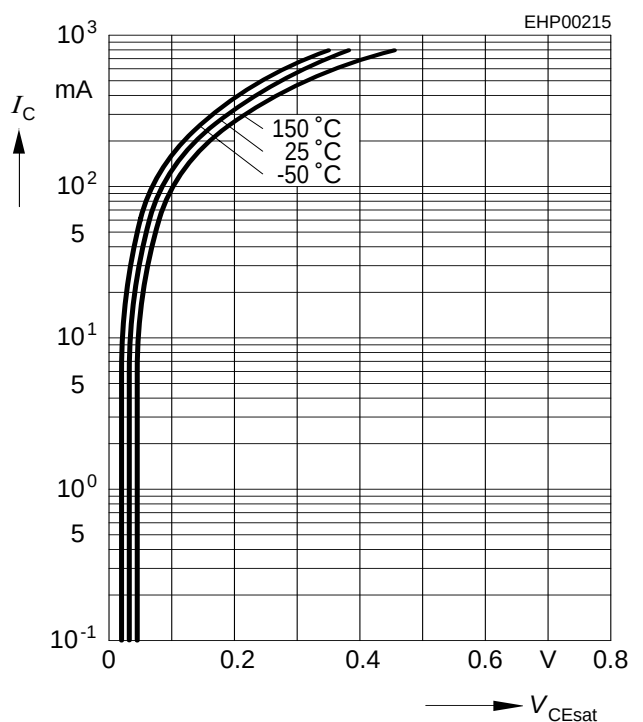
$V_{CE} = 1 \text{ V}$

$h_{FE}\text{-grp. 40}$



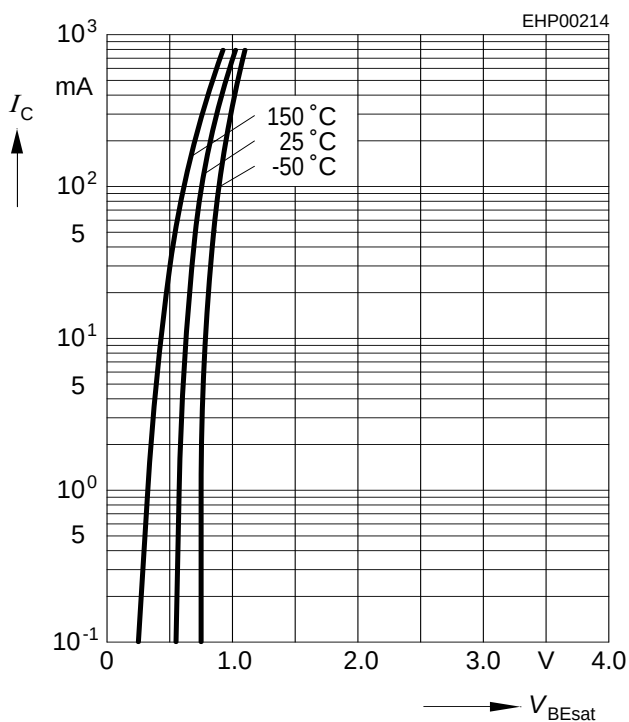
Collector-emitter saturation voltage

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



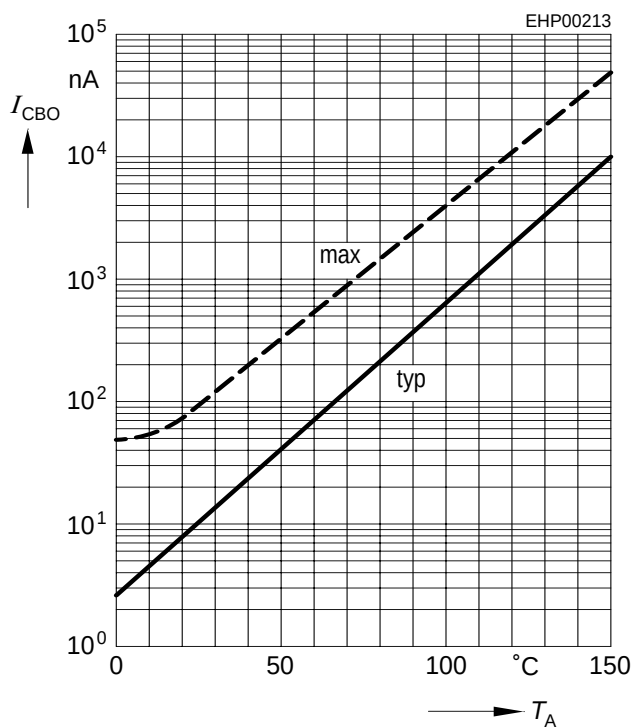
Base-emitter saturation voltage

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



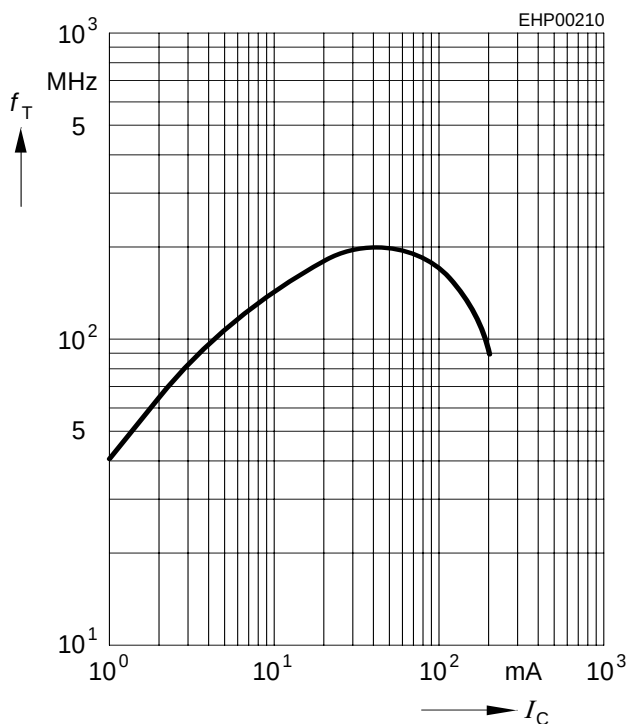
Collector cutoff current $I_{CBO} = f(T_A)$

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



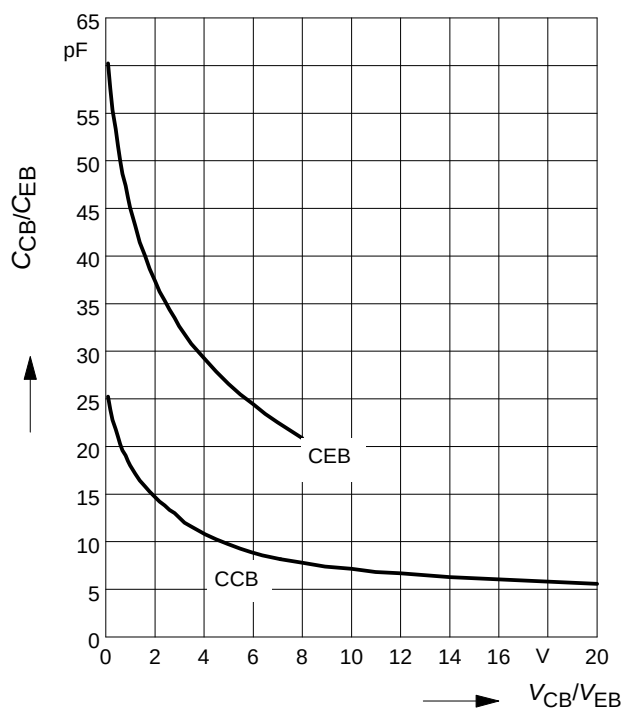
Transition frequency $f_T = f(I_C)$

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



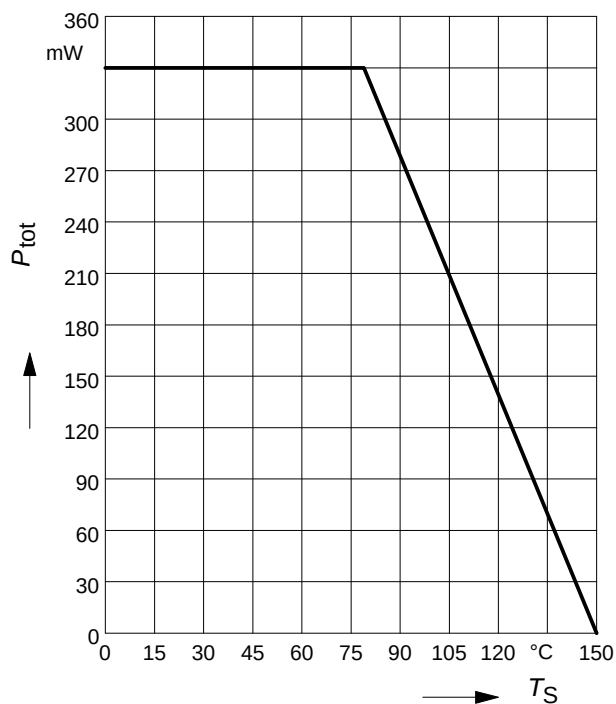
Collector-base capacitance $C_{cb} = f(V_{CB})$

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



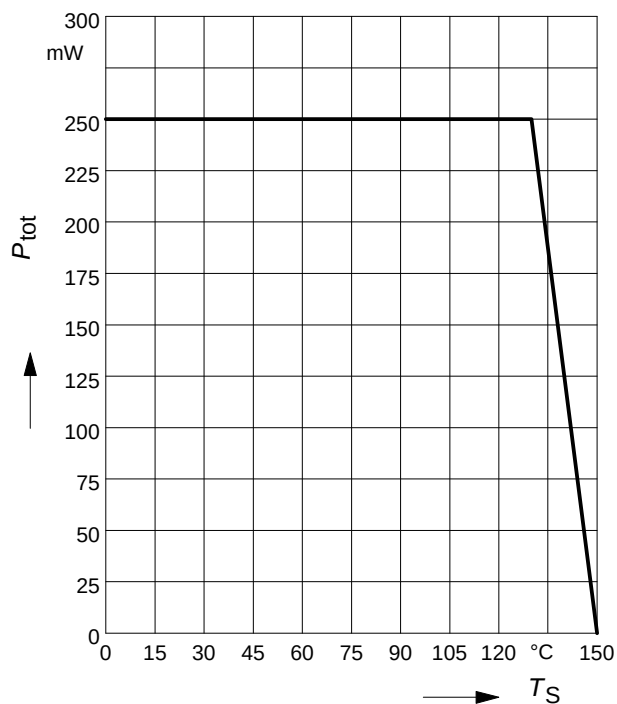
Total power dissipation $P_{\text{tot}} = f(T_S)$

BC807, BC808



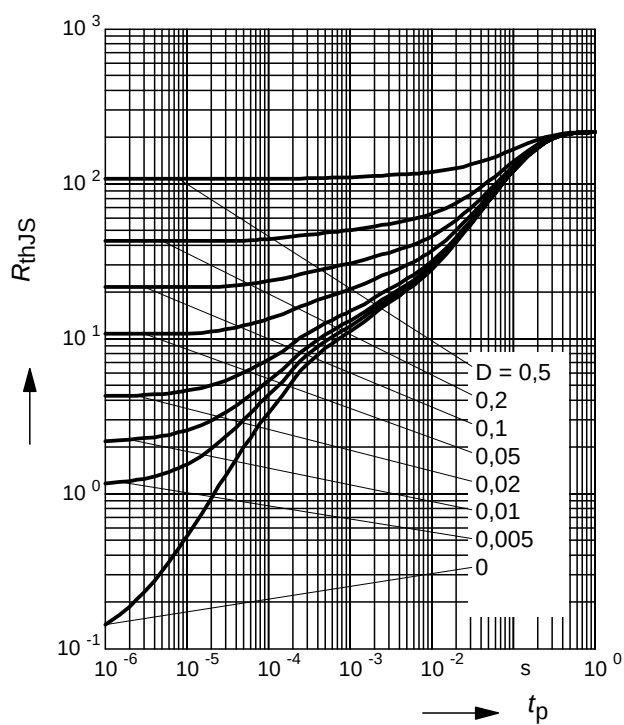
Total power dissipation $P_{\text{tot}} = f(T_S)$

BC807W, BC808W



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

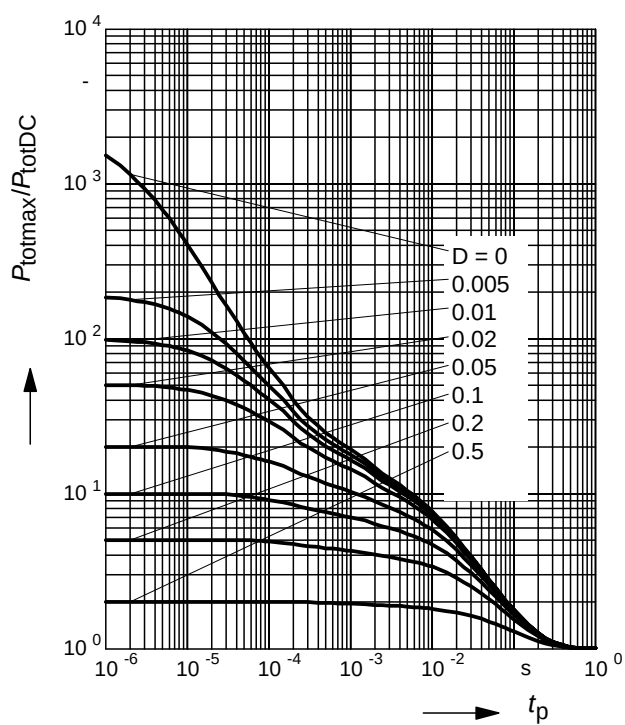
BC807, BC808



Permissible Pulse Load

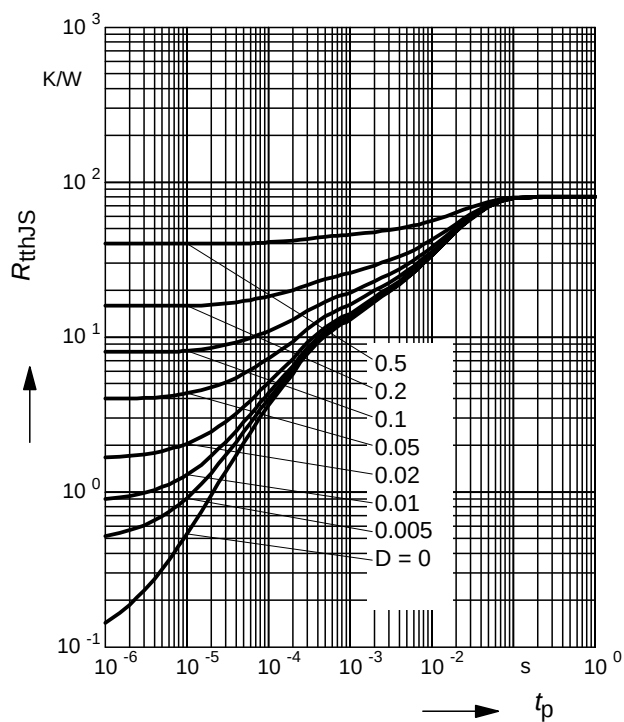
$$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$$

BC807, BC808



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

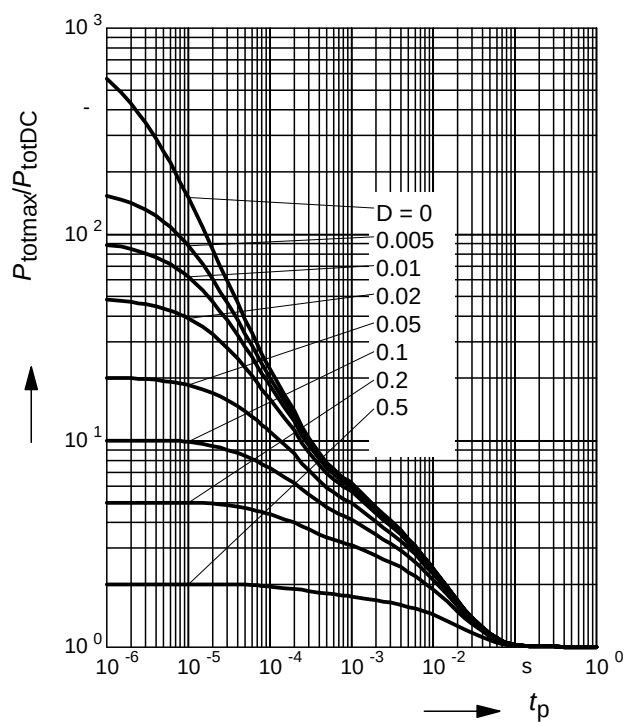
BC807W, BC808W

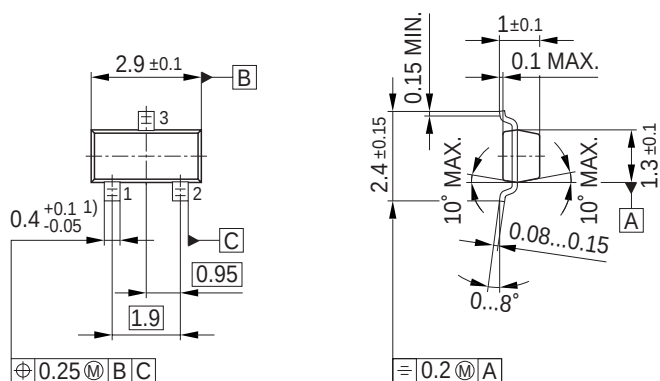


Permissible Pulse Load

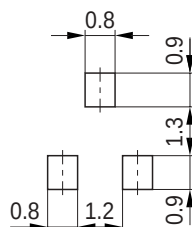
$$P_{totmax}/P_{totDC} = f(t_p)$$

BC807W, BC808W



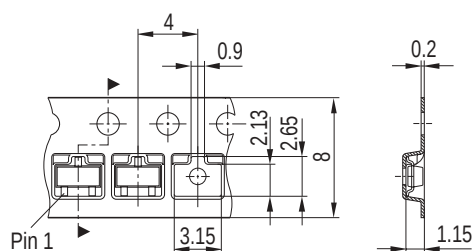


Foot Print

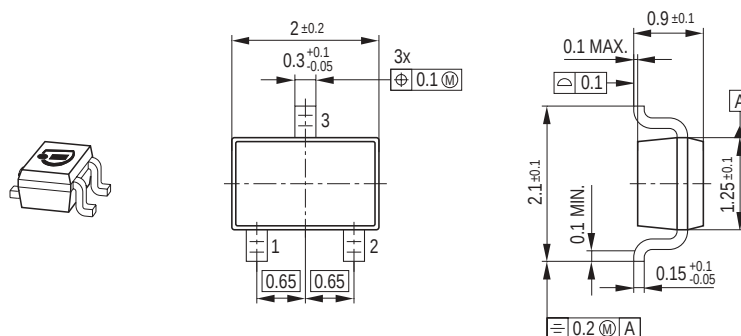


The diagram shows a top-down view of a BCW66 LED package. It is a rectangular component with four pins. The top pin is labeled 'Pin 1'. The package has a central rectangular area containing the text 'EHS' and a date code '05 05'. To the right of the package, the Infineon logo is shown with the text 'Manufacturer'. Below the logo, the text '2005, June' is shown with the text 'Date code (YM)'. At the bottom, the text 'BCW66' is shown with the text 'Type code'.

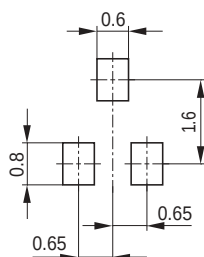
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



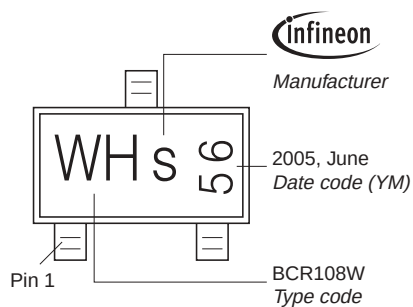
Package Outline



Foot Print

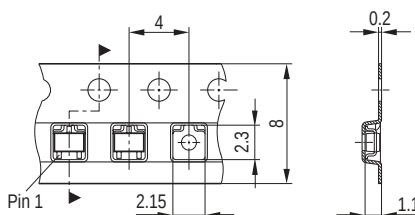


Marking Layout (Example)



Standard Packing

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



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