

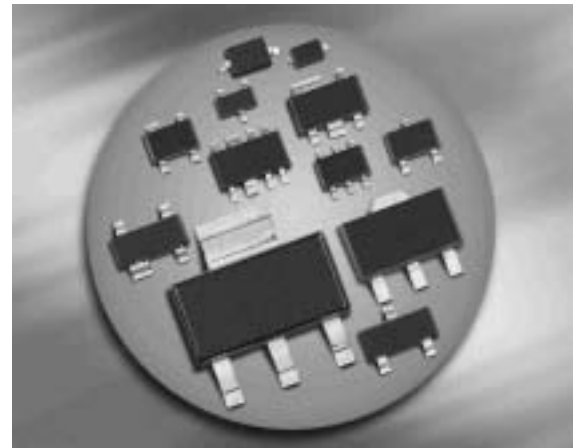


**THE DATASHEET OF  
BC807-40W E6327**



**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) 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 $V_{CB} = 25\text{ V}$ , $I_E = 0$ $V_{CB} = 25\text{ V}$ , $I_E = 0$ , $T_A = 150\text{ }^\circ\text{C}$	$I_{CBO}$	- -	- -	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:  $t < 300\mu\text{s}$ ;  $D < 2\%$

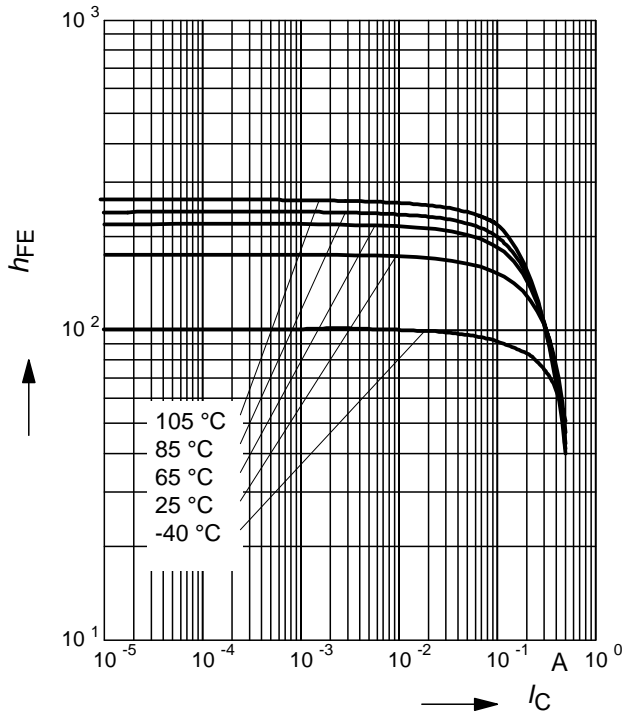
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

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  $h_{FE} = f(I_C)$**

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

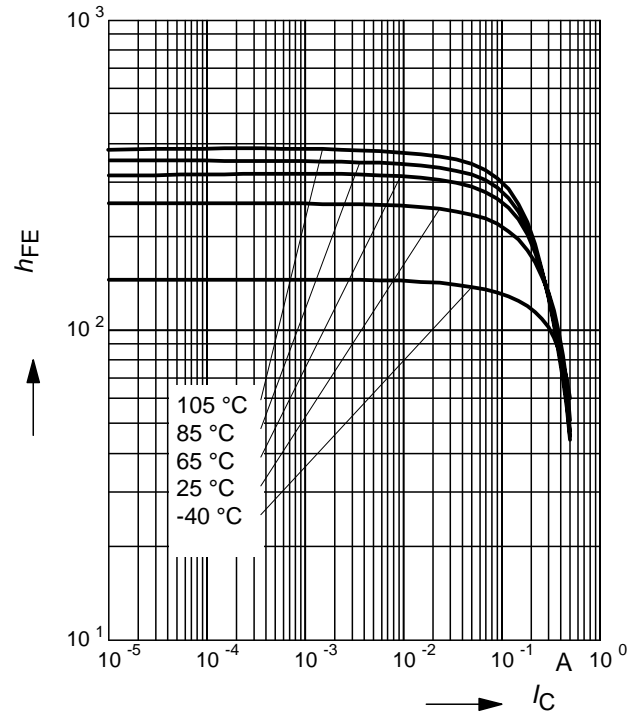
$h_{FE}$ -grp. 16



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

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

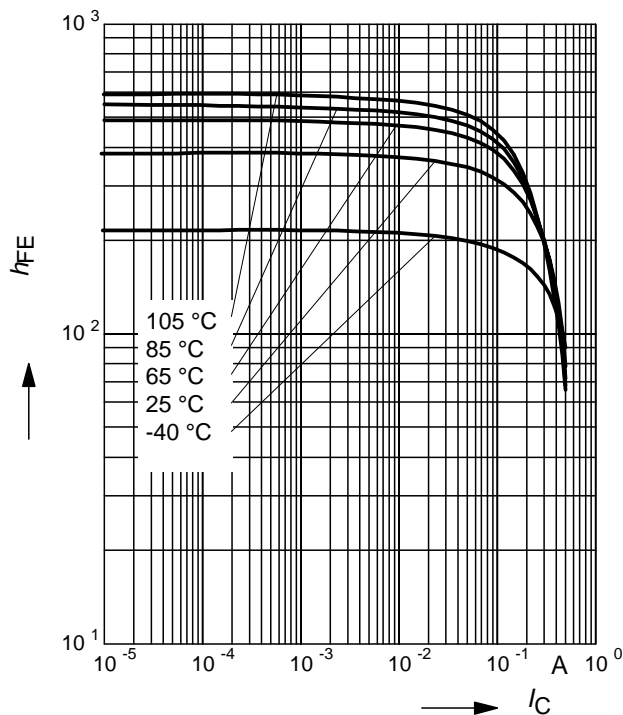
$h_{FE}$ -grp. 25



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

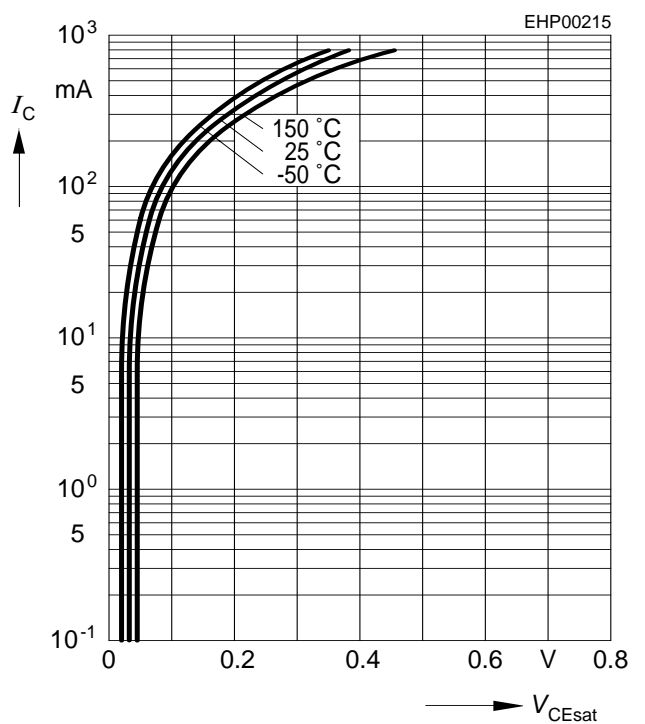
$V_{CE} = 1\text{ V}$

$h_{FE}$ -grp. 40



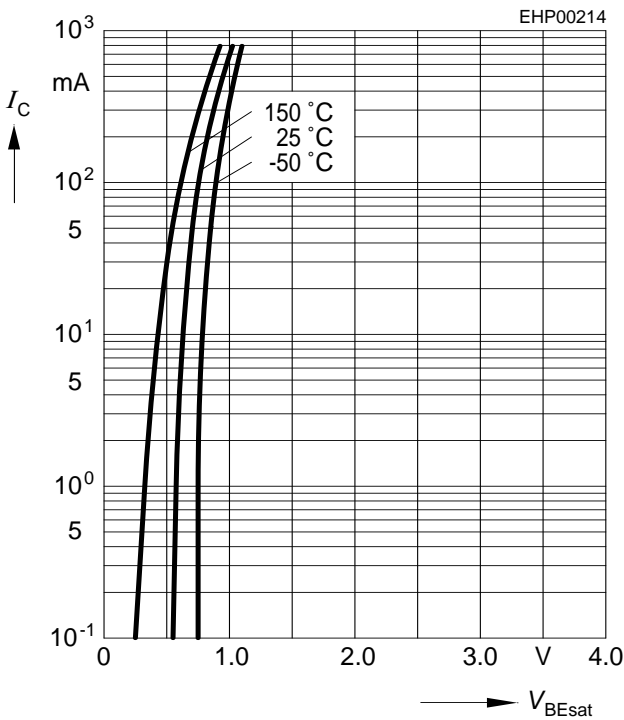
**Collector-emitter saturation voltage**

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



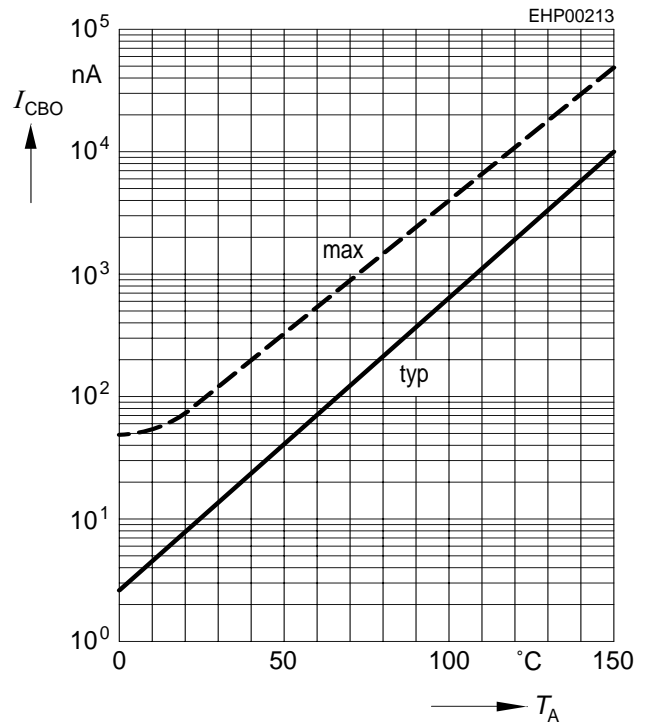
**Base-emitter saturation voltage**

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



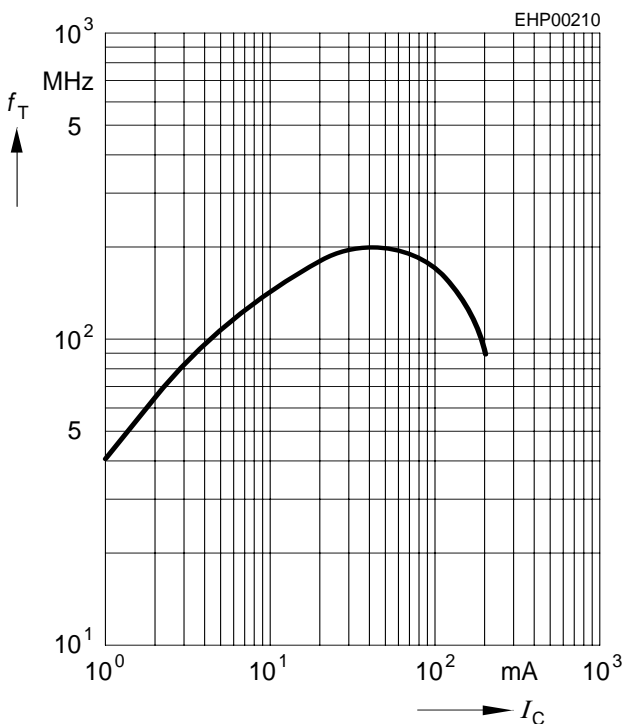
**Collector cutoff current  $I_{CBO} = f(T_A)$**

$V_{CBO} = 25 V$



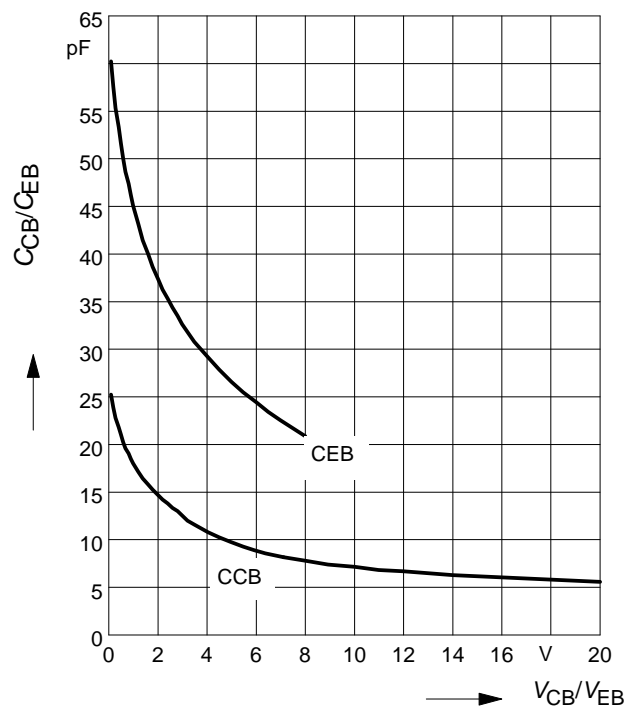
**Transition frequency  $f_T = f(I_C)$**

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



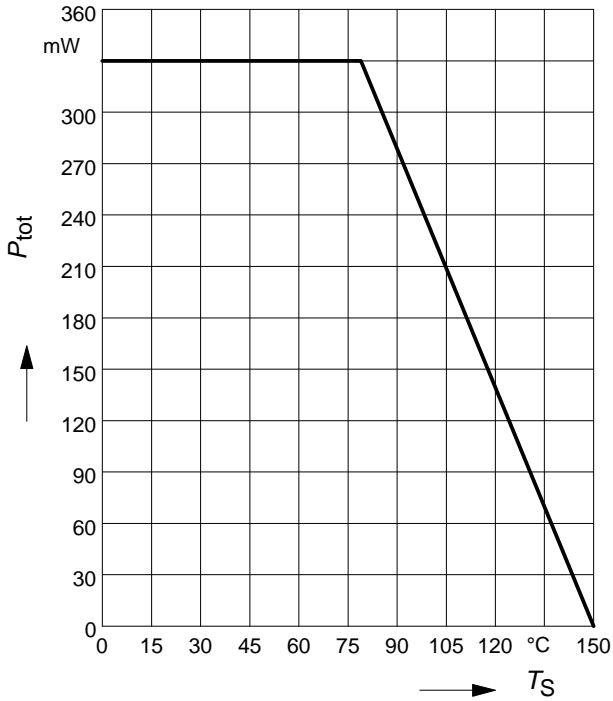
**Collector-base capacitance  $C_{cb} = f(V_{CB})$**

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



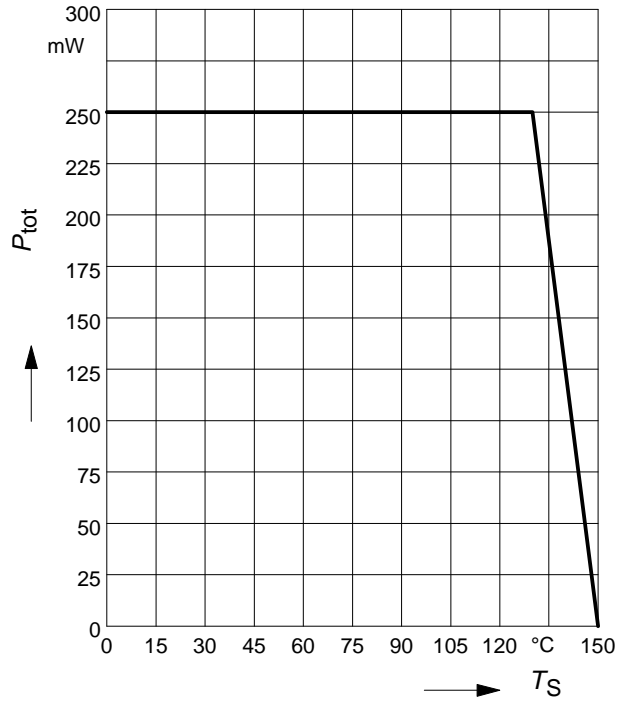
**Total power dissipation  $P_{tot} = f(T_S)$**

BC807, BC808



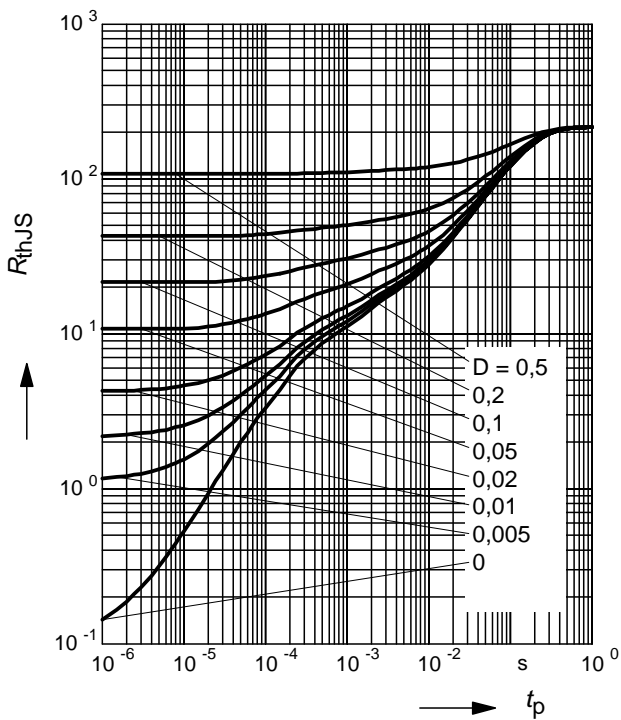
**Total power dissipation  $P_{tot} = f(T_S)$**

BC807W, BC808W



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

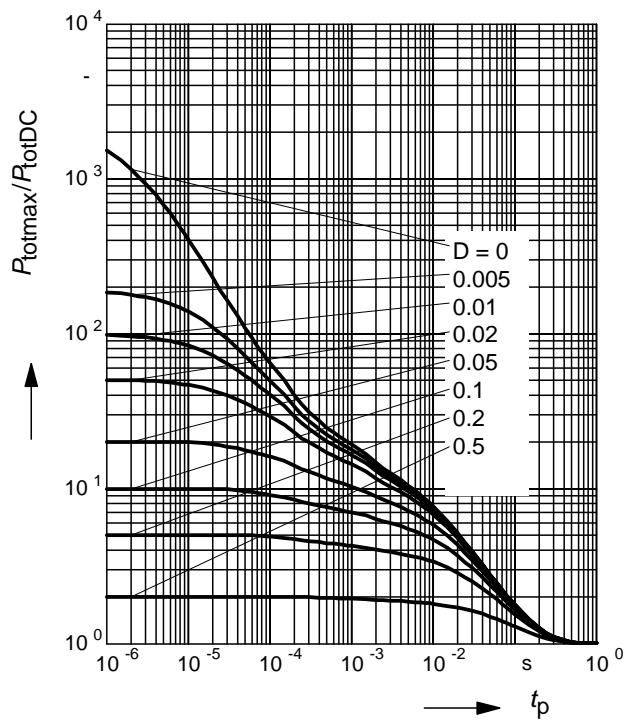
BC807, BC808



**Permissible Pulse Load**

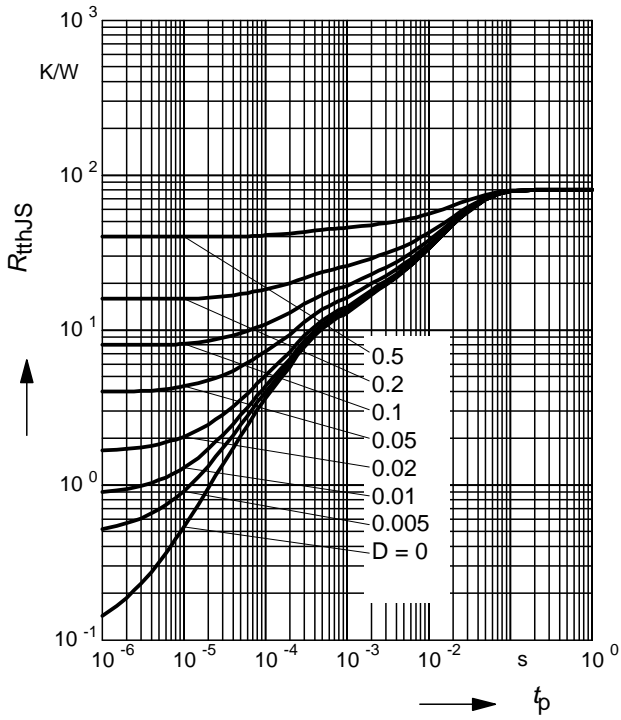
$P_{totmax}/P_{totDC} = f(t_p)$

BC807, BC808



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

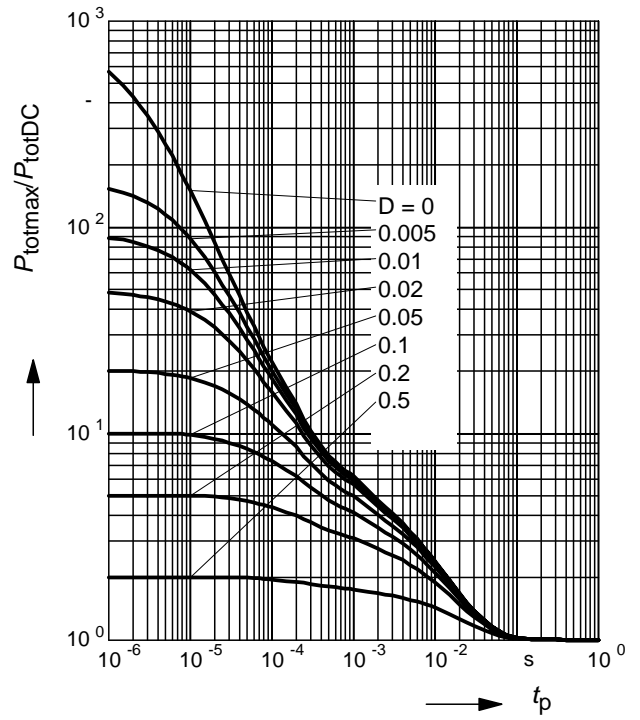
BC807W, BC808W



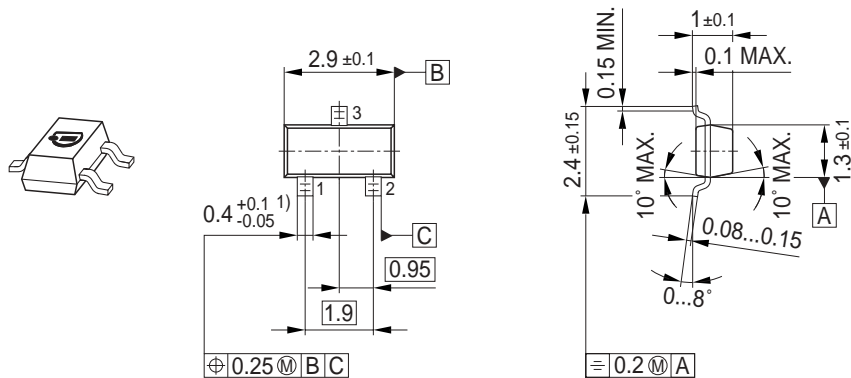
**Permissible Pulse Load**

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

BC807W, BC808W

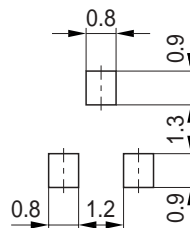


Package Outline

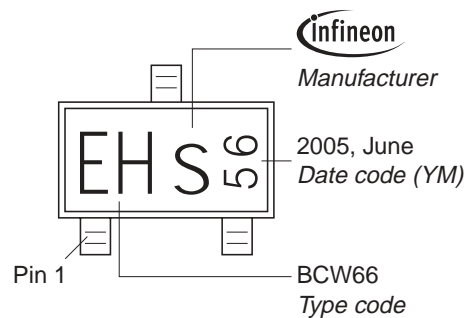


1) Lead width can be 0.6 max. in dambar area

Foot Print

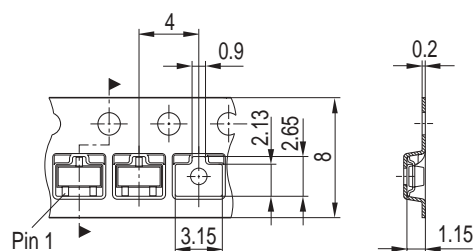


Marking Layout (Example)

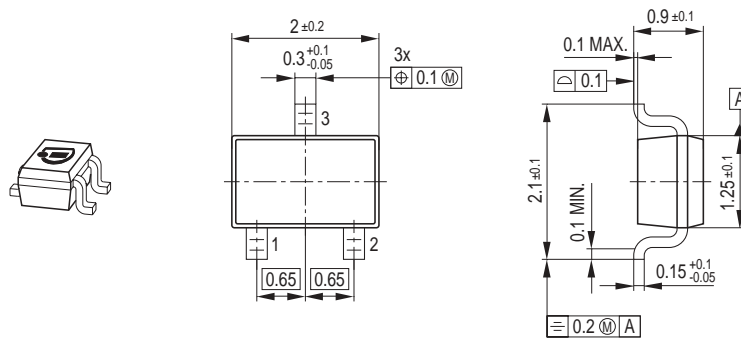


Standard Packing

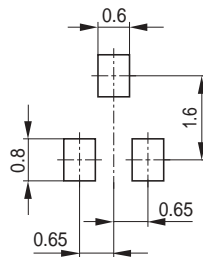
Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel



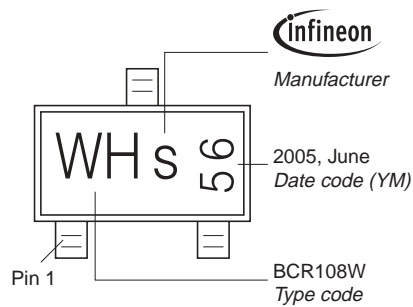
Package Outline



Foot Print

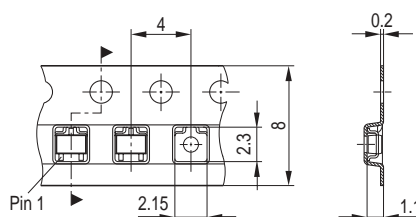


Marking Layout (Example)



Standard Packing

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



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