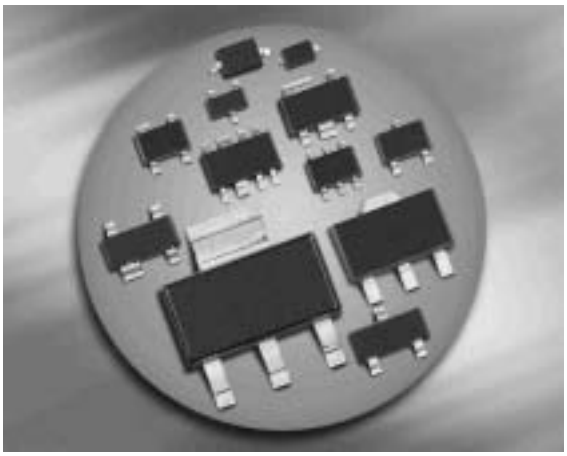
PNP Silicon AF Transistor



- 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[1)]
- Qualified according AEC Q101

AEC Qualified RoHS

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

[1]Pb-containing package may be available upon special request

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector-emitter voltage	V_{CEO}		V
BC807...		45	
BC808...		25	
Collector-base voltage	V_{CBO}		
BC807...		50	
BC808...		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-	P_{tot}		mW
$T_S \leq 79$ °C BC807, BC808		330	
$T_S \leq 130$ °C BC807W, BC808W		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

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

[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at T_A = 25°C, unless otherwise specified

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

[1]Pulse test: t < 300µs; D < 2%

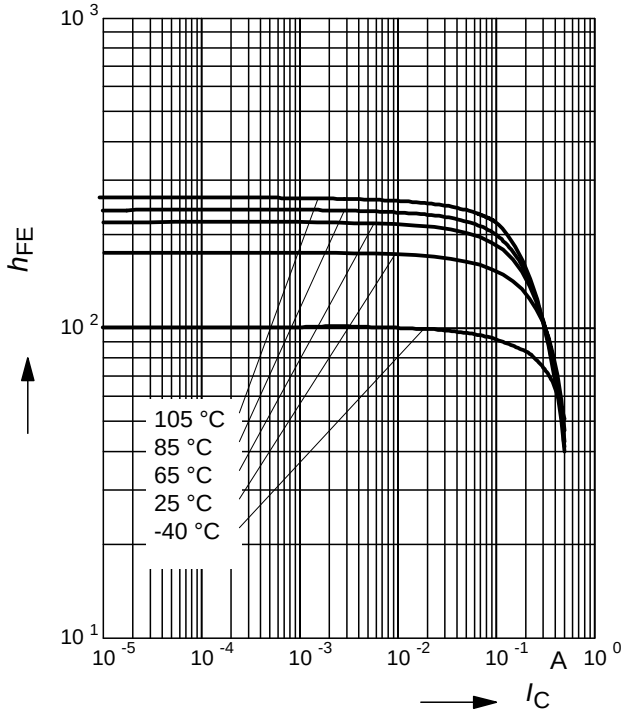
Electrical Characteristics at T_A = 25°C, unless otherwise specified

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

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

V_{CE} = 1 V

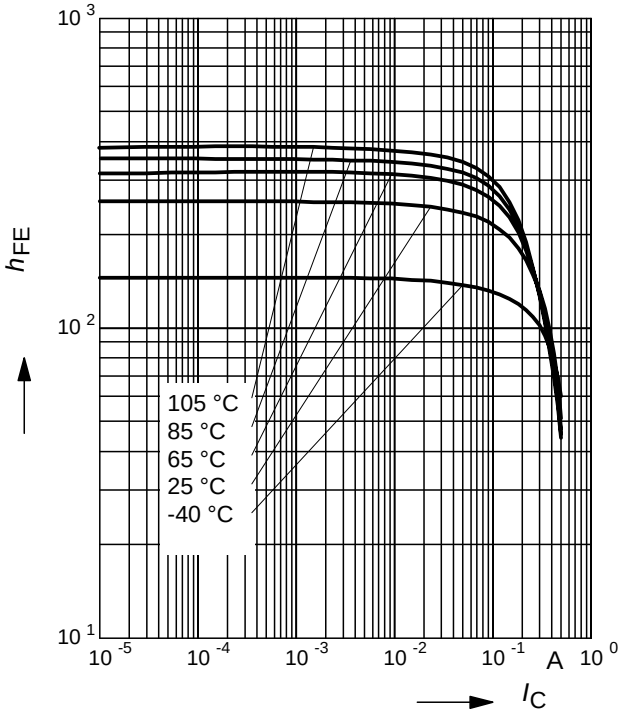
h_{FE}-grp. 16



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

V_{CE} = 1 V

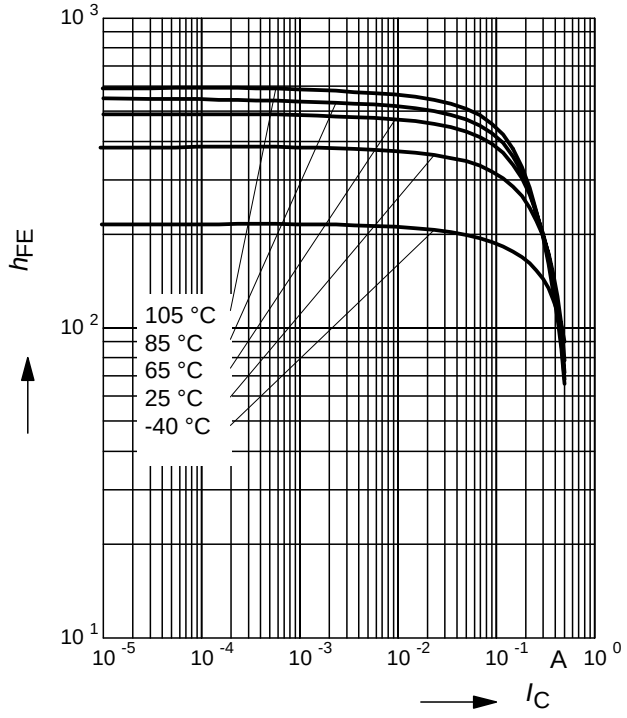
h_{FE}-grp. 25



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

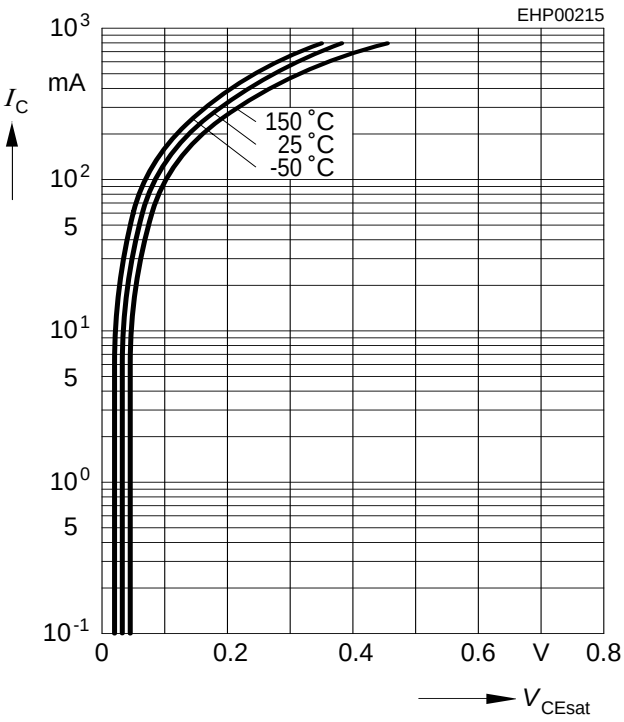
V_{CE} = 1 V

h_{FE}-grp. 40



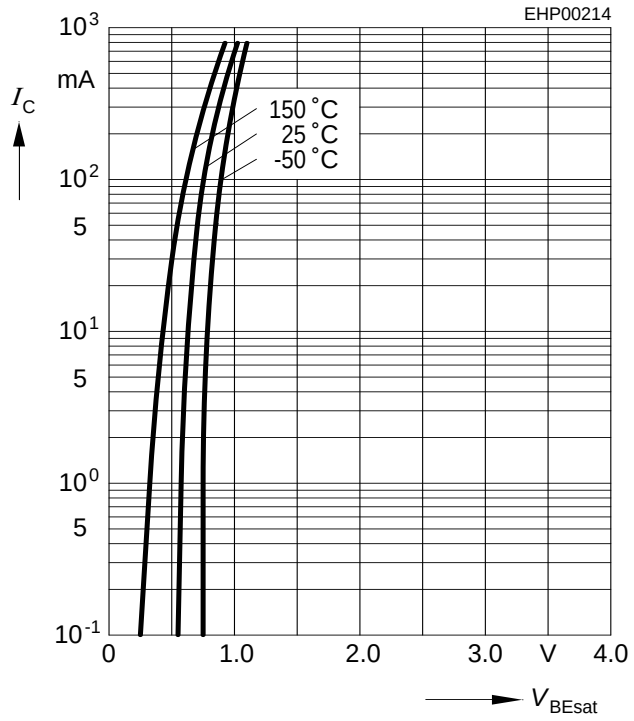
Collector-emitter saturation voltage

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



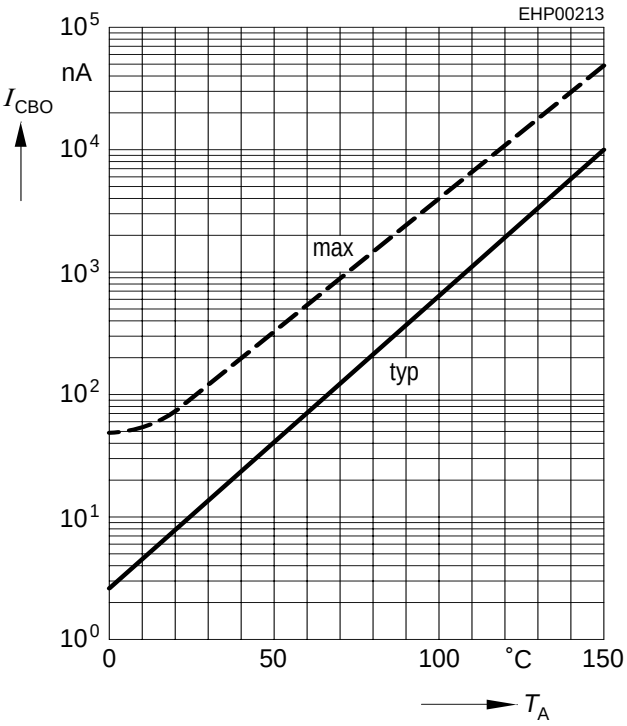
Base-emitter saturation voltage

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



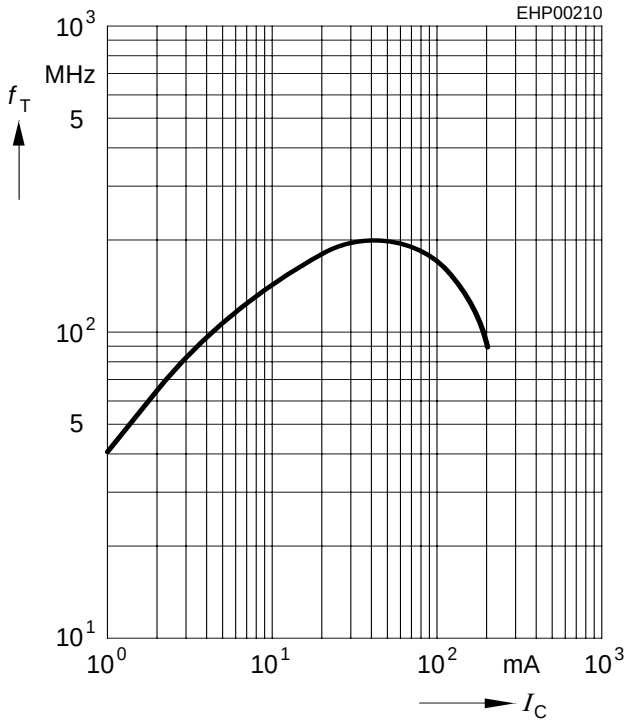
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CBO} = 25 V



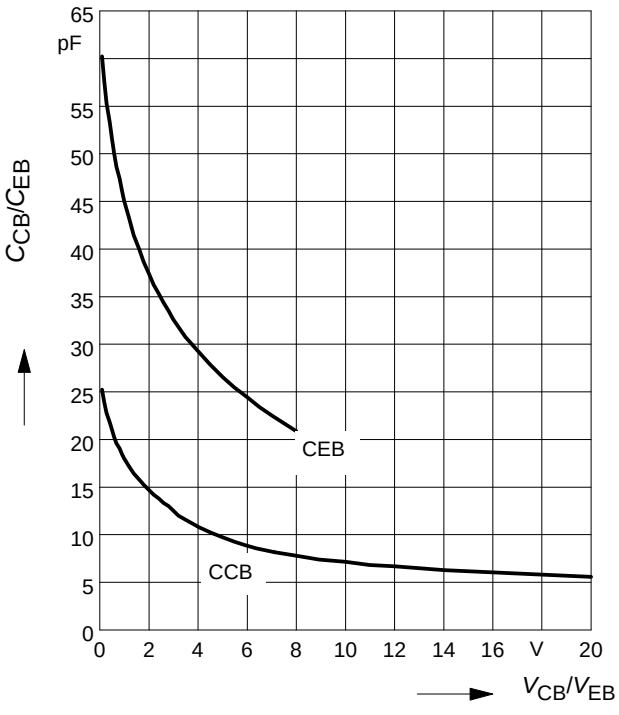
Transition frequency $f_T = f(I_C)$

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



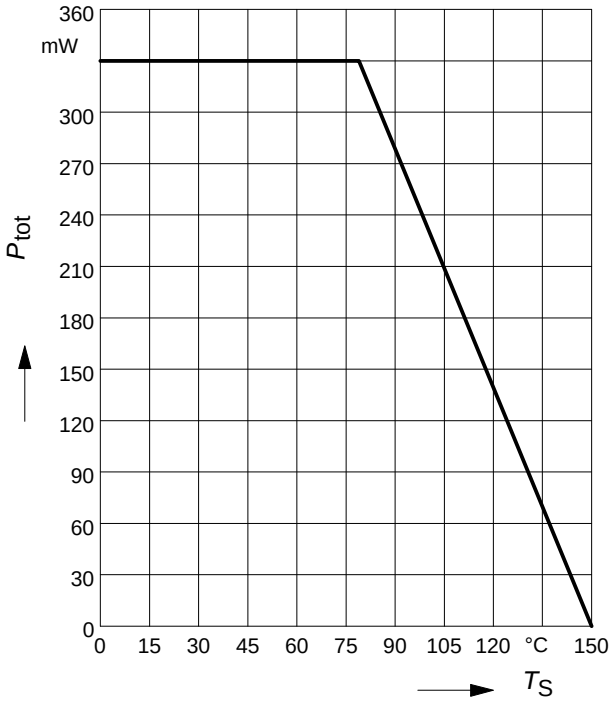
Collector-base capacitance $C_{cb} = f(V_{CB})$

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



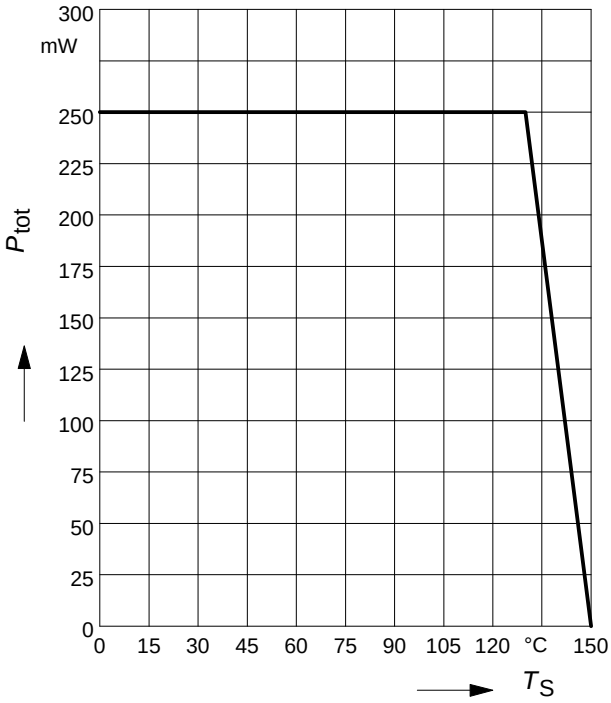
Total power dissipation $P_{tot} = f(T_S)$

BC807, BC808



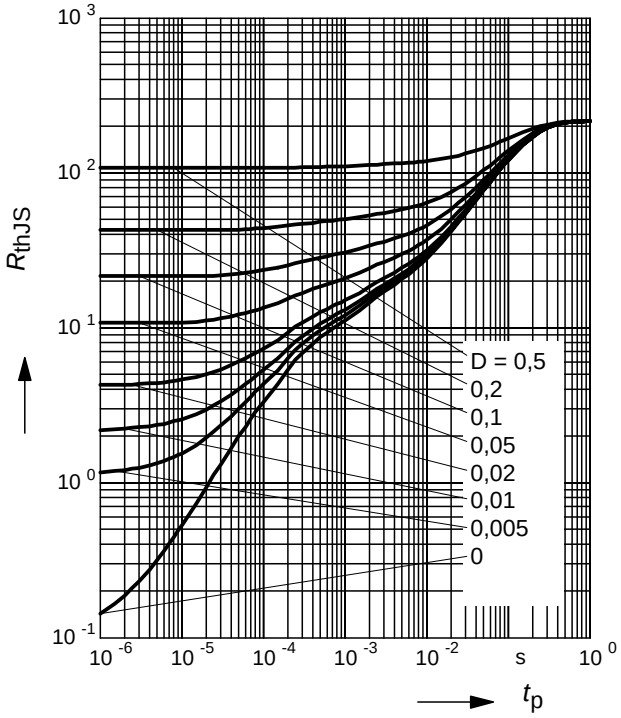
Total power dissipation $P_{tot} = f(T_S)$

BC807W, BC808W



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

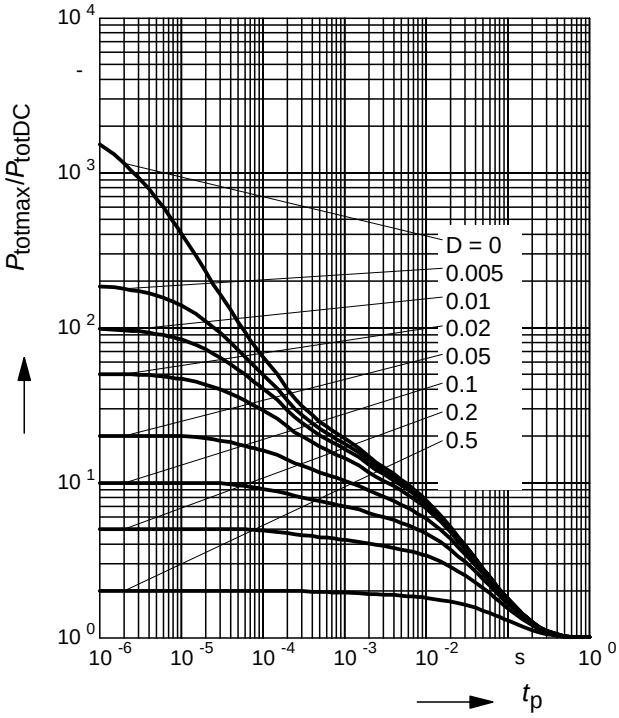
BC807, BC808



Permissible Pulse Load

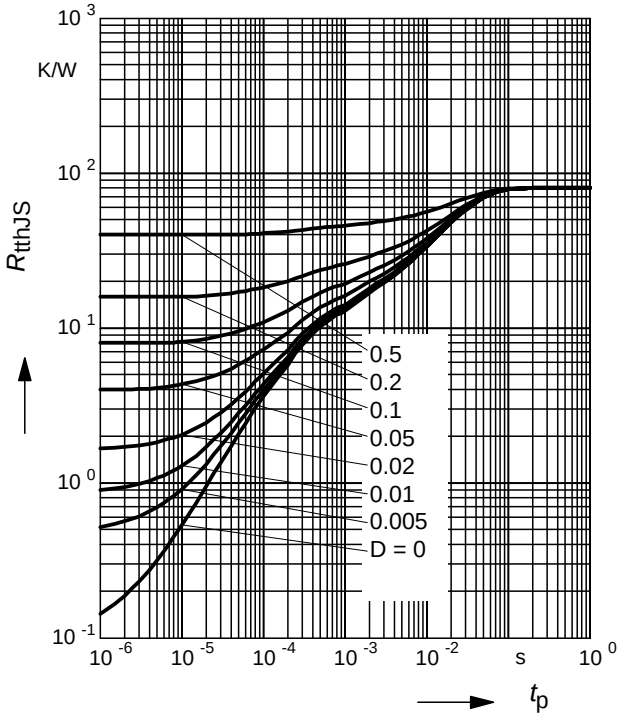
$P_{totmax}/P_{totDC} = f(t_p)$

BC807, BC808



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

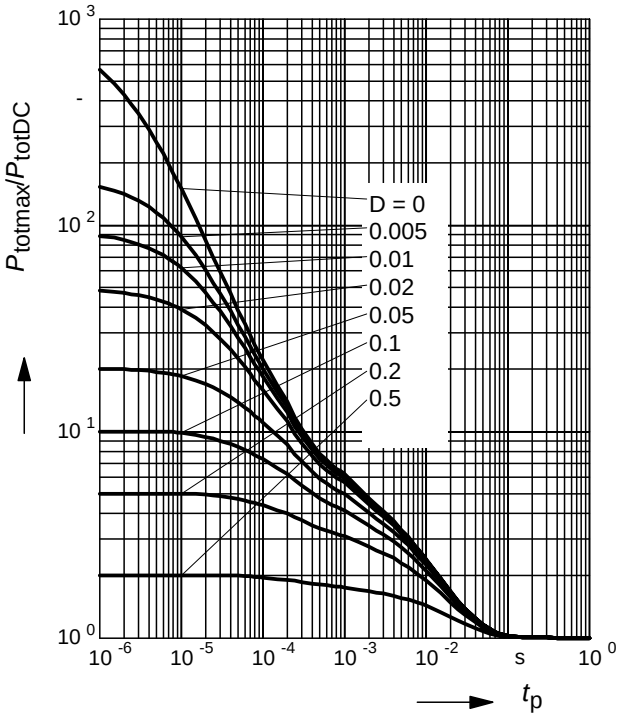
BC807W, BC808W



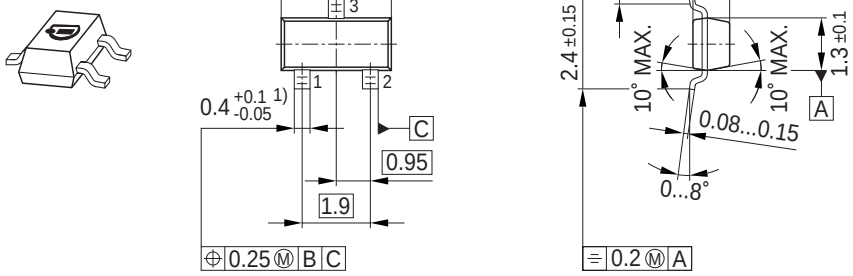
Permissible Pulse Load

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

BC807W, BC808W

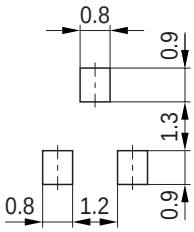


Package Outline

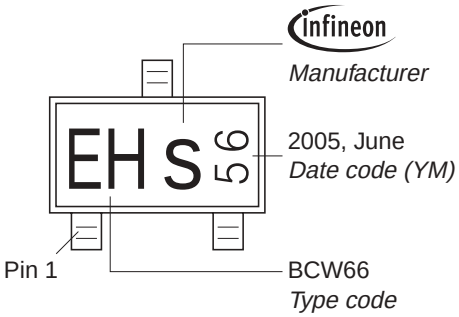


1) Lead width can be 0.6 max. in dambar area

Foot Print

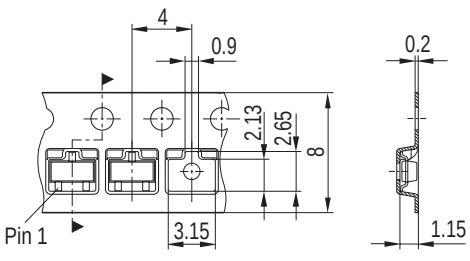


Marking Layout (Example)



Standard Packing

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



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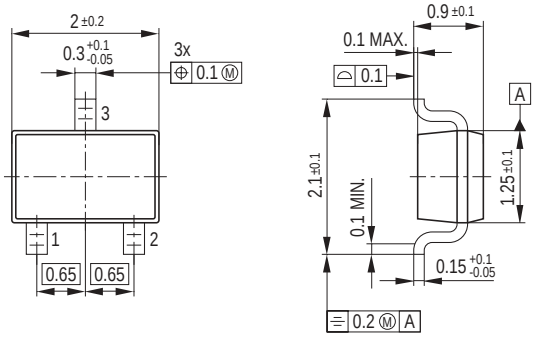

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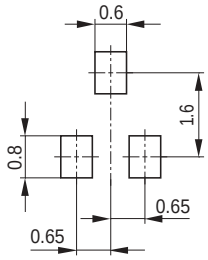
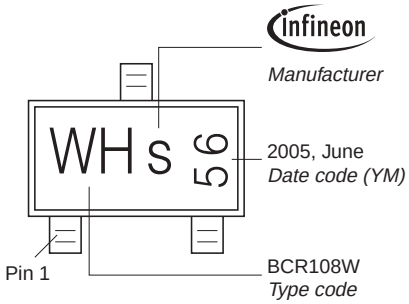


Marking Layout (Example)



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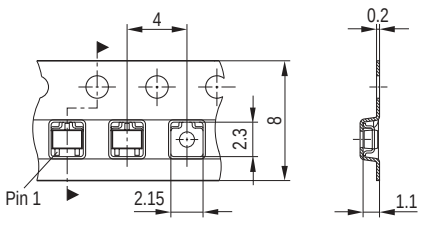

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