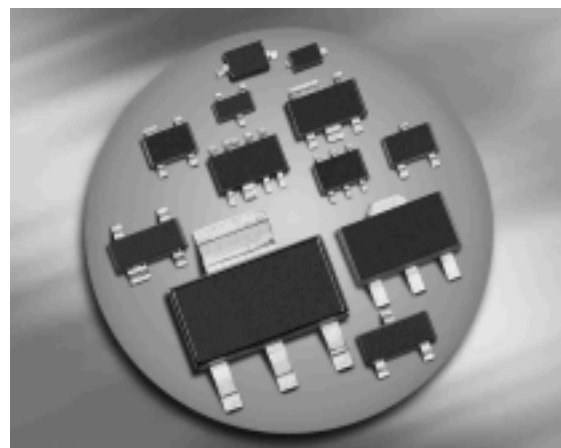


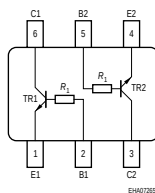
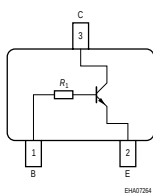
NPN silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit
- Built in resistor ($R_1=4.7\text{ k}\Omega$)
- BCR119S: Two internally isolated transistors with good matching in one multichip package
- BCR119S: For orientation in reel see package information below
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BCR119/F/W

BCR119S



Type	Marking	Pin Configuration						Package
BCR119	WKs	1=B	2=E	3=C	-	-	-	SOT23
BCR119F	WKs	1=B	2=E	3=C	-	-	-	TSFP-3
BCR119S	WKs	1=E1	2=B1	3=C2	4=E2	5=B2	6=C1	SOT363
BCR119W	WKs	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}	50	V
Collector-base voltage	V_{CBO}	50	
Input forward voltage	$V_{i(fwd)}$	30	
Input reverse voltage	$V_{i(rev)}$	5	
DC collector current	I_E	100	mA
Total power dissipation- BCR119, $T_S \leq 102^\circ\text{C}$ BCR119F, $T_S \leq 128^\circ\text{C}$ BCR119S, $T_S \leq 115^\circ\text{C}$ BCR119W, $T_S \leq 124^\circ\text{C}$	P_{tot}	200 250 250 250	mW
Junction temperature	T_j	150	
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾ BCR119 BCR119F BCR119S BCR119W	R_{thJS}	≤ 240 ≤ 90 ≤ 140 ≤ 105	K/W

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

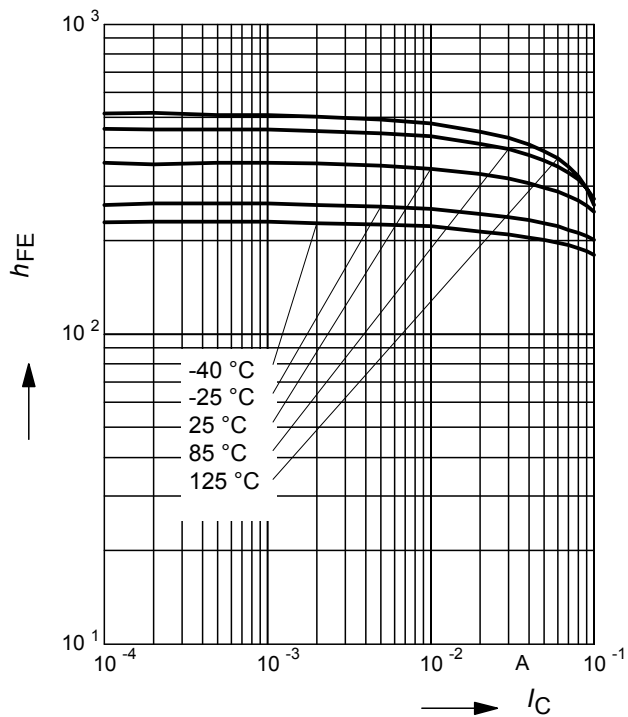
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Collector-emitter breakdown voltage $I_C = 100\ \mu\text{A}$, $I_B = 0$	$V_{(\text{BR})\text{CEO}}$	50	-	-	V
Collector-base breakdown voltage $I_C = 10\ \mu\text{A}$, $I_E = 0$	$V_{(\text{BR})\text{CBO}}$	50	-	-	
Collector-base cutoff current $V_{\text{CB}} = 40\ \text{V}$, $I_E = 0$	I_{CBO}	-	-	100	nA
Emitter-base cutoff current $V_{\text{EB}} = 5\ \text{V}$, $I_C = 0$	I_{EBO}	-	-	100	nA
DC current gain ¹⁾ $I_C = 5\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$	h_{FE}	120	-	630	-
Collector-emitter saturation voltage ¹⁾ $I_C = 10\ \text{mA}$, $I_B = 0.5\ \text{mA}$	V_{CEsat}	-	-	0.3	V
Input off voltage $I_C = 100\ \mu\text{A}$, $V_{\text{CE}} = 5\ \text{V}$	$V_{\text{i(off)}}$	0.4	-	0.8	
Input on voltage $I_C = 2\ \text{mA}$, $V_{\text{CE}} = 0.3\ \text{V}$	$V_{\text{i(on)}}$	0.5	-	1.1	
Input resistor	R_1	3.2	4.7	6.2	kΩ
AC Characteristics					
Transition frequency $I_C = 10\ \text{mA}$, $V_{\text{CE}} = 5\ \text{V}$, $f = 100\ \text{MHz}$	f_{T}	-	150	-	MHz
Collector-base capacitance $V_{\text{CB}} = 10\ \text{V}$, $f = 1\ \text{MHz}$	C_{cb}	-	3	-	pF

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

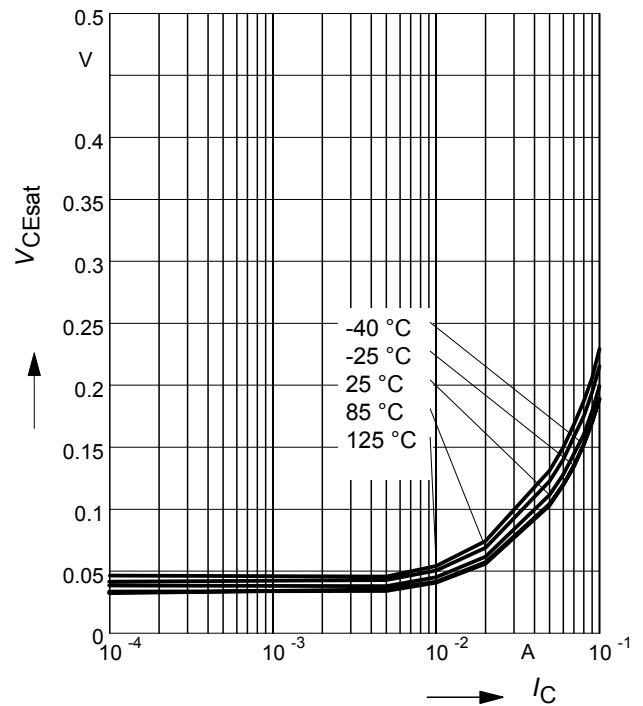
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5V$ (common emitter configuration)



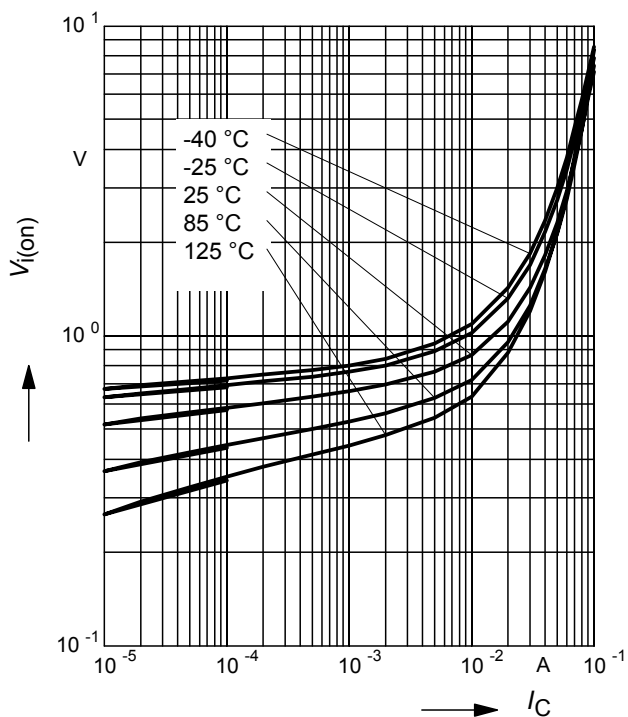
Collector-emitter saturation voltage

$V_{CEsat} = f(I_C)$, $I_C/I_B = 20$



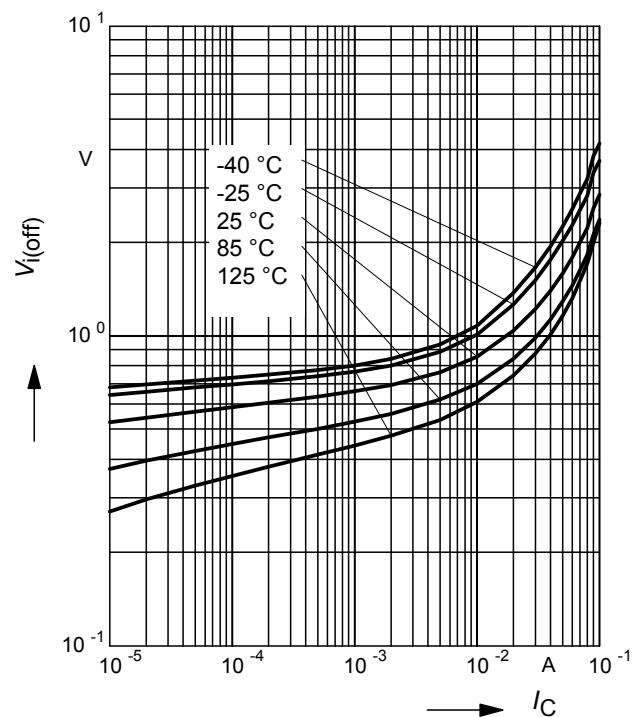
Input on Voltage $V_{i(on)} = f(I_C)$

$V_{CE} = 0.3V$ (common emitter configuration)



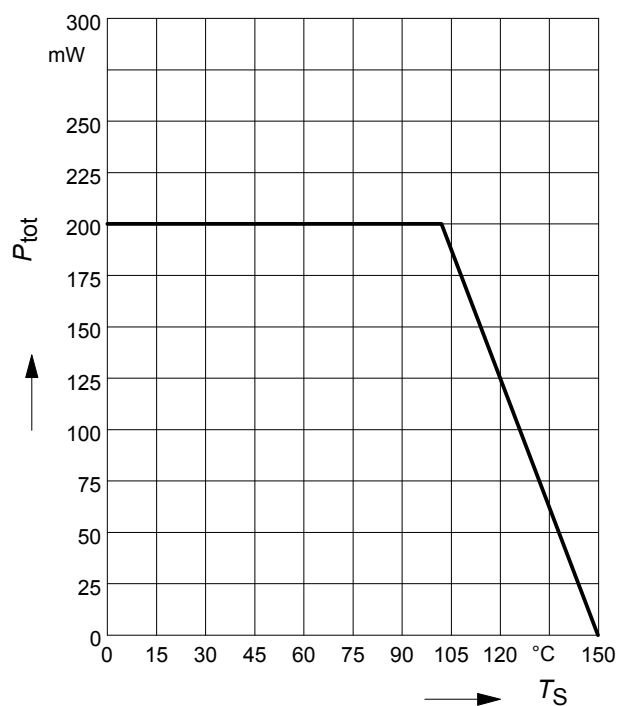
Input off voltage $V_{i(off)} = f(I_C)$

$V_{CE} = 5V$ (common emitter configuration)



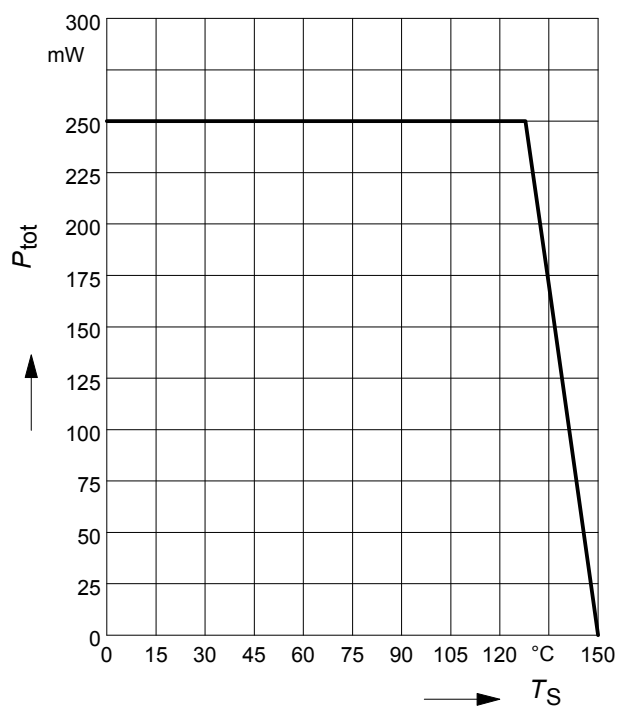
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119



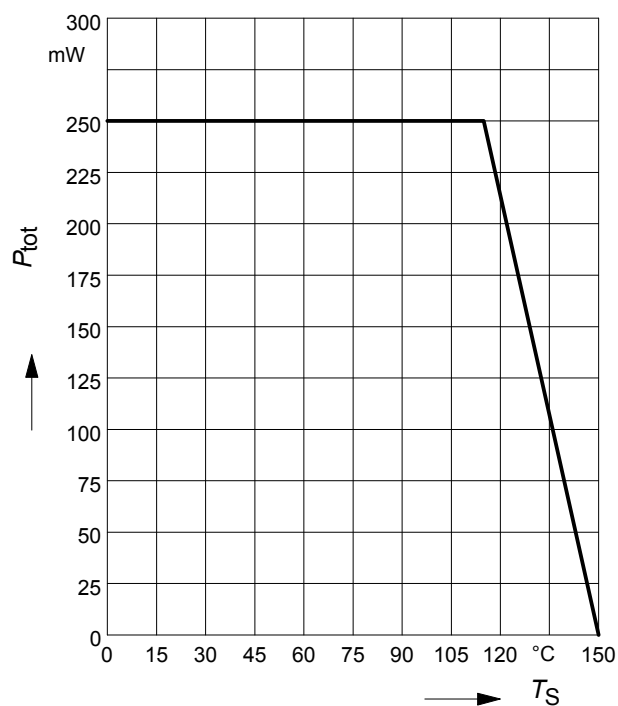
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119F



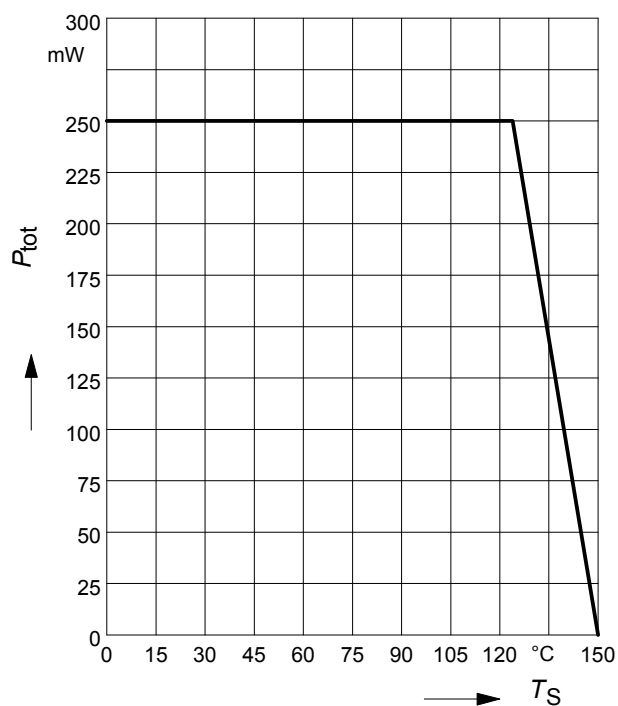
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119S



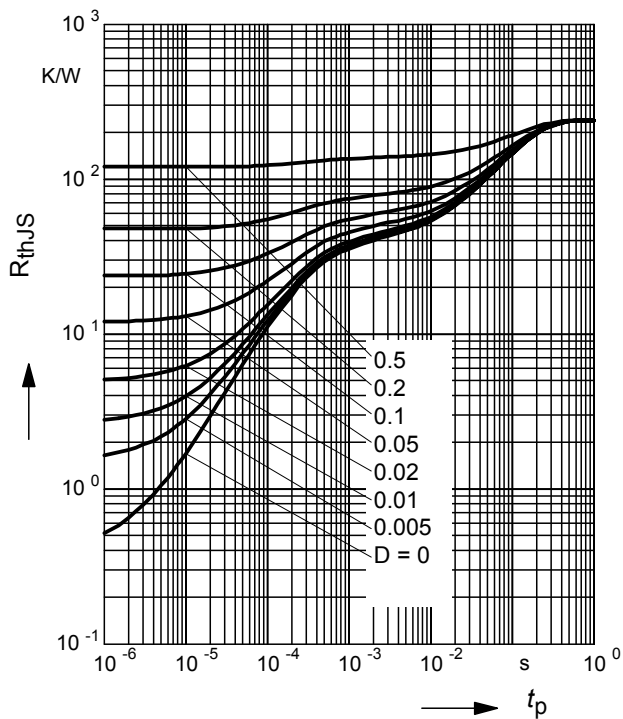
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119W



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

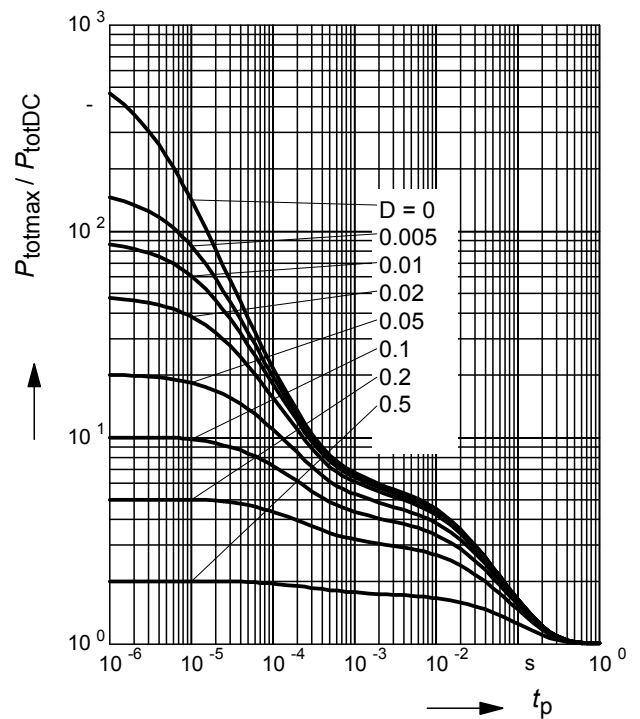
BCR119



Permissible Pulse Load

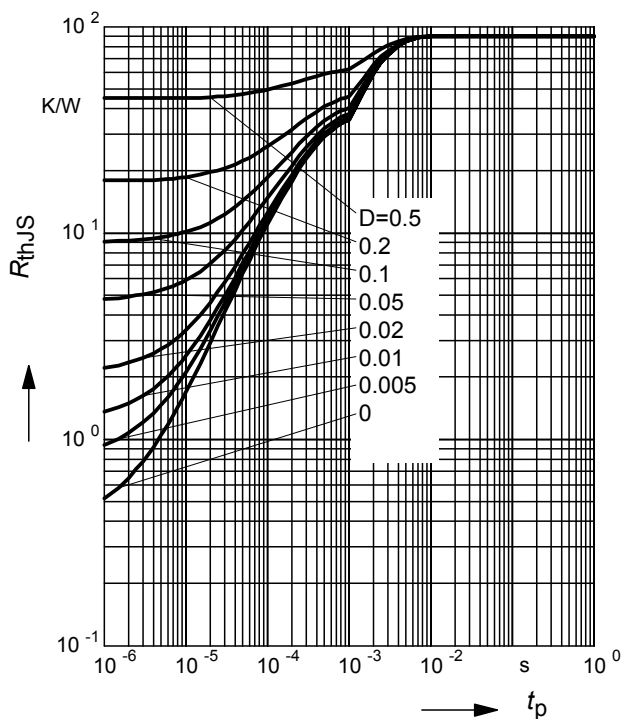
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119



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

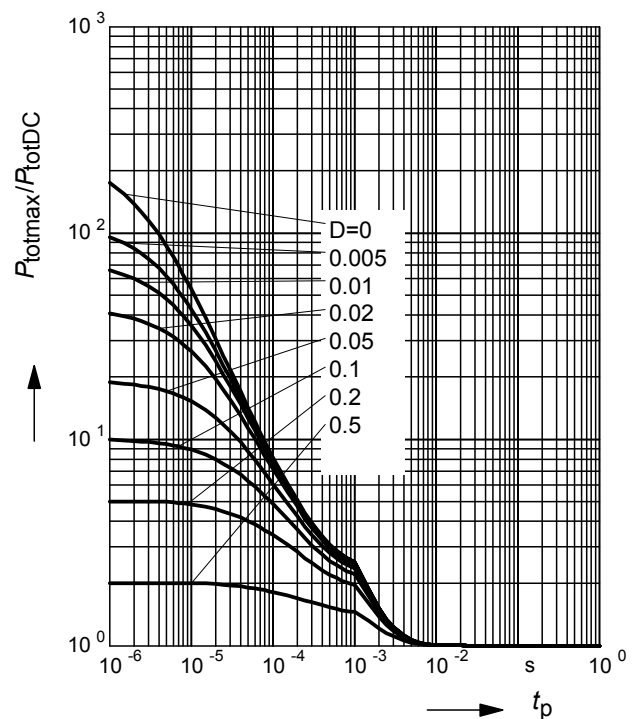
BCR119F



Permissible Pulse Load

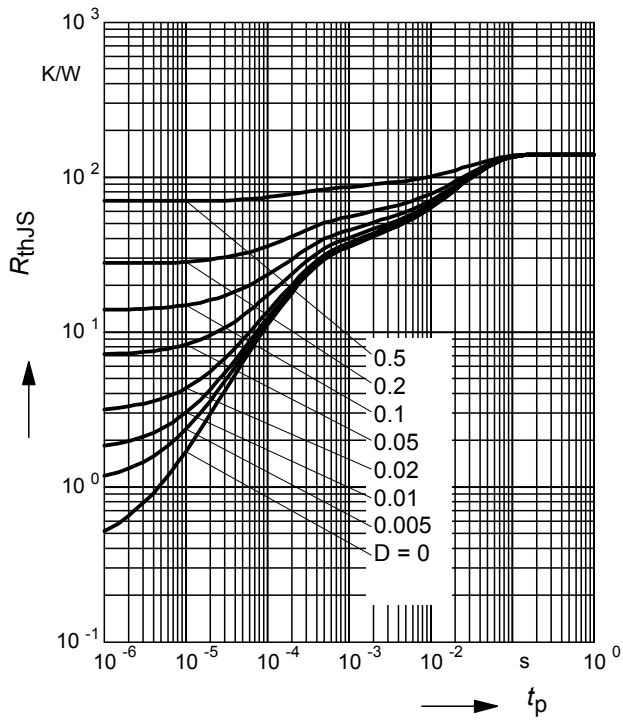
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119F



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

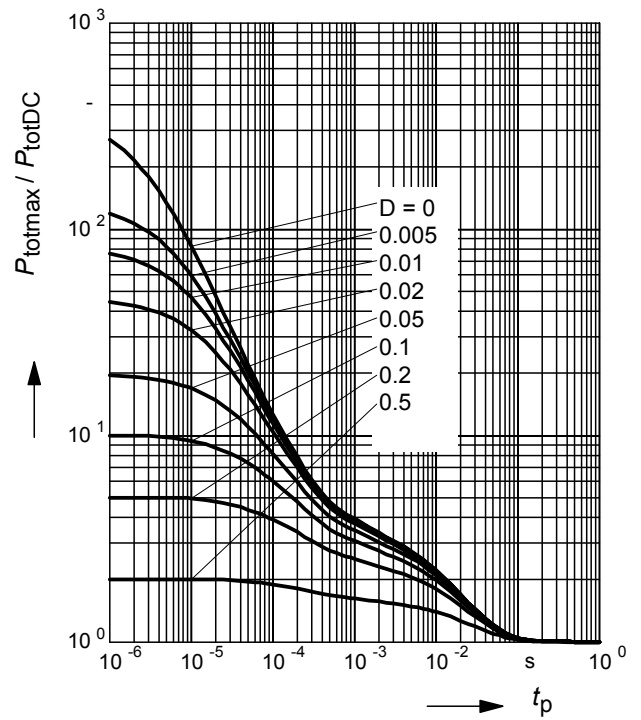
BCR119S



Permissible Pulse Load

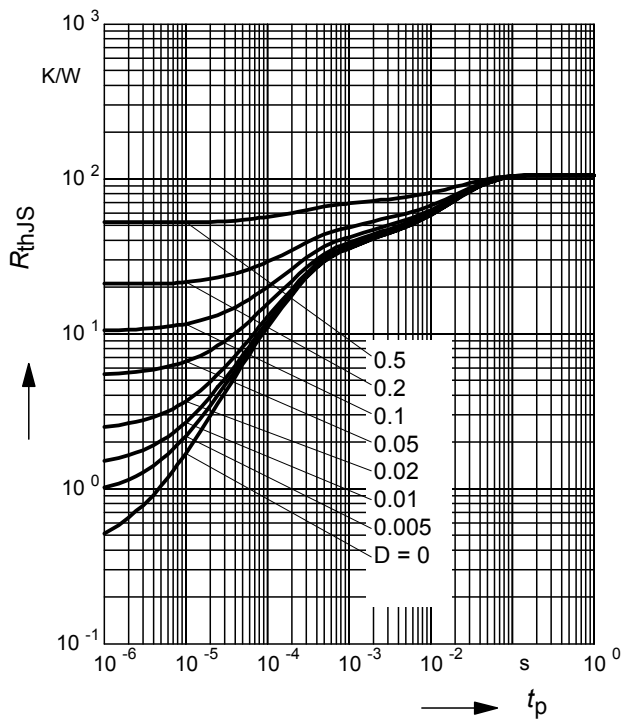
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119S



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

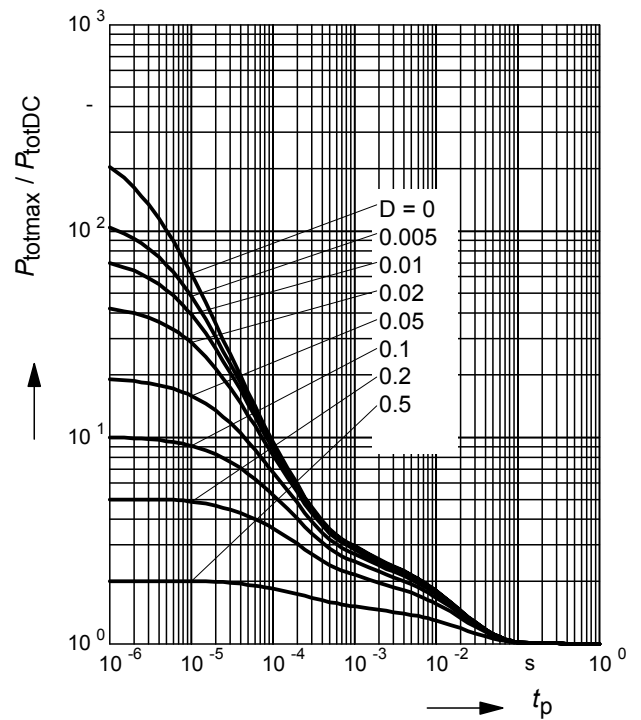
BCR119W

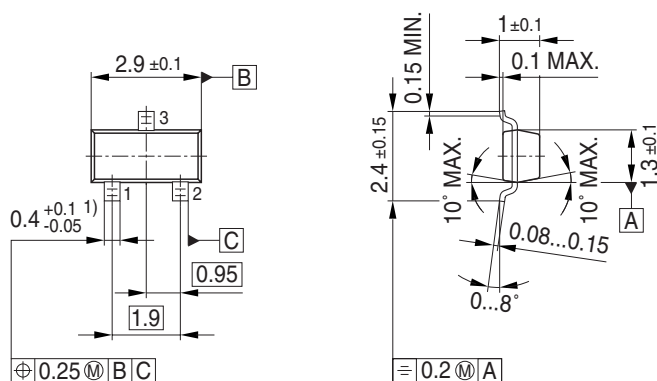


Permissible Pulse Load

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

BCR119W

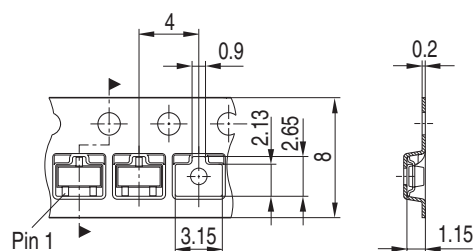




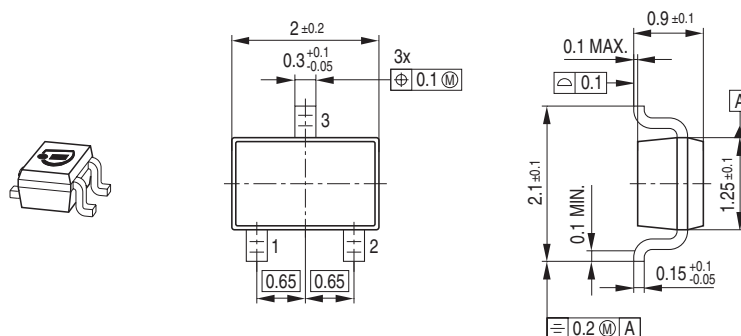
1) Lead width can be 0.6 max. in dambar area

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 with the text 'EHS' and '65' (representing date code 2005, June). The Infineon logo is at the top right. Labels with leader lines point to the Infineon logo (Manufacturer), the date code (Date code (YM)), and the package type code (BCW66 Type code).

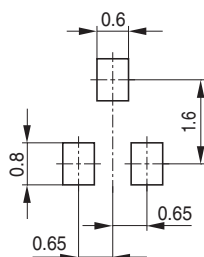
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



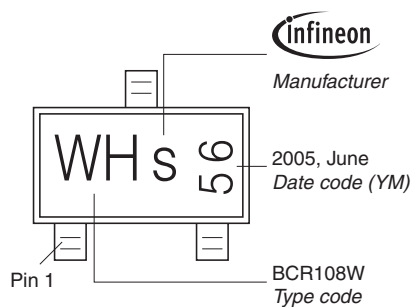
Package Outline



Foot Print

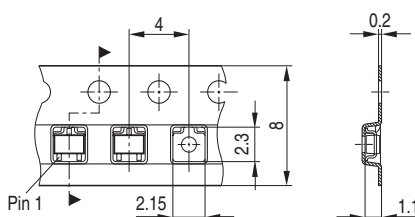


Marking Layout (Example)

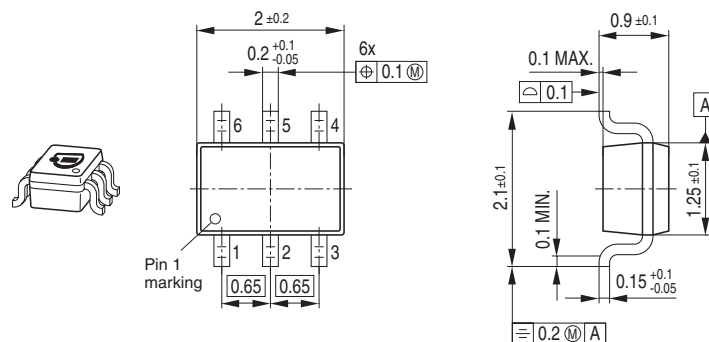


Standard Packing

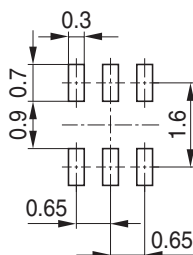
Reel $\varnothing 180 \text{ mm}$ = 3.000 Pieces/Reel
 Reel $\varnothing 330 \text{ mm}$ = 10.000 Pieces/Reel



Package Outline

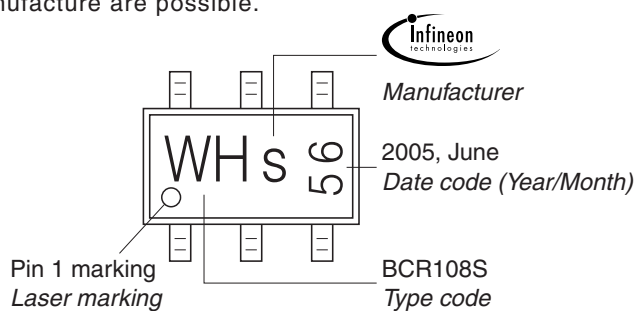


Foot Print



Marking Layout (Example)

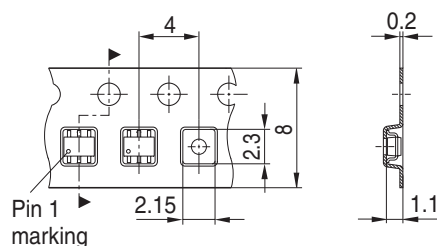
Small variations in positioning of
Date code, Type code and Manufacture are possible.



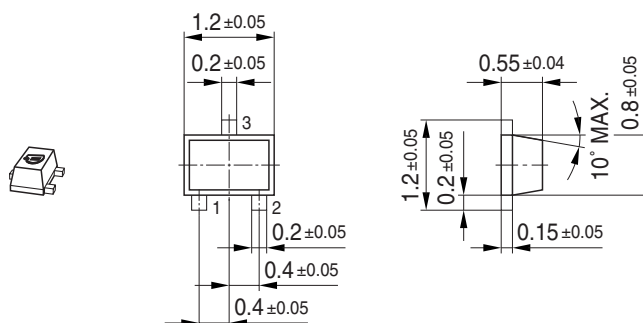
Standard Packing

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

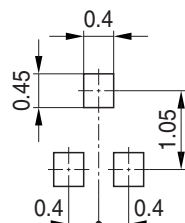
For symmetric types no defined Pin 1 orientation in reel.



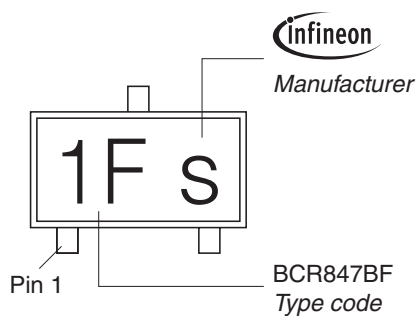
Package Outline



Foot Print

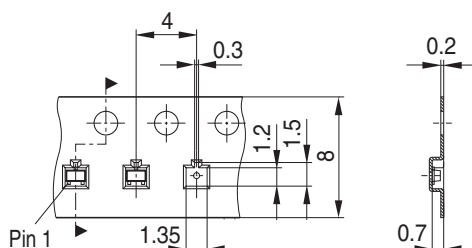


Marking Layout (Example)



Standard Packing

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



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