

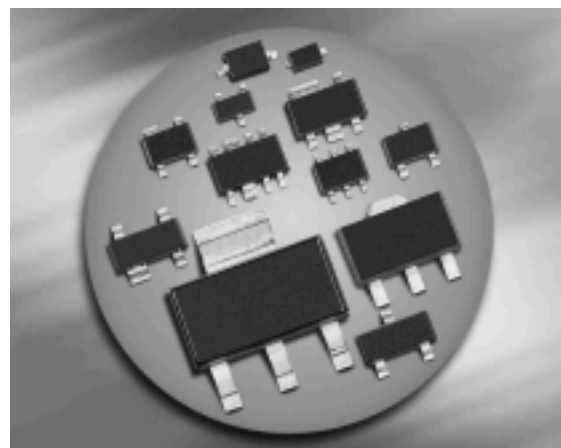


THE DATASHEET OF BCR119W E6327



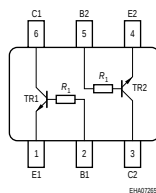
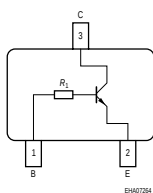
NPN silicon Digital Transistor

- 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) package ¹⁾
- 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

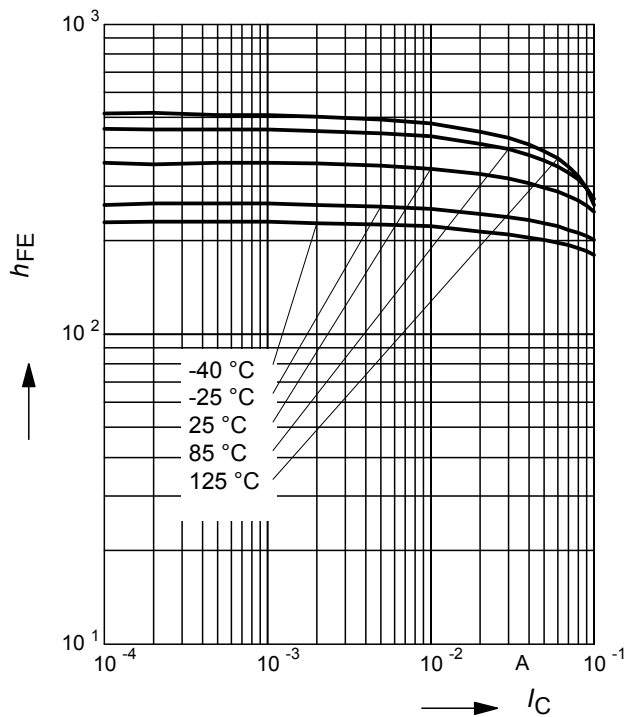
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

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: $t < 300\ \mu\text{s}$; $D < 2\%$

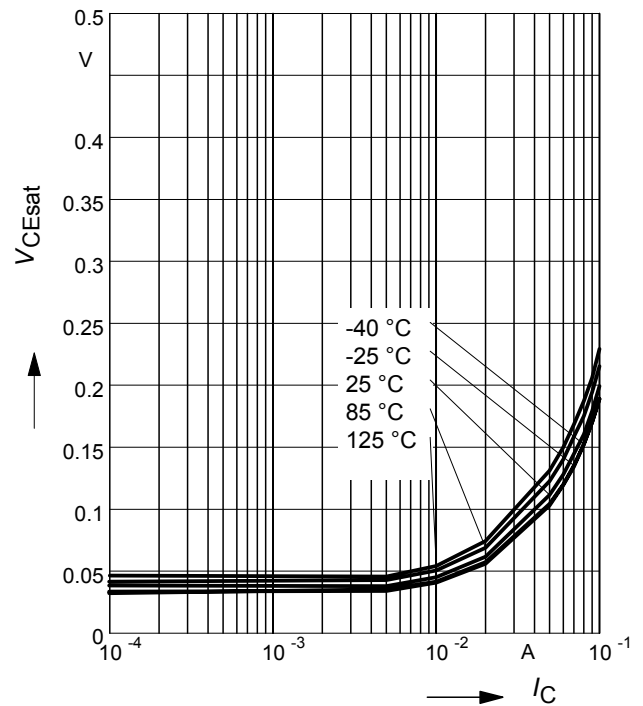
DC current gain $h_{FE} = f(I_C)$

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



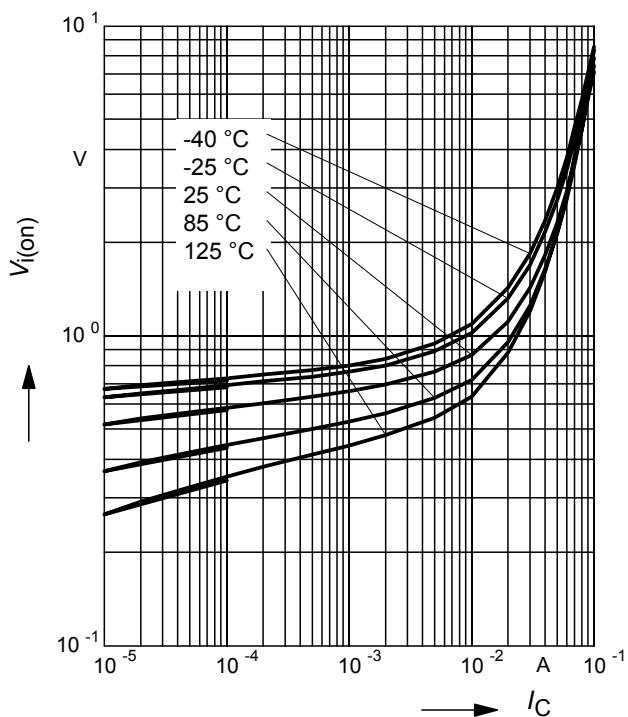
Collector-emitter saturation voltage

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



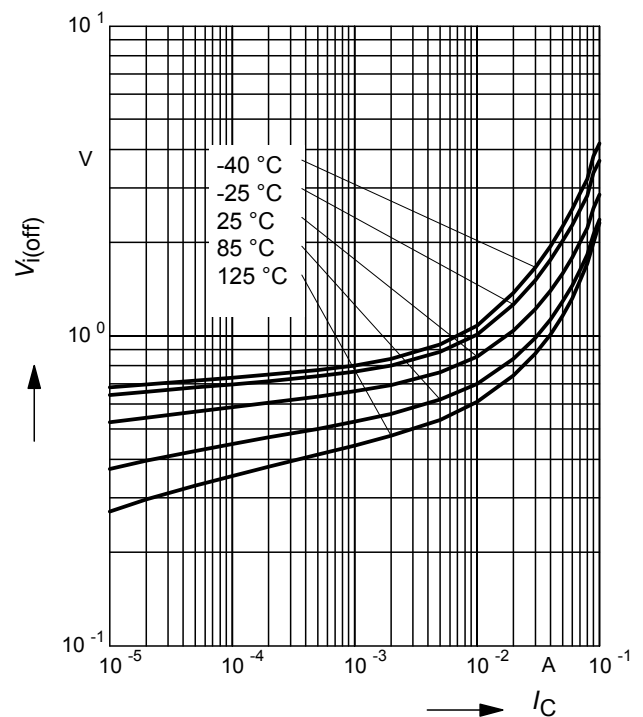
Input on Voltage $V_{i(on)} = f(I_C)$

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



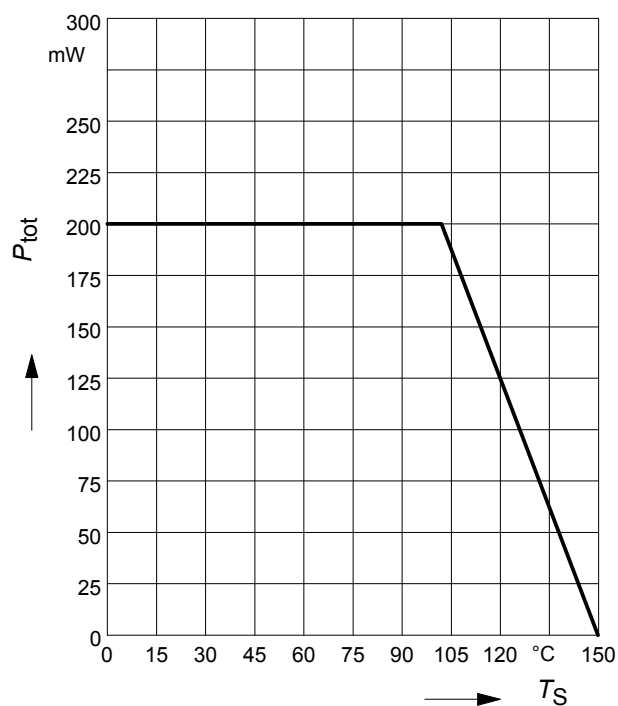
Input off voltage $V_{i(off)} = f(I_C)$

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



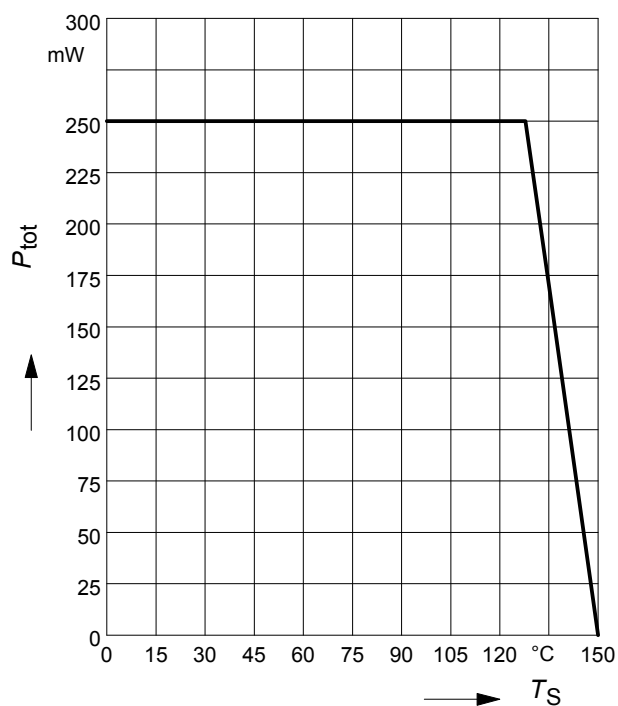
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119



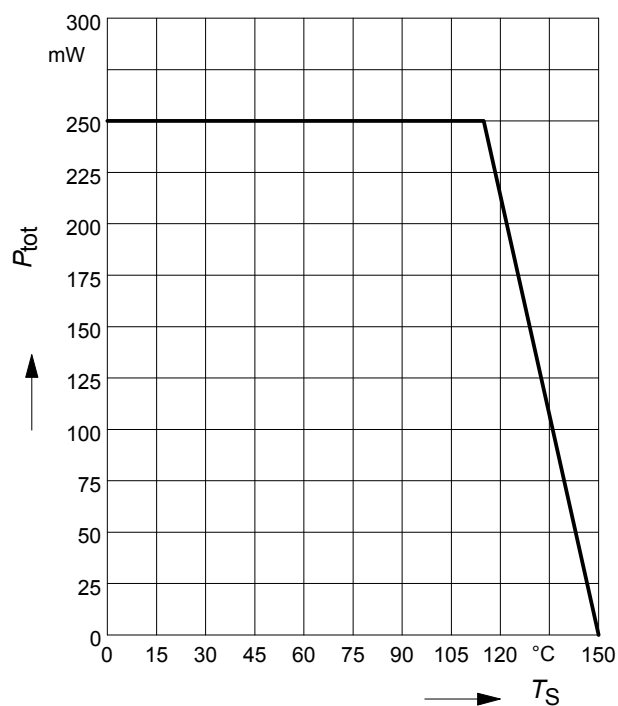
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119F



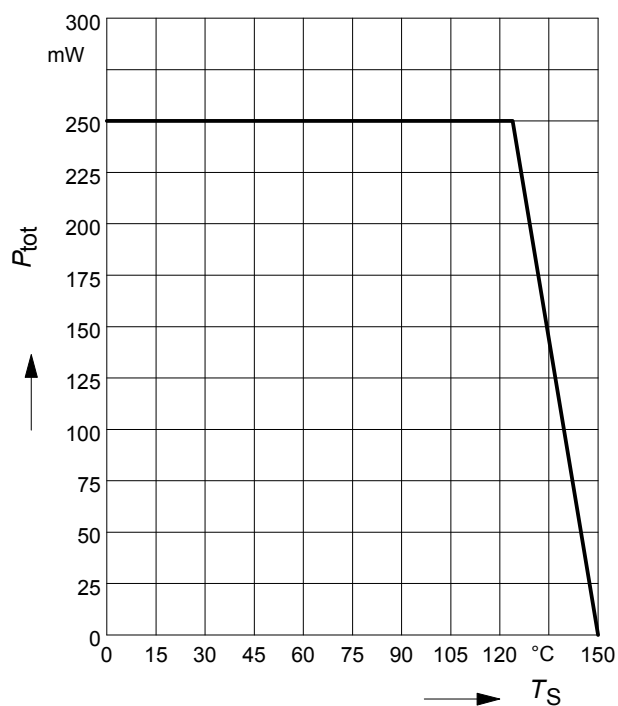
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119S



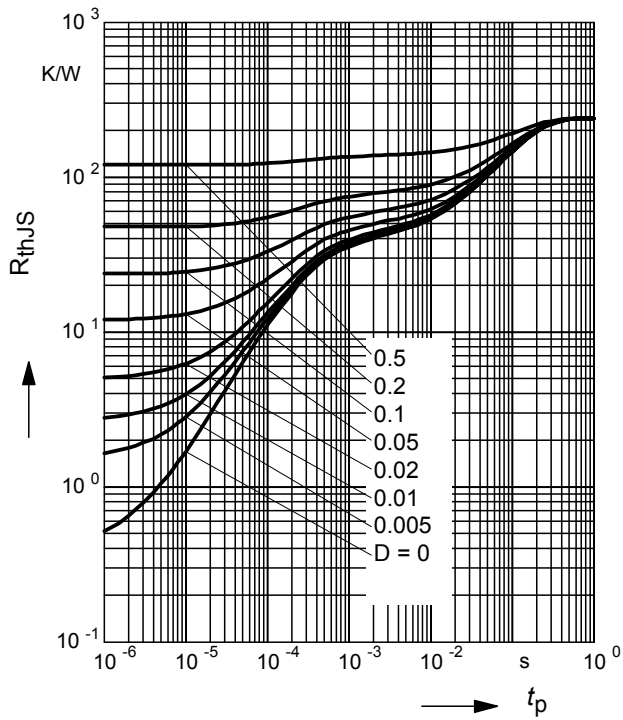
Total power dissipation $P_{\text{tot}} = f(T_S)$

BCR119W



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

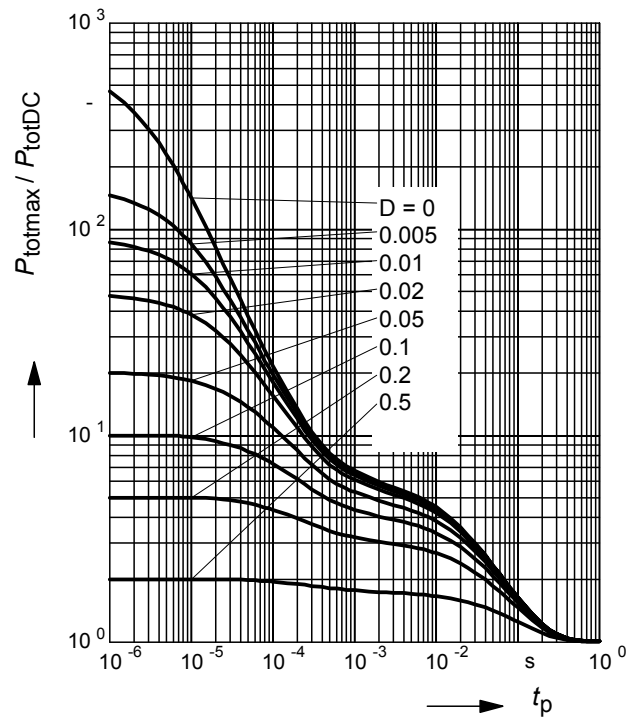
BCR119



Permissible Pulse Load

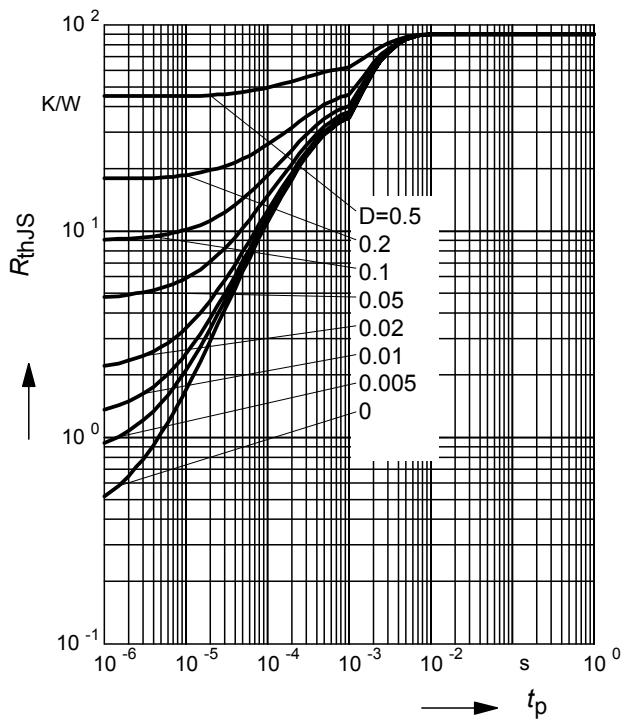
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119



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

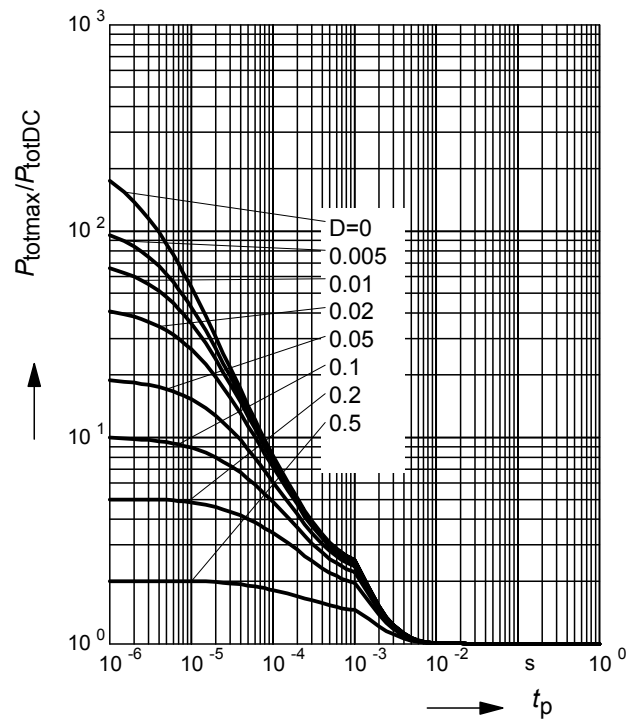
BCR119F



Permissible Pulse Load

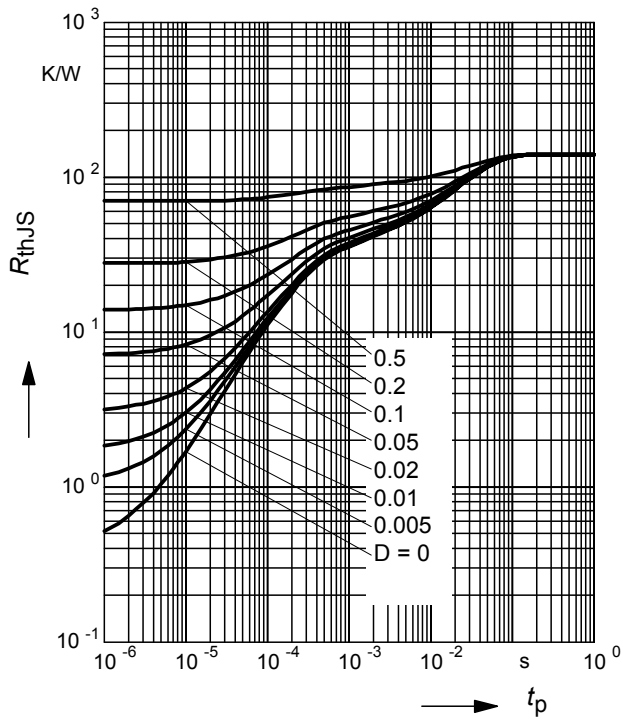
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119F



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

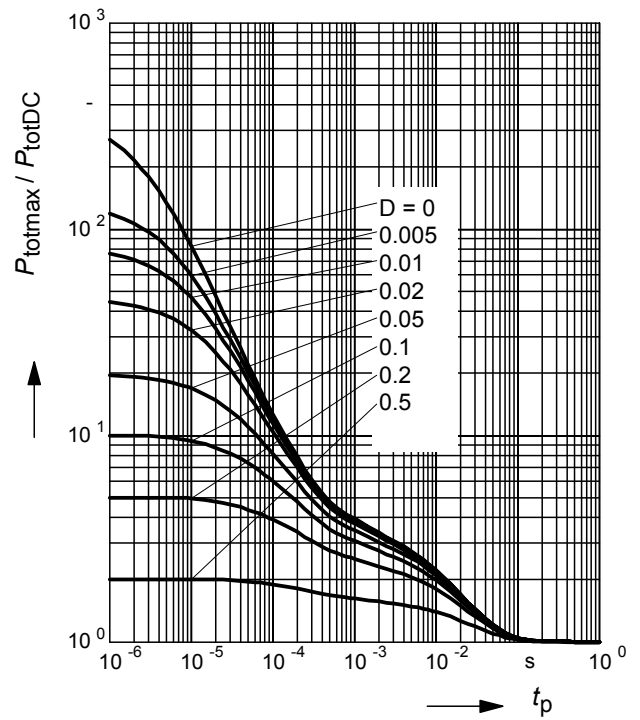
BCR119S



Permissible Pulse Load

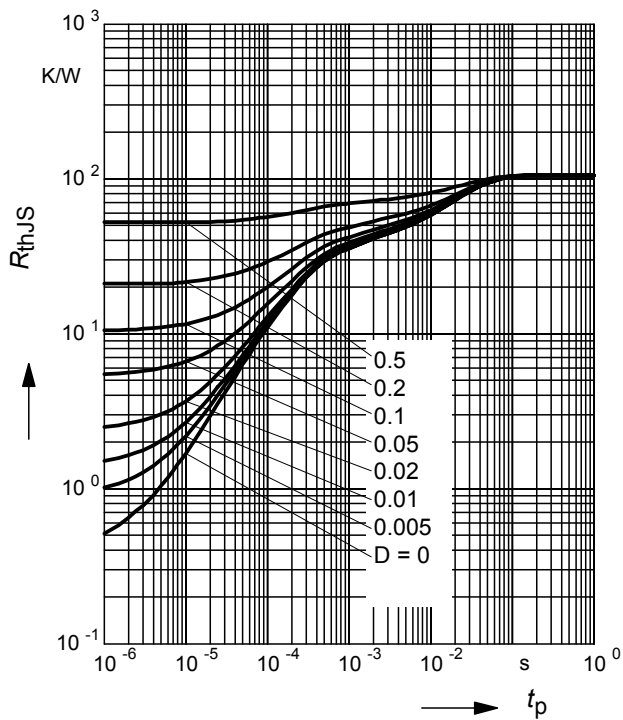
$$P_{totmax}/P_{totDC} = f(t_p)$$

BCR119S



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

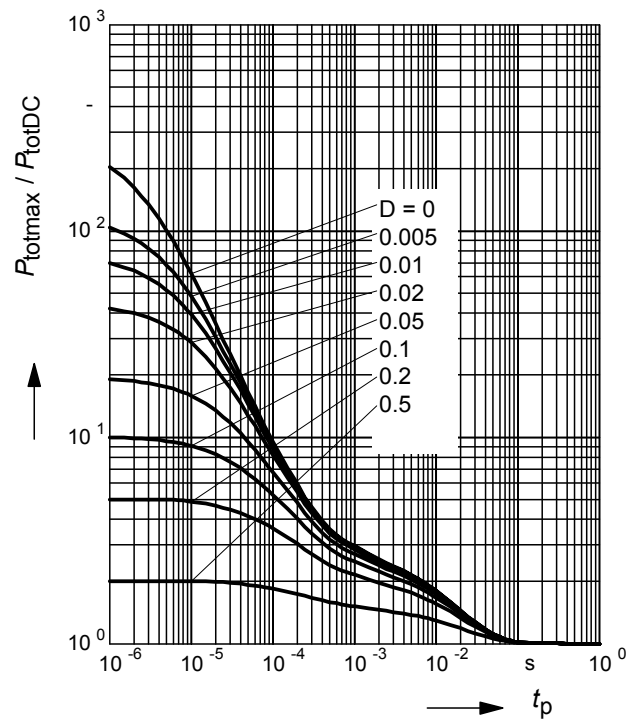
BCR119W

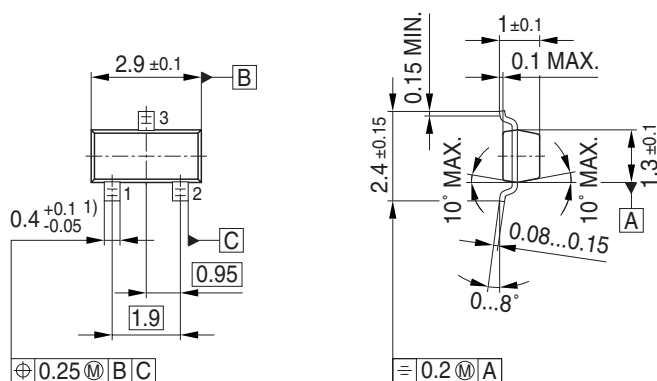


Permissible Pulse Load

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

BCR119W





Foot Print

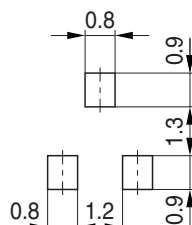
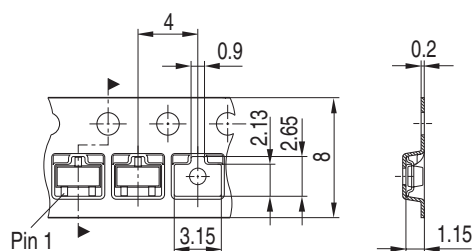


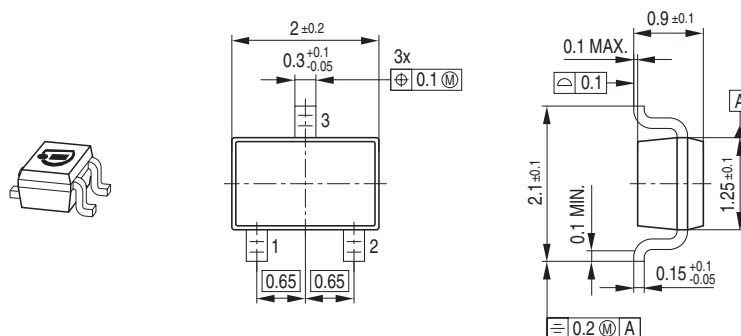
Diagram illustrating the marking on the BCW66 component:

- Manufacturer:** infineon
- Date code (YM):** 2005, June (represented by '65')
- Type code:** BCW66
- Pin 1:** Indicated by a line pointing to the first pin.

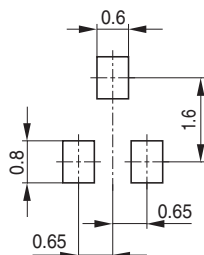
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



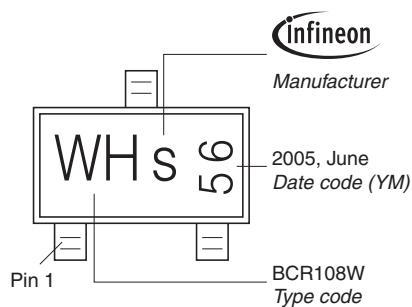
Package Outline



Foot Print

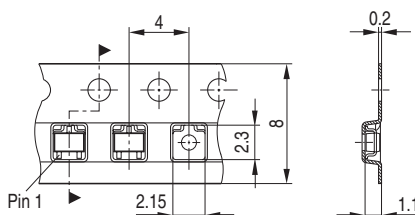


Marking Layout (Example)

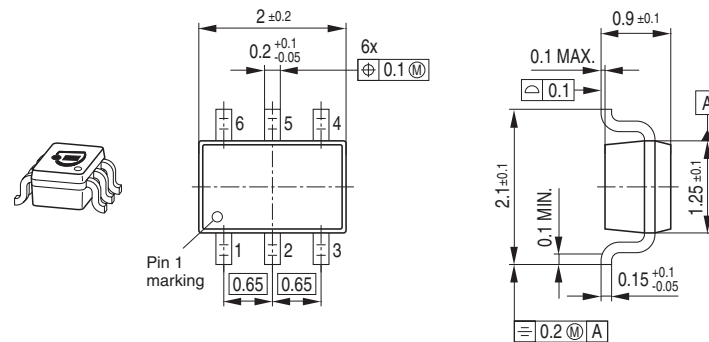


Standard Packing

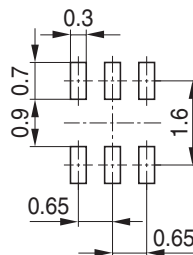
Reel $\varnothing 180 \text{ mm}$ = 3.000 Pieces/Reel
 Reel $\varnothing 330 \text{ mm}$ = 10.000 Pieces/Reel



Package Outline

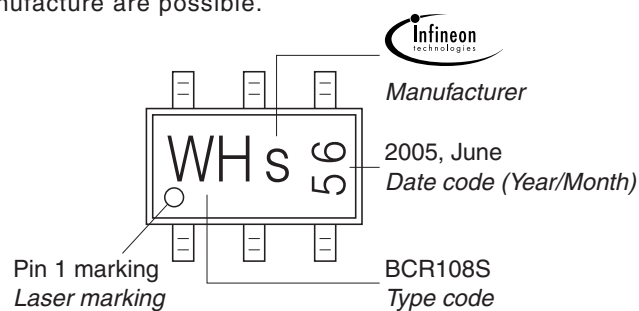


Foot Print



Marking Layout (Example)

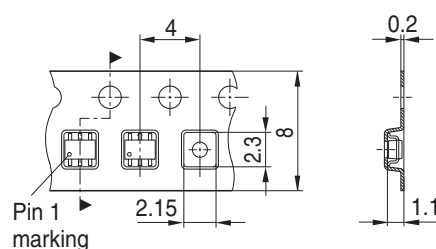
Small variations in positioning of
Date code, Type code and Manufacture are possible.



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.



The technical drawing shows two views of the M80-100 connector:

- Front View (Left):** Shows the top profile of the connector. Dimensions include a total width of 1.2 ± 0.05 , a mounting hole diameter of 0.2 ± 0.05 , a central pin labeled "3", and a rectangular body. Pin positions are indicated by dimension lines at the bottom.
- Side View (Right):** Shows the cross-section of the connector. It features a trapezoidal shape with a top width of 0.55 ± 0.04 , a base width of 0.15 ± 0.05 , and a height of 1.2 ± 0.05 . A fillet radius of $R0.2 \pm 0.05$ is shown at the base. The side face has a maximum angle of 10° MAX. and a thickness of 0.8 ± 0.05 .

Technical drawing of a mechanical part. The drawing shows a top view and a side view. The top view is a rectangle with a width of 0.4 and a height of 0.45. The side view is a rectangle with a width of 0.4 and a height of 1.05. The part has a central vertical slot.

Infineon
Manufacturer

1F S

Pin 1

BCR847BF
Type code

Technical drawing of a mechanical part with dimensions. The drawing shows a side view of a component with a total width of 4 and a total height of 8. The part features three circular features (holes or pins) spaced 1.35 apart. The distance from the left edge to the first feature is 1.35, and the distance between the first and second features is 1.35. The distance from the second feature to the right edge is 1.2. The distance from the top edge to the center of the first feature is 0.3. The distance from the top edge to the center of the second feature is 1.5. The distance from the top edge to the center of the third feature is 1.5. The distance from the bottom edge to the center of the first feature is 0.7. The distance from the bottom edge to the center of the second feature is 0.7. The distance from the bottom edge to the center of the third feature is 0.7. The distance from the right edge to the center of the third feature is 0.2. The distance from the right edge to the center of the second feature is 0.2. The distance from the right edge to the center of the first feature is 0.2. The distance from the right edge to the center of the first feature is 0.2.

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