

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceed the OCM data sheet.

Quality Overview

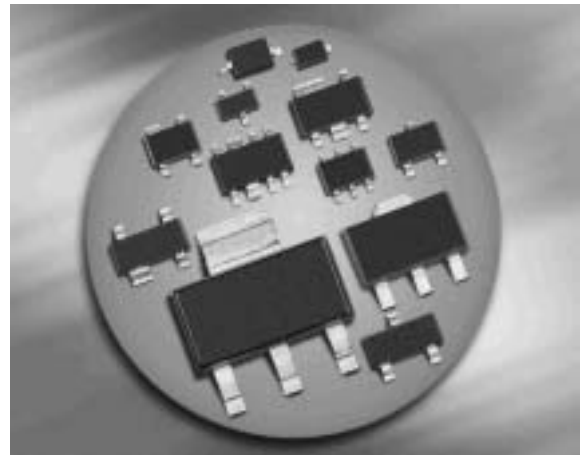
- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

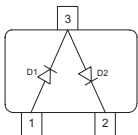
The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

Silicon Switching Diode

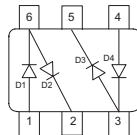
- For high-speed switching applications
- Series pair configuration
- BAV99S / U: For orientation in reel see package information below
- Pb-free (RoHS compliant) package¹⁾
- Qualified according AEC Q101



BAV99
BAV99W



BAV99S
BAV99U



Type	Package	Configuration	Marking
BAV99	SOT23	series	A7s
BAV99S	SOT363	dual series	A7s
BAV99U	SC74	dual series	A7s
BAV99W	SOT323	series	A7s

¹Pb-containing package may be available upon special request

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	80	V
Peak reverse voltage	V_{RM}	85	
Forward current	I_F	200	mA
Non-repetitive peak surge forward current	I_{FSM}		A
$t = 1 \mu\text{s}$		4.5	
$t = 1 \text{ ms}$		1	
$t = 1 \text{ s, single}$		0.5	
$t = 1 \text{ s, double}$		0.75	
Total power dissipation	P_{tot}		mW
BAV99, $T_S \leq 28^\circ\text{C}$		330	
BAV99S, $T_S \leq 85^\circ\text{C}$		250	
BAV99U, $T_S \leq 113^\circ\text{C}$		250	
BAV99W, $T_S \leq 110^\circ\text{C}$		250	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAV99		≤ 360	
BAV99S		≤ 260	
BAV99U		≤ 150	
BAV99W		≤ 160	

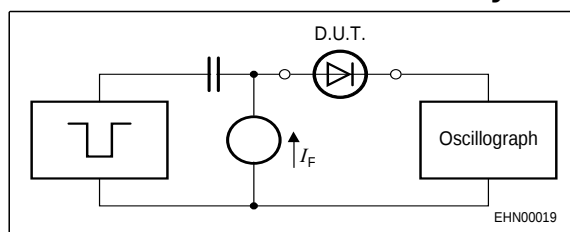
¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{\text{(BR)}} = 100\text{ }\mu\text{A}$	$V_{\text{(BR)}}$	85	-	-	V
Reverse current $V_{\text{R}} = 70\text{ V}$ $V_{\text{R}} = 25\text{ V}, T_{\text{A}} = 150\text{ }^{\circ}\text{C}$ $V_{\text{R}} = 70\text{ V}, T_{\text{A}} = 150\text{ }^{\circ}\text{C}$	I_{R}	- - -	- - -	0.15 30 50	μA
Forward voltage $I_{\text{F}} = 1\text{ mA}$ $I_{\text{F}} = 10\text{ mA}$ $I_{\text{F}} = 50\text{ mA}$ $I_{\text{F}} = 100\text{ mA}$ $I_{\text{F}} = 150\text{ mA}$	V_{F}	- - - - -	- - - - -	715 855 1000 1200 1250	mV

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance $V_R = 0 \text{ V}, f = 1 \text{ MHz}$	C_T	-	-	1.5	pF
Reverse recovery time $I_F = 10 \text{ mA}, I_R = 10 \text{ mA}$, measured at $I_R = 1\text{mA}$, $R_L = 100 \Omega$	t_{rr}	-	-	4	ns

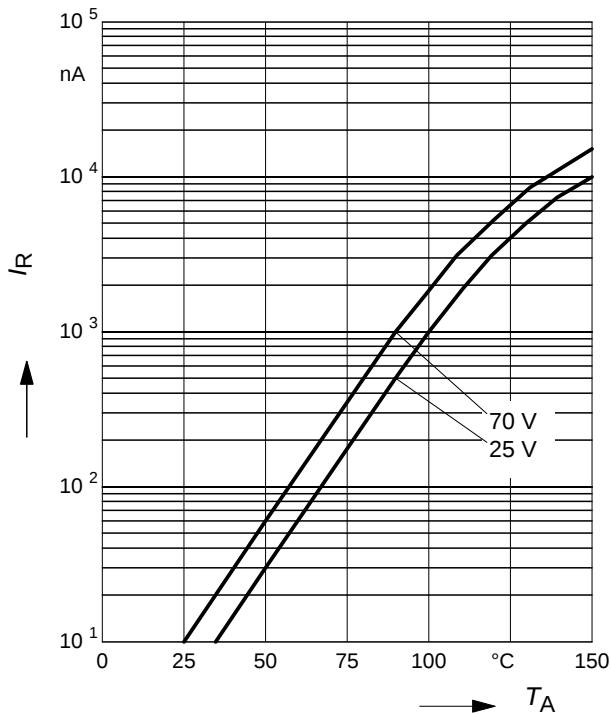
Test circuit for reverse recovery time


Pulse generator: $t_p = 100 \text{ ns}$, $D = 0.05$,
 $t_r = 0.6 \text{ ns}$, $R_i = 50 \Omega$

Oscilloscope: $R = 50$, $t_r = 0.35 \text{ ns}$
 $C \leq 1 \text{ pF}$

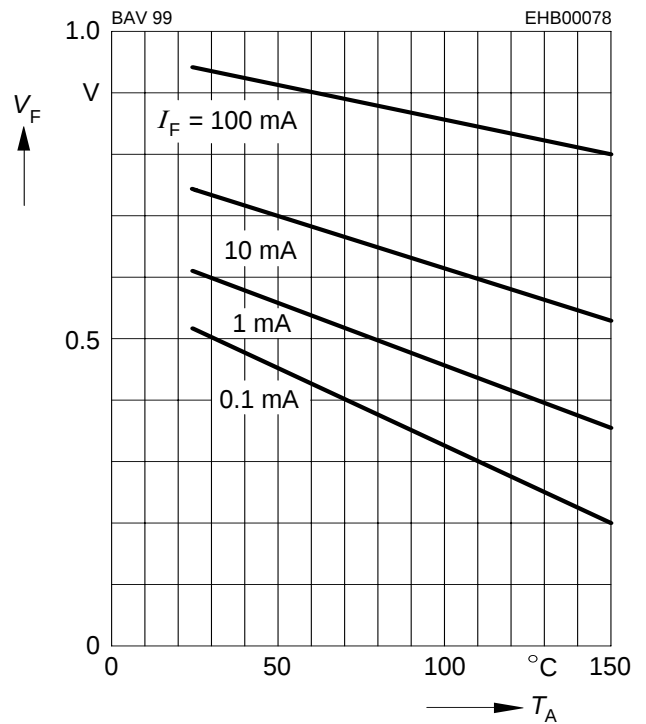
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



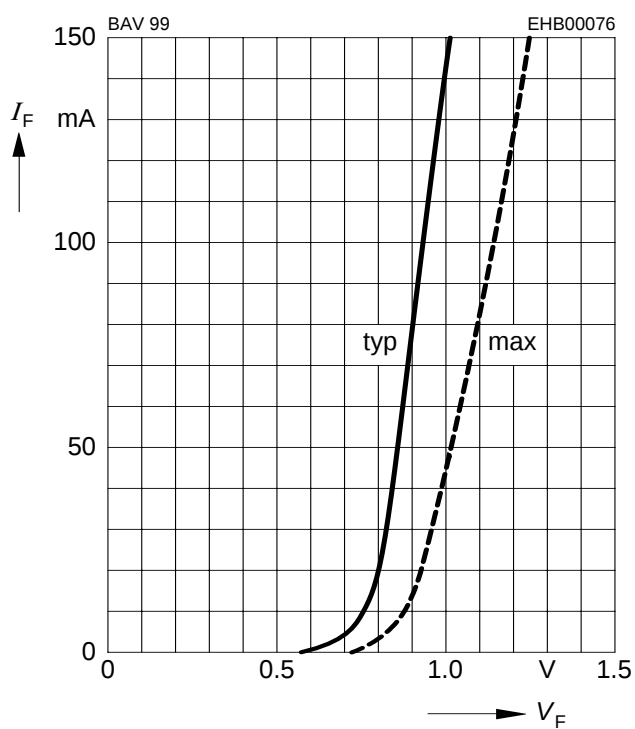
Forward Voltage $V_F = f(T_A)$

$I_F = \text{Parameter}$



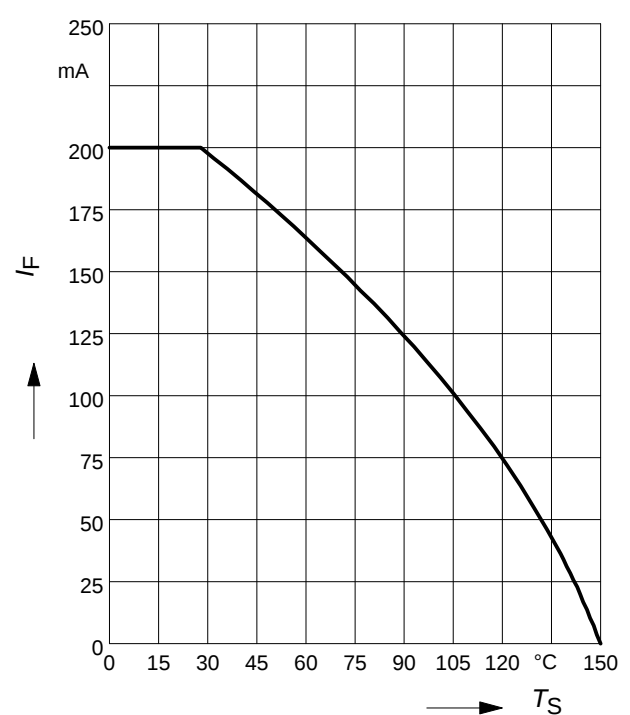
Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$



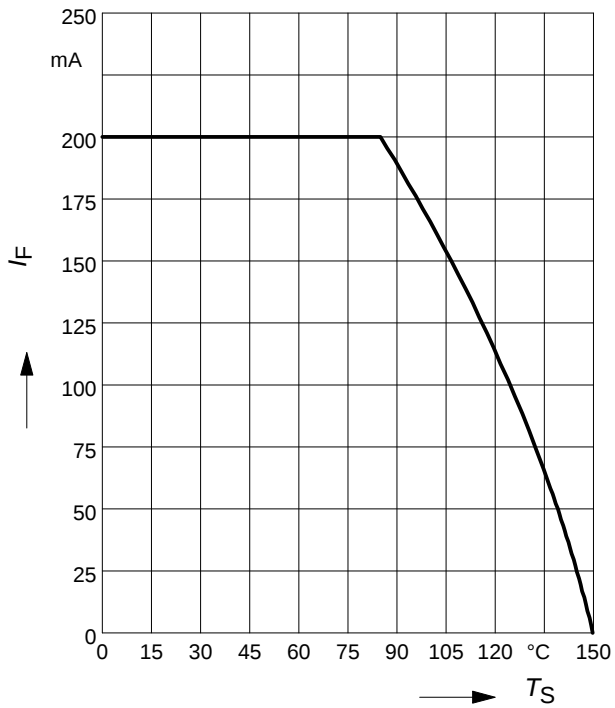
Forward current $I_F = f(T_S)$

BAV99



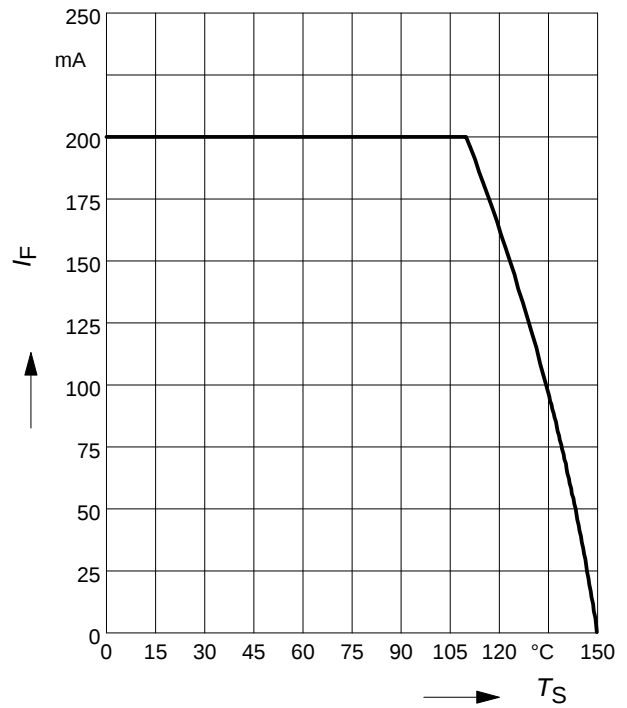
Forward current $I_F = f(T_S)$

BAV99S



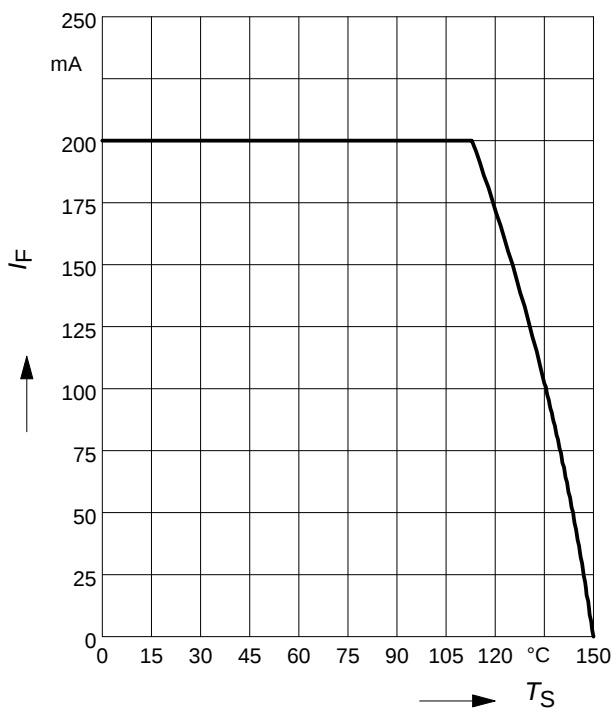
Forward current $I_F = f(T_S)$

BAV99U



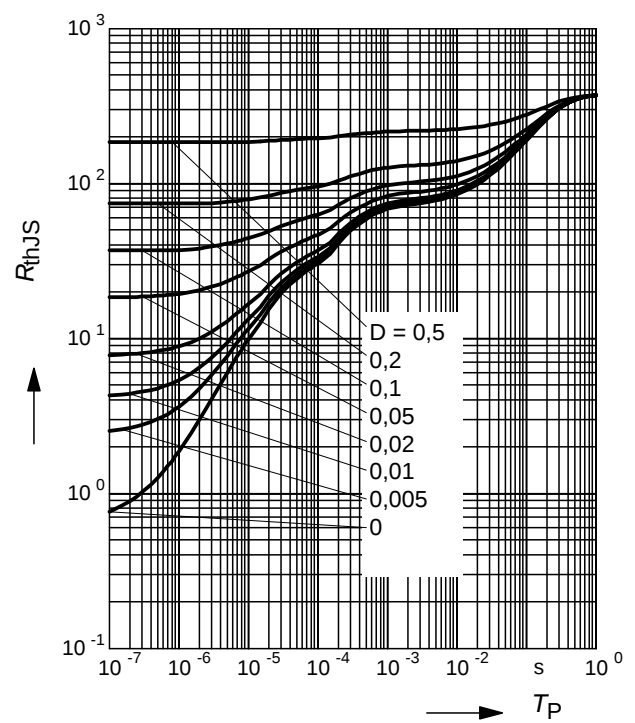
Forward current $I_F = f(T_S)$

BAV99W



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

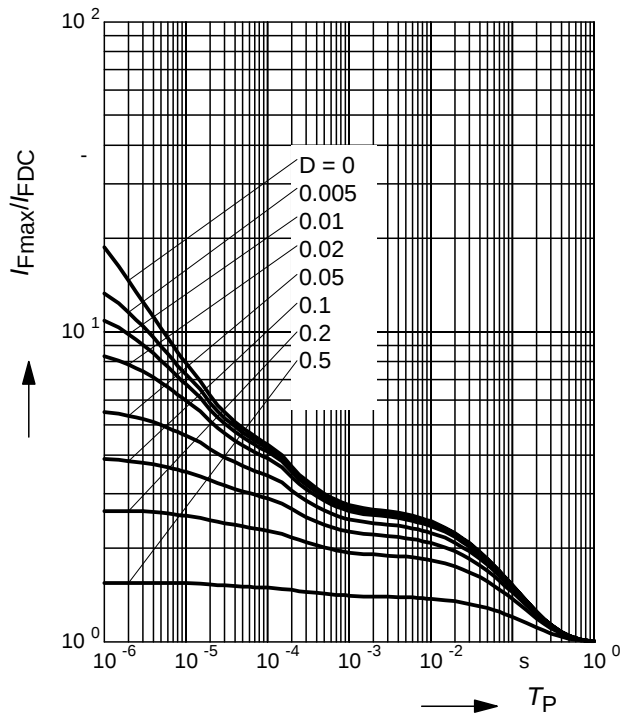
BAV99



Permissible Pulse Load

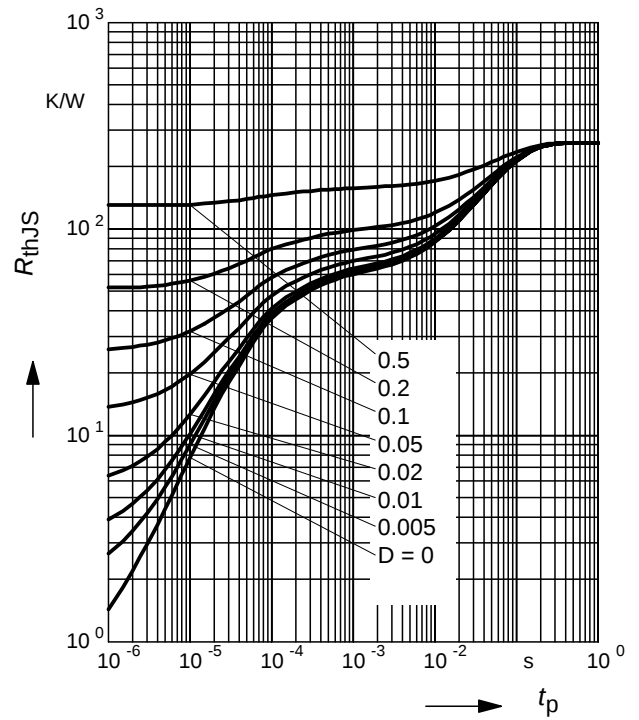
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAV99



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

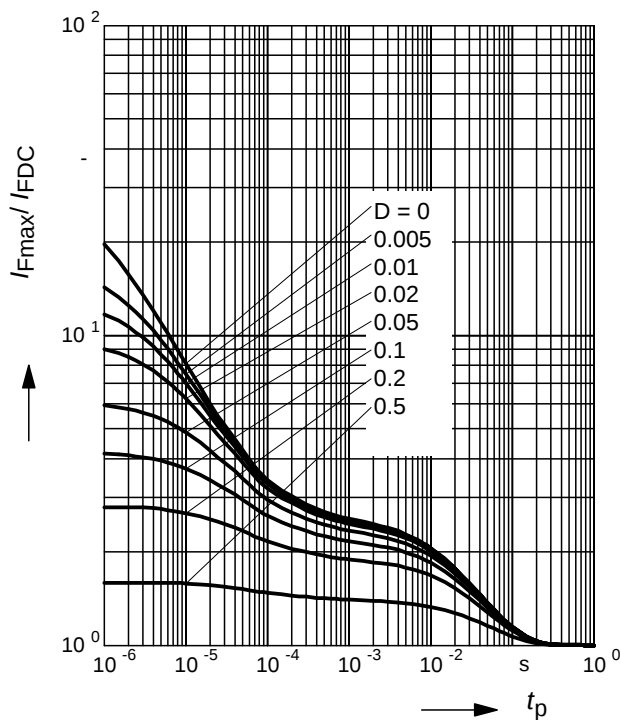
BAV99S



Permissible Pulse Load

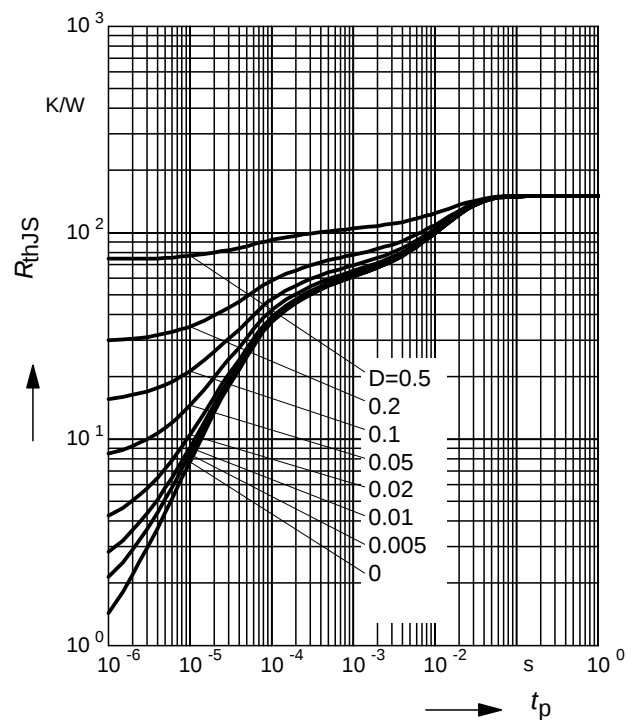
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAV99S



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

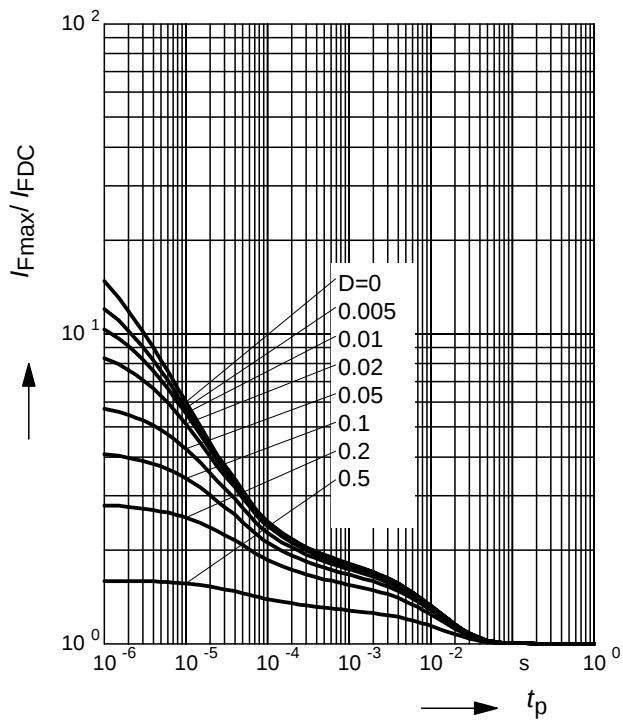
BAV99U



Permissible Pulse Load

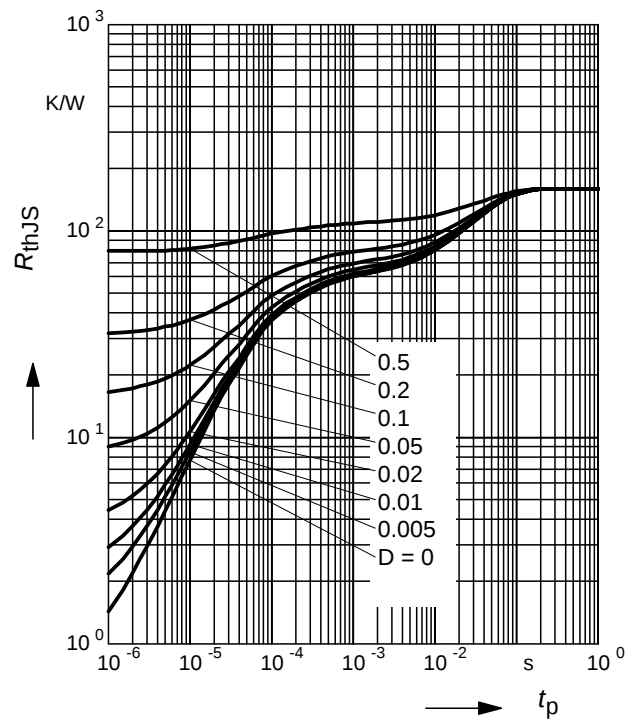
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAV99U



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

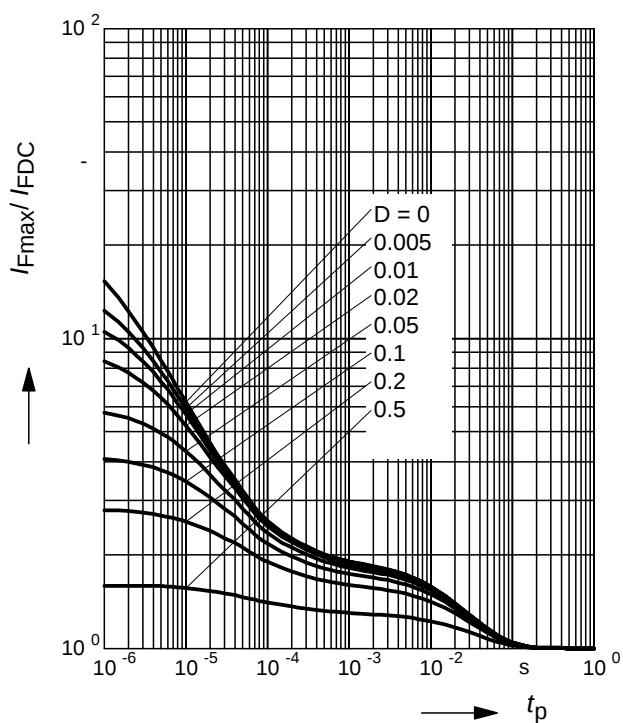
BAV99W



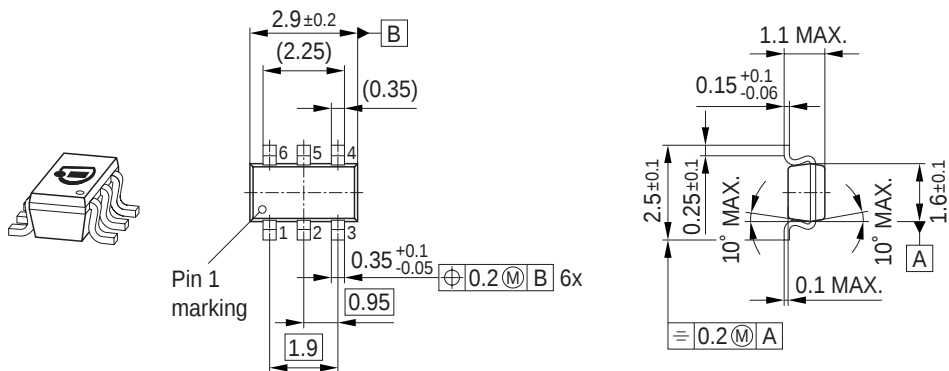
Permissible Pulse Load

$$I_{Fmax}/I_{FDC} = f(t_p)$$

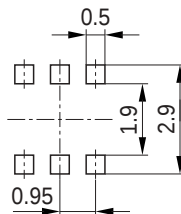
BAV99W



Package Outline

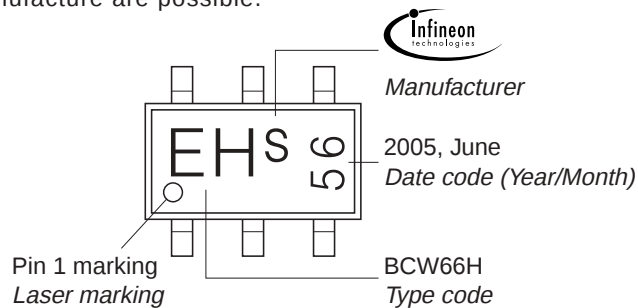


Foot Print



Marking Layout (Example)

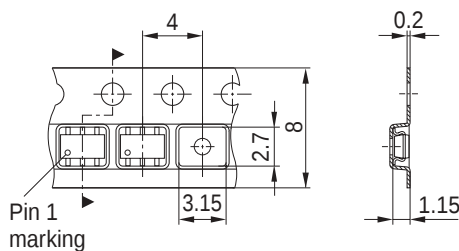
Small variations in positioning of Date code, Type code and Manufacture are possible.



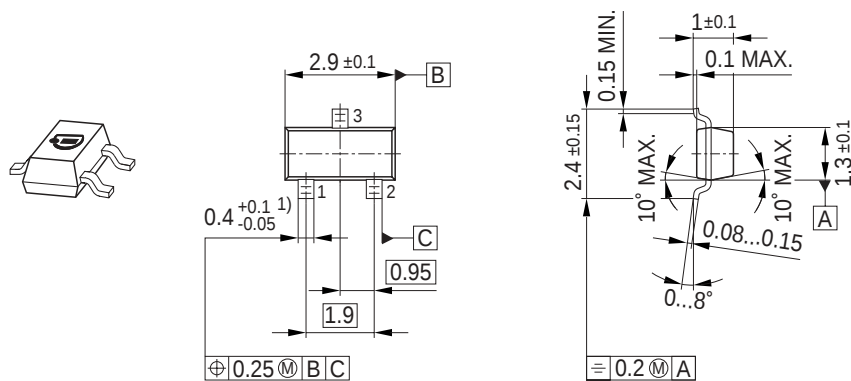
Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.

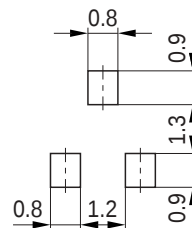


Package Outline

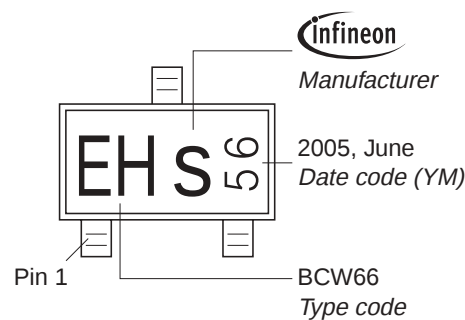


1) Lead width can be 0.6 max. in dambar area

Foot Print

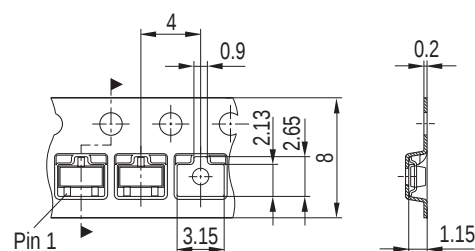


Marking Layout (Example)

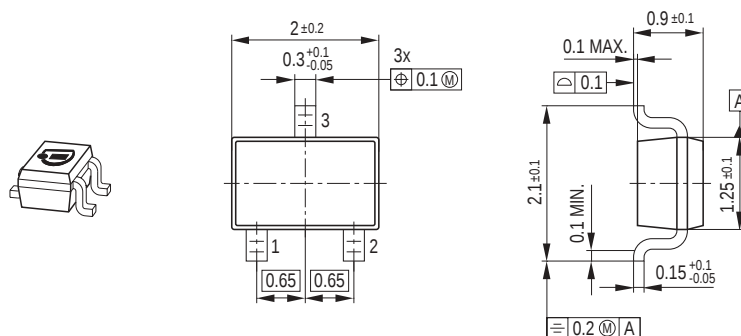


Standard Packing

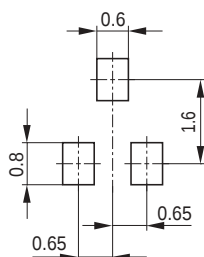
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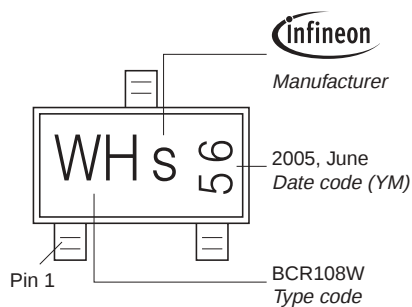
Package Outline



Foot Print

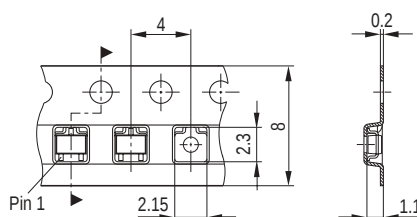


Marking Layout (Example)

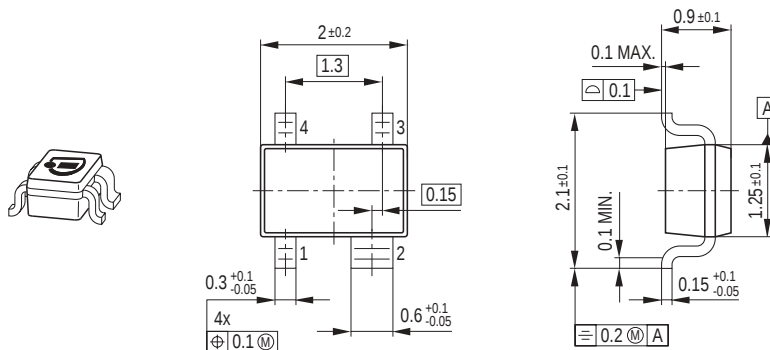


Standard Packing

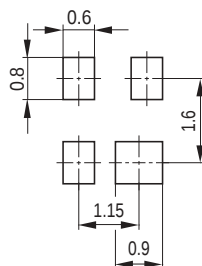
Reel $\varnothing 180$ mm = 3.000 Pieces/Reel
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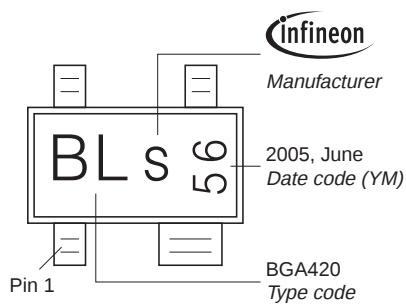
Package Outline



Foot Print

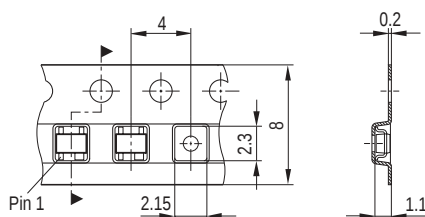


Marking Layout (Example)

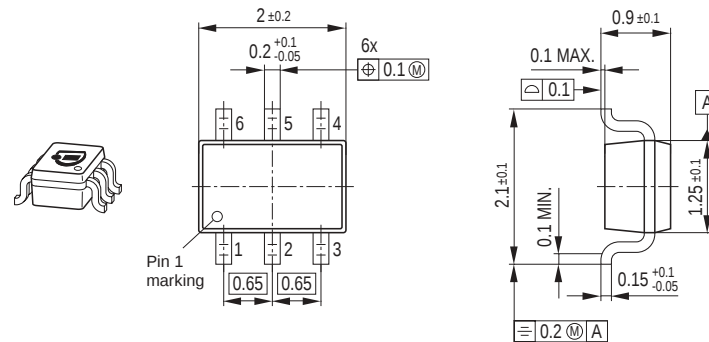


Standard Packing

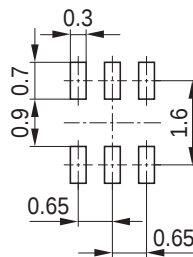
Reel $\varnothing 180 \text{ mm}$ = 3.000 Pieces/Reel
 Reel $\varnothing 330 \text{ mm}$ = 10.000 Pieces/Reel



Package Outline

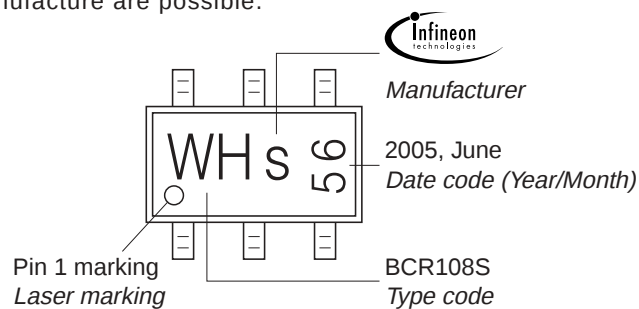


Foot Print



Marking Layout (Example)

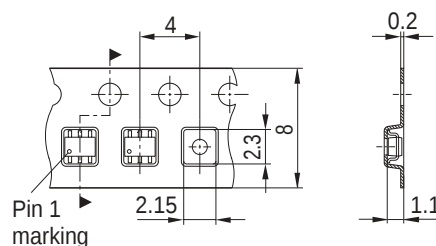
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For symmetric types no defined Pin 1 orientation in reel.



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Information

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Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

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