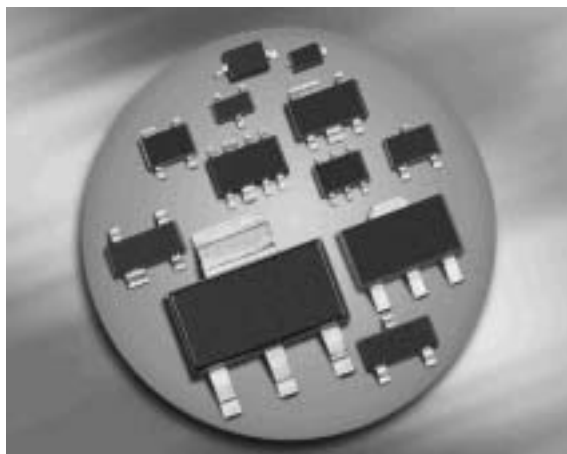
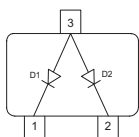


Silicon Switching Diode

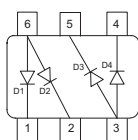
- For high-speed switching applications
- Common anode configuration
- BAW56S / U: For orientation in reel see package information below



BAW56
BAW56T
BAW56W



BAW56S
BAW56U



Type	Package	Configuration	Marking
BAW56	SOT23	common anode	A1s
BAW56S	SOT363	double common anode	A1s
BAW56T	SC75	common anode	A1
BAW56U	SC74	double common anode	A1s
BAW56W	SOT323	common anode	A1s

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
BAW56, $T_S \leq 28^\circ\text{C}$		330	
BAW56S, $T_S \leq 85^\circ\text{C}$		250	
BAW56T, $T_S \leq 104^\circ\text{C}$		250	
BAW56U, $T_S \leq 90^\circ\text{C}$		250	
BAW56W, $T_S \leq 103^\circ\text{C}$		250	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ... 150	

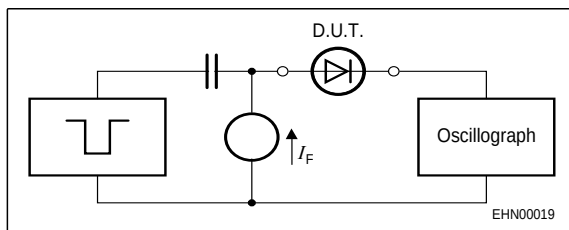
Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAW56		360	
BAW56S		260	
BAW56T		185	
BAW56U		240	
BAW56W		190	

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 $I_{(BR)} = 100 \mu A$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 70 V$ $V_R = 25 V, T_A = 150 \text{ }^{\circ}C$ $V_R = 70 V, T_A = 150 \text{ }^{\circ}C$	I_R	- - -	- - -	0.15 30 50	μA
Forward voltage $I_F = 1 mA$ $I_F = 10 mA$ $I_F = 50 mA$ $I_F = 100 mA$ $I_F = 150 mA$	V_F	- - - - -	- - - - -	715 855 1000 1200 1250	mV
AC Characteristics					
Diode capacitance $V_R = 0 V, f = 1 MHz$	C_T	-	-	2	pF
Reverse recovery time $I_F = 10 mA, I_R = 10 mA$, measured at $I_R = 1mA$, $R_L = 100 \Omega$	t_{rr}	-	-	4	ns

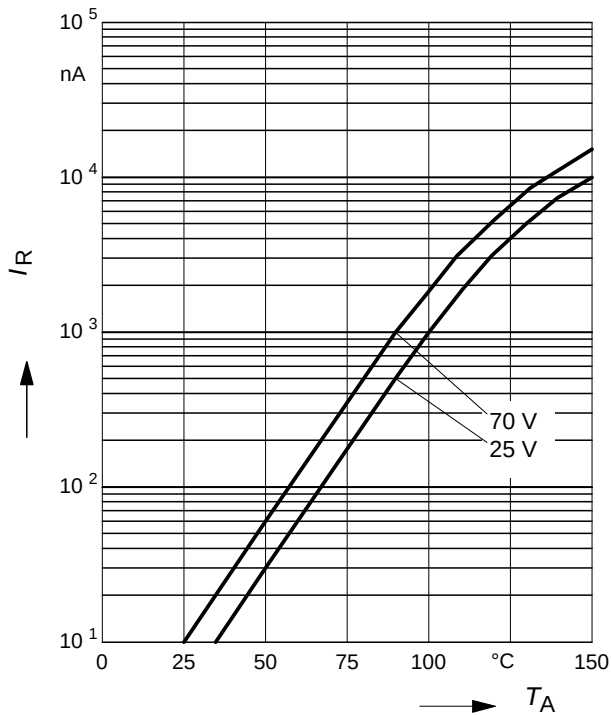
Test circuit for reverse recovery time


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

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

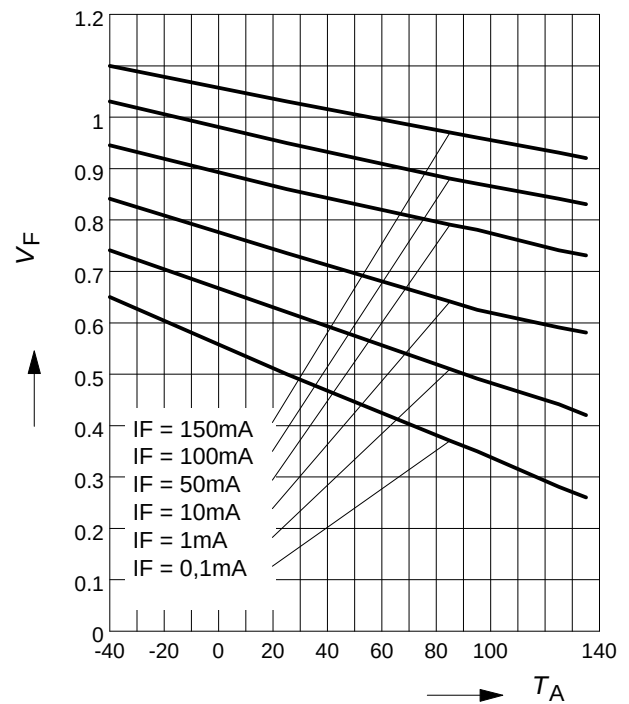
Reverse current $I_R = f(T_A)$

V_R = Parameter



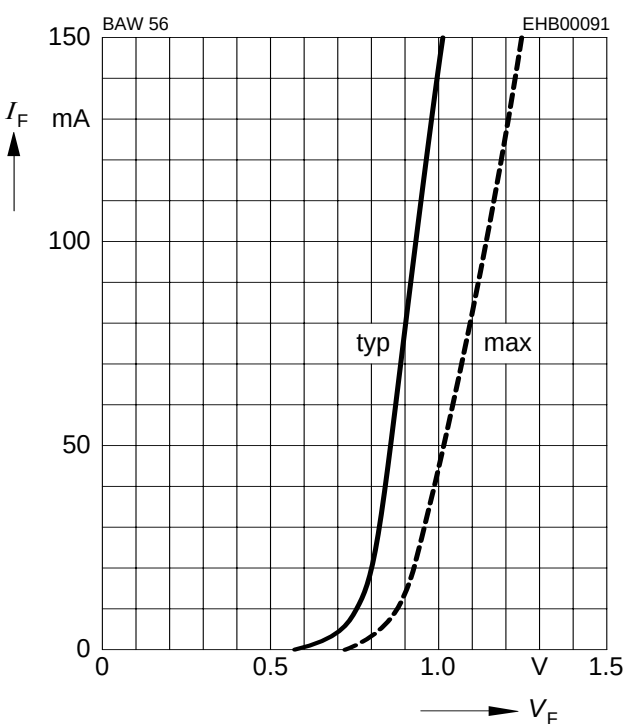
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



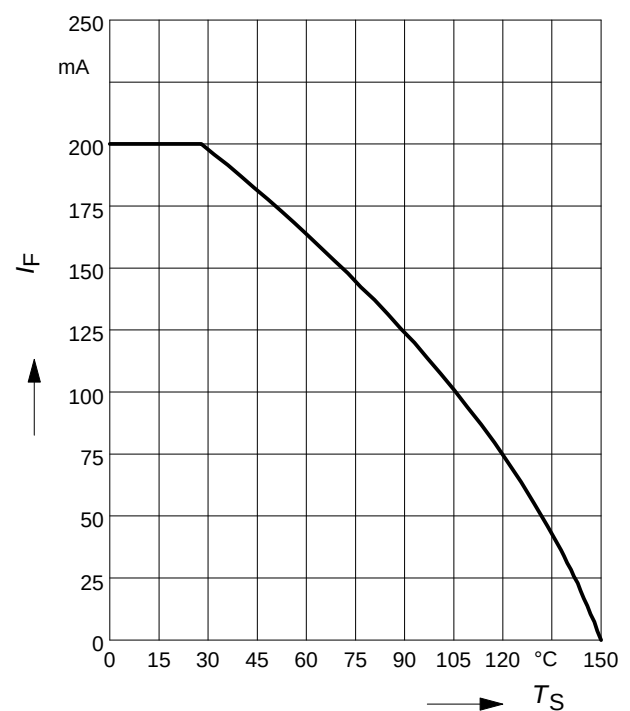
Forward current $I_F = f(V_F)$

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



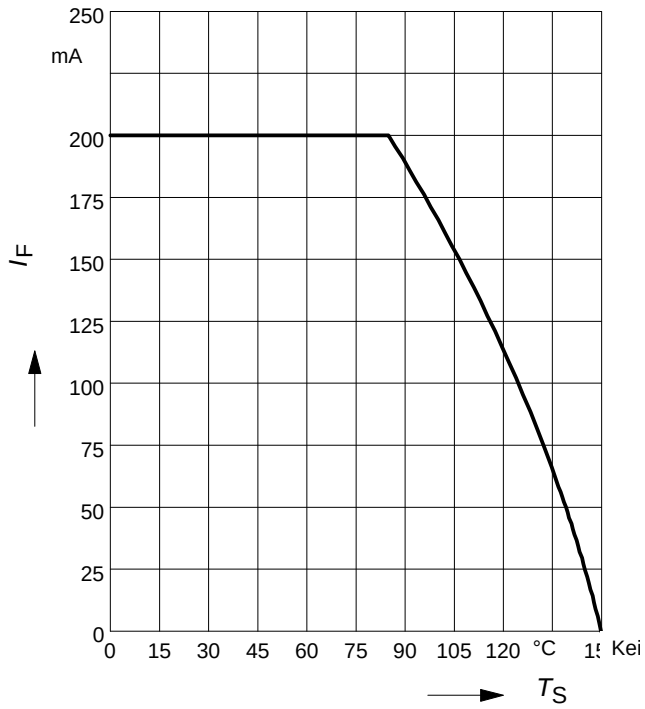
Forward current $I_F = f(T_S)$

BAW56



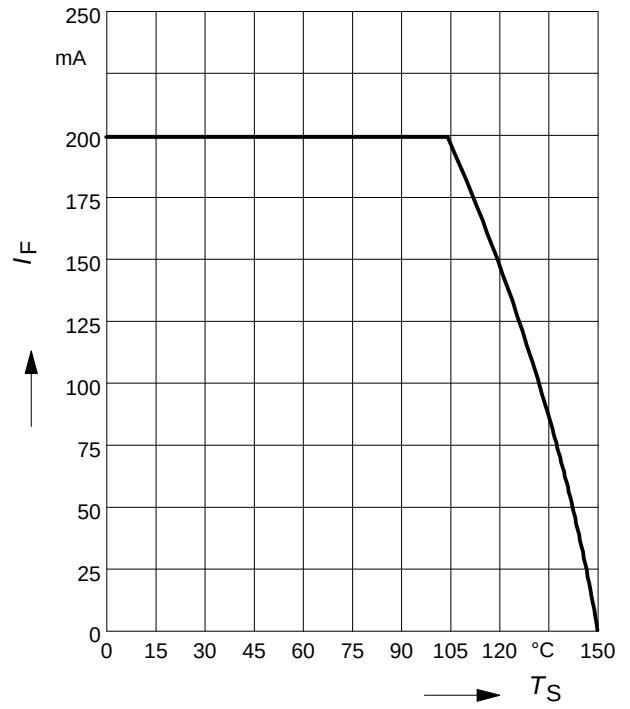
Forward current $I_F = f(T_S)$

BAW56S



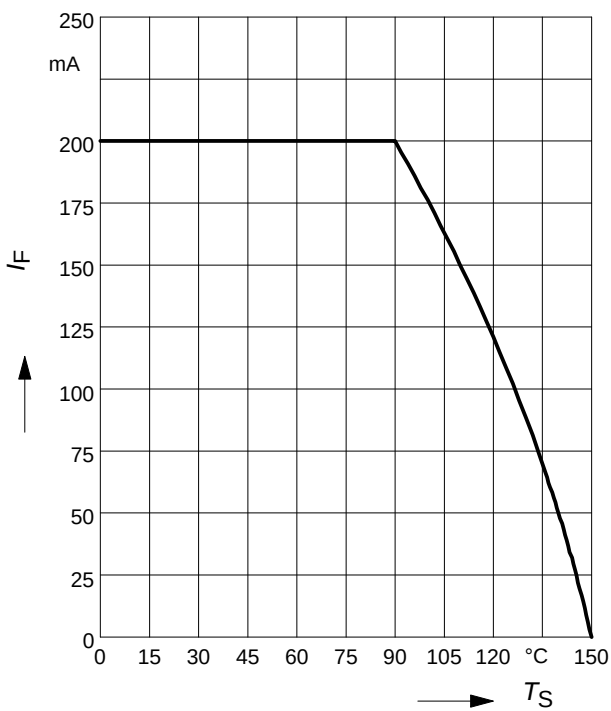
Forward current $I_F = f(T_S)$

BAW56T



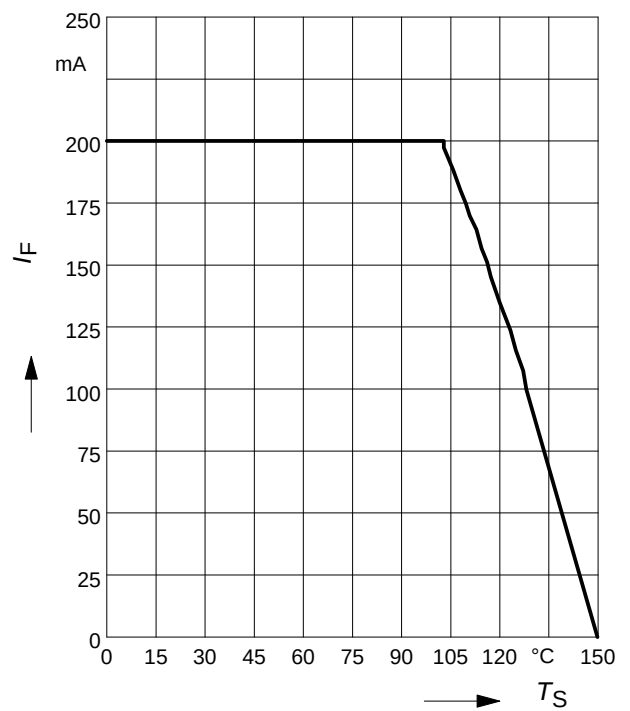
Forward current $I_F = f(T_S)$

BAW56U



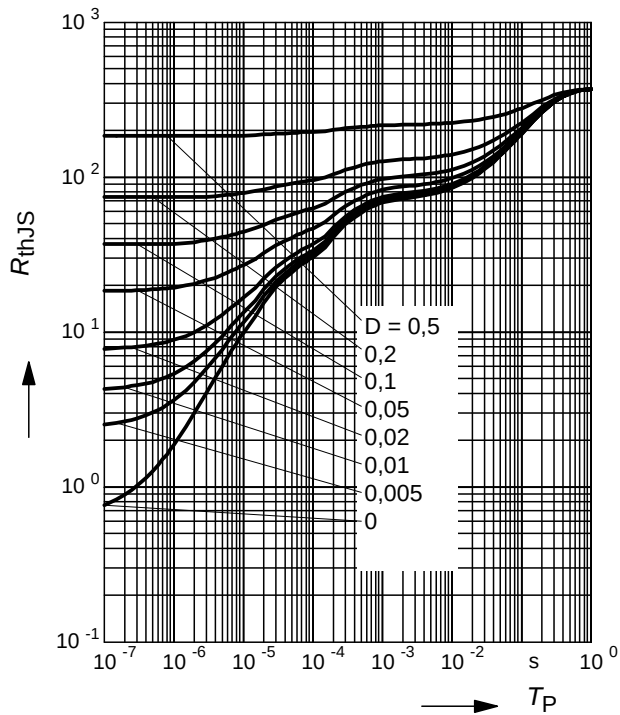
Forward current $I_F = f(T_S)$

BAW56W



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

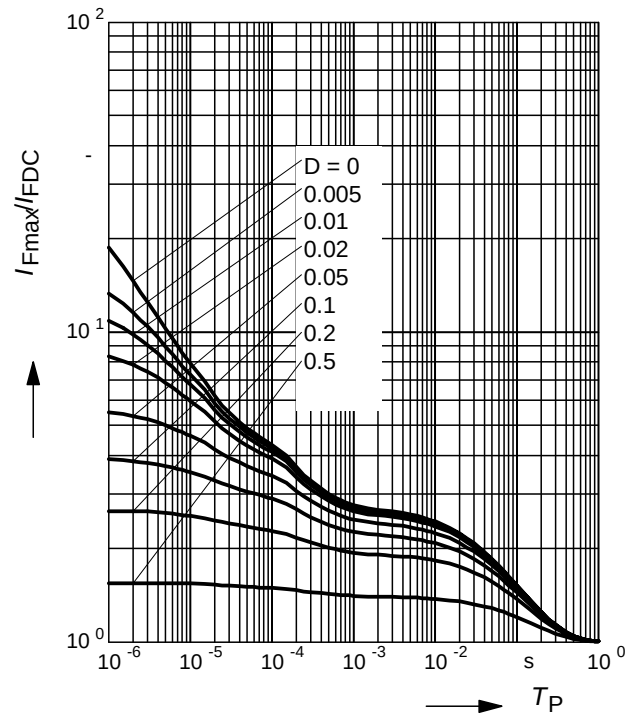
BAW56



Permissible Pulse Load

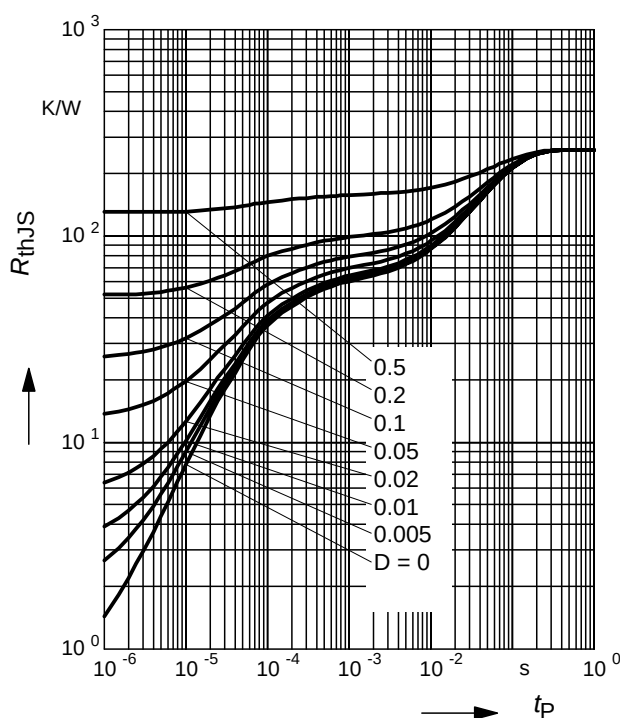
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56



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

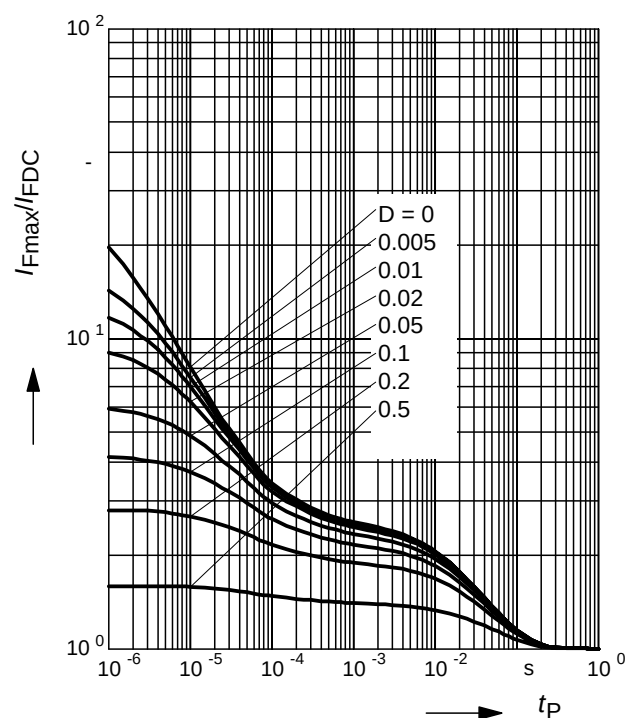
BAW56S



Permissible Pulse Load

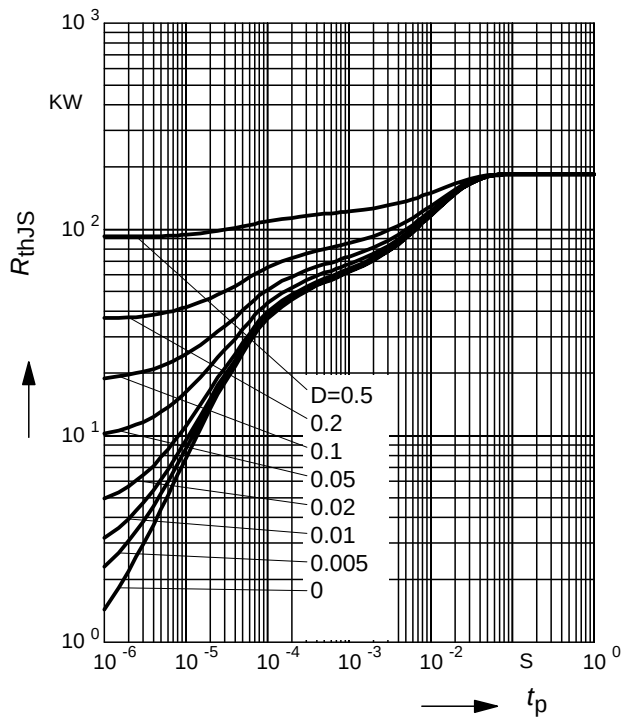
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56S



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

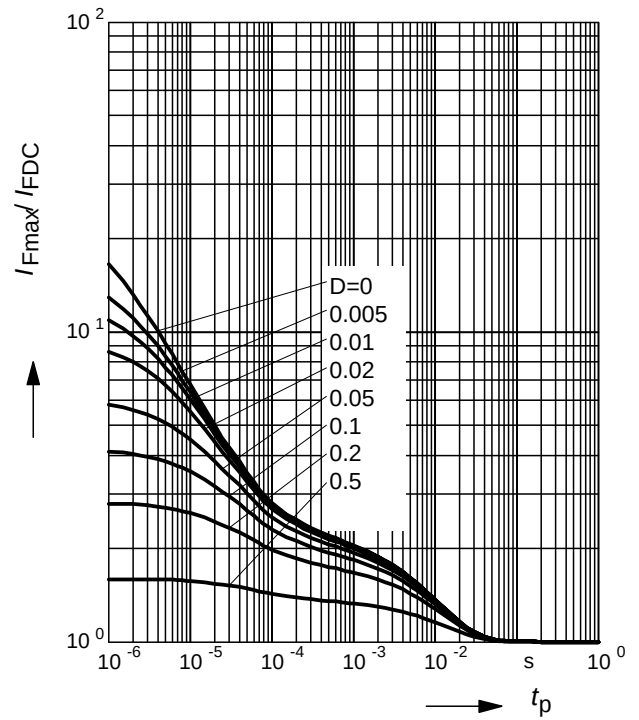
BAW56T



Permissible Pulse Load

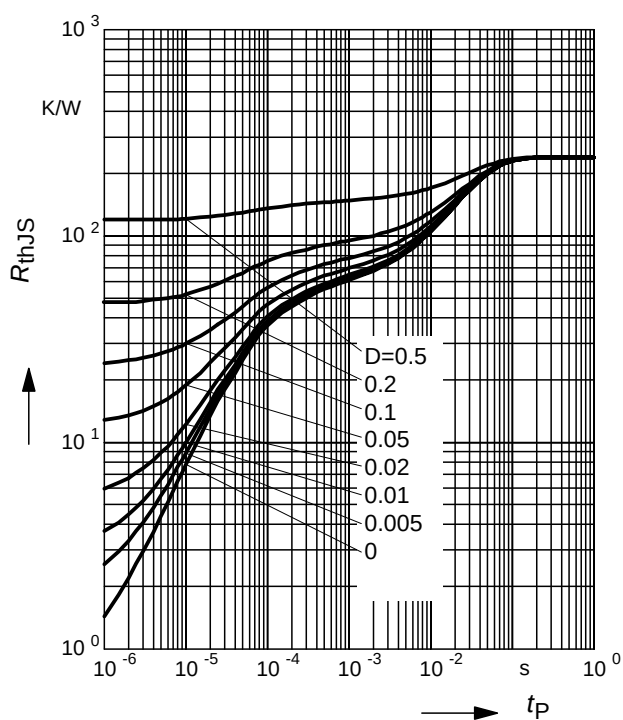
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56T



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

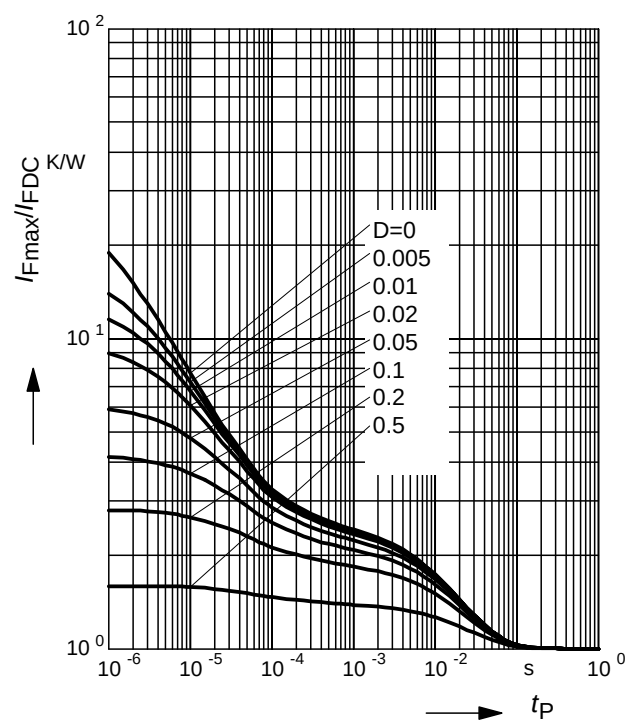
BAW56U



Permissible Pulse Load

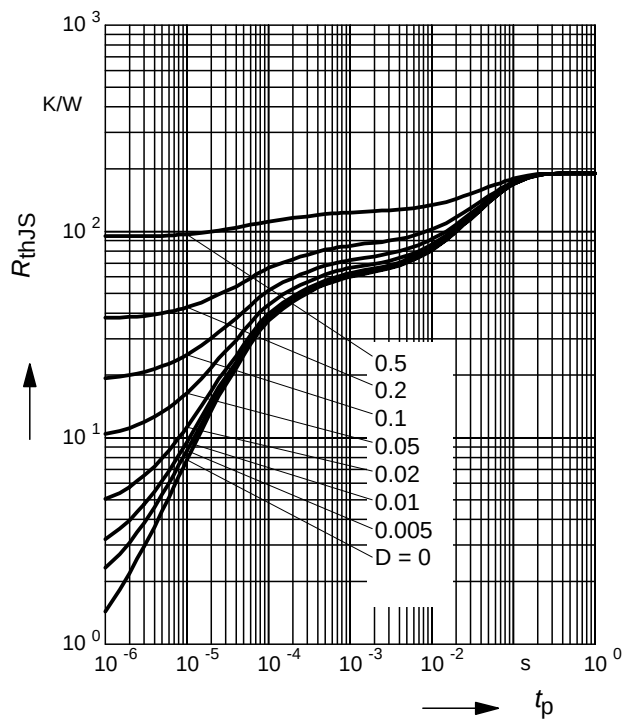
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAW56U



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

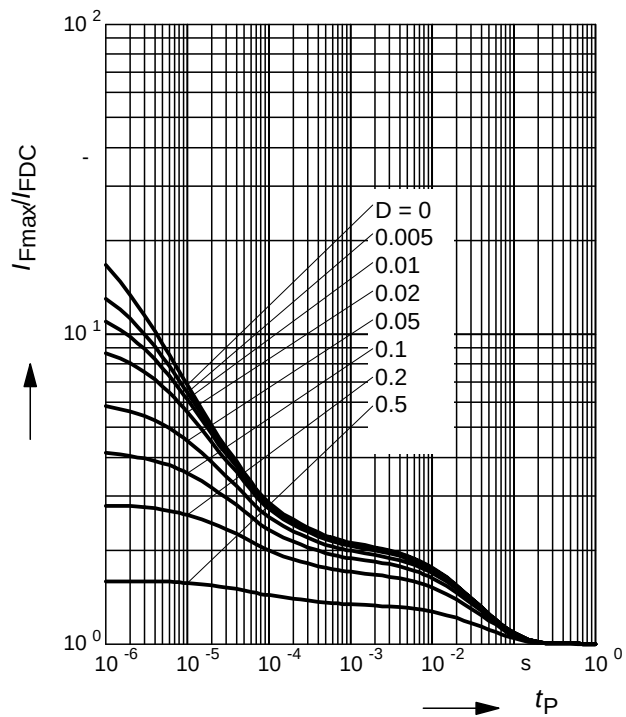
BAW56W



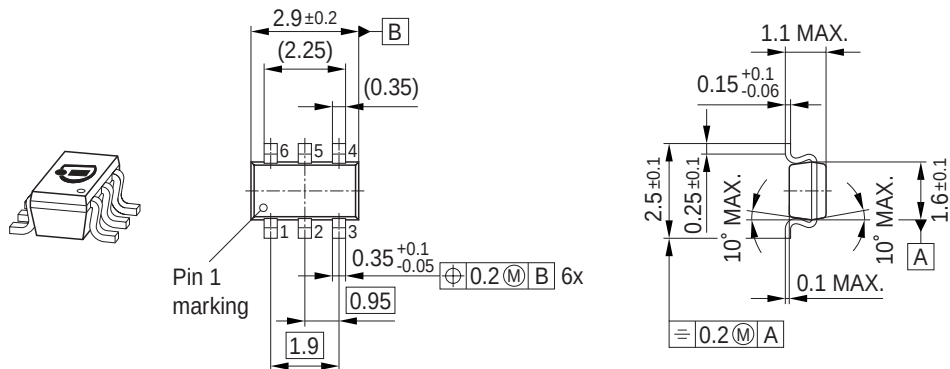
Permissible Pulse Load

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

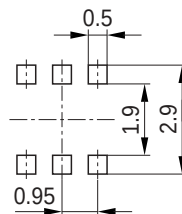
BAW56W



Package Outline

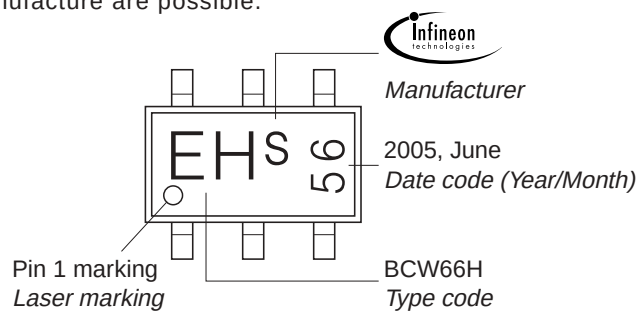


Foot Print



Marking Layout (Example)

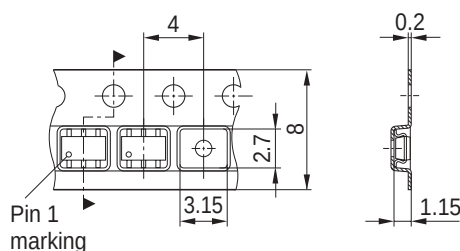
Small variations in positioning of Date code, Type code and Manufacture are possible.



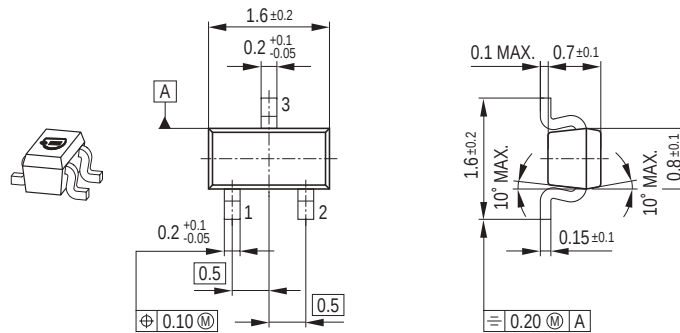
Standard Packing

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

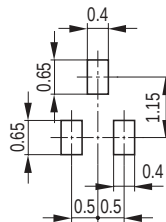
For symmetric types no defined Pin 1 orientation in reel.



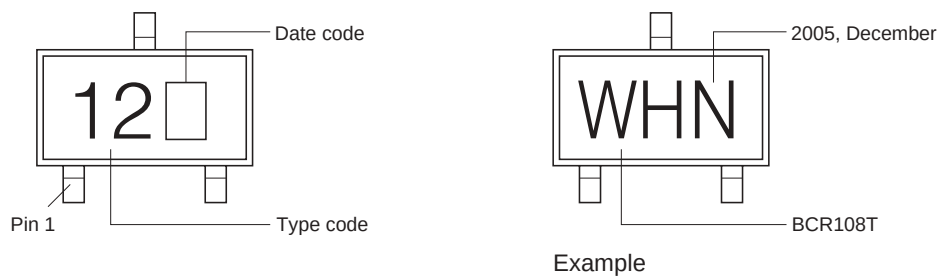
Package Outline



Foot Print

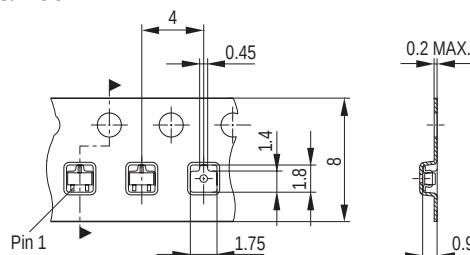


Marking Layout



Standard Packing

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

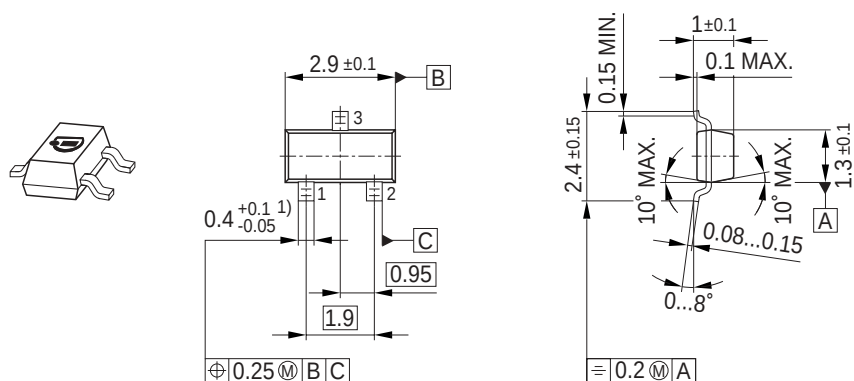


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75¹⁾) CES-Code

Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	j	y	J	Y
10	k	z	K	Z	k	z	K	Z	k	z	K	Z
11	l	2	L	4	l	2	L	4	l	2	L	4
12	n	3	N	5	n	3	N	5	n	3	N	5

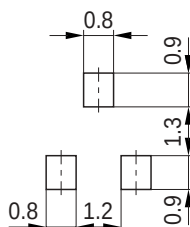
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

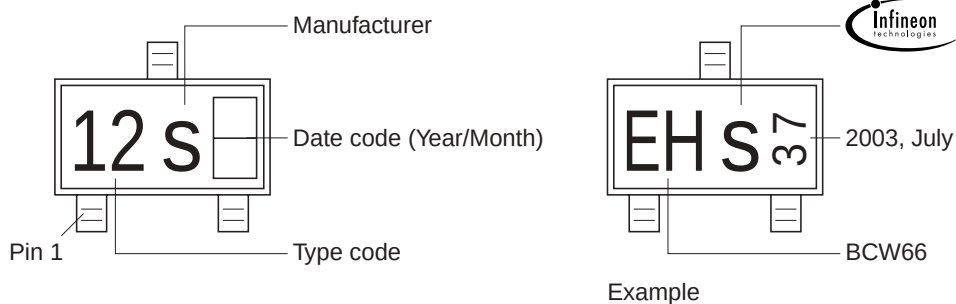


1) Lead width can be 0.6 max. in dambar area

Foot Print

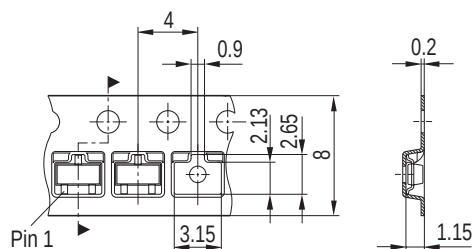


Marking Layout

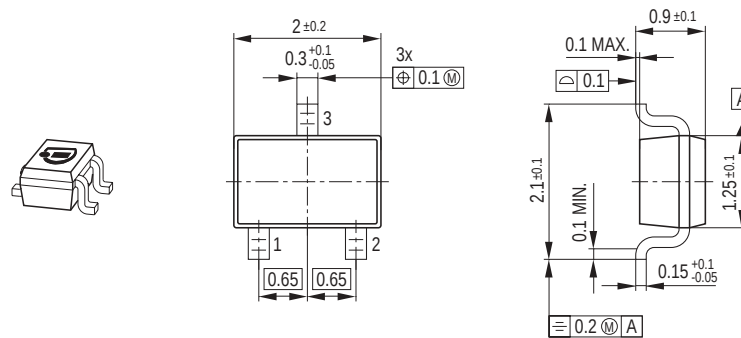


Standard Packing

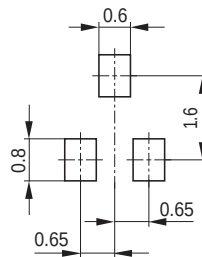
Reel $\phi 180$ mm = 3.000 Pieces/Reel
 Reel $\phi 330$ mm = 10.000 Pieces/Reel



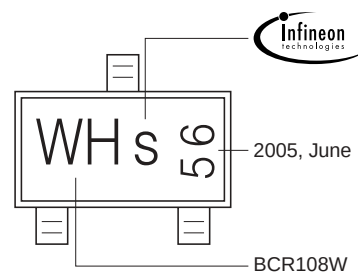
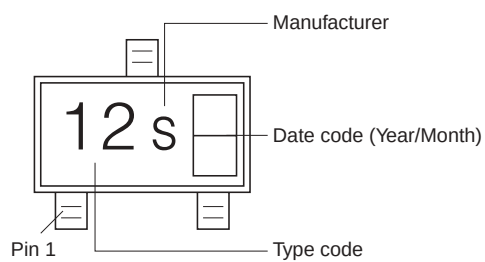
Package Outline



Foot Print



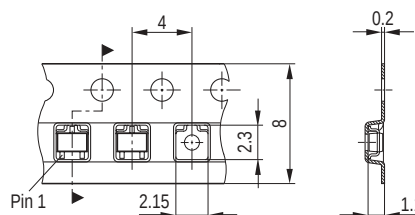
Marking Layout



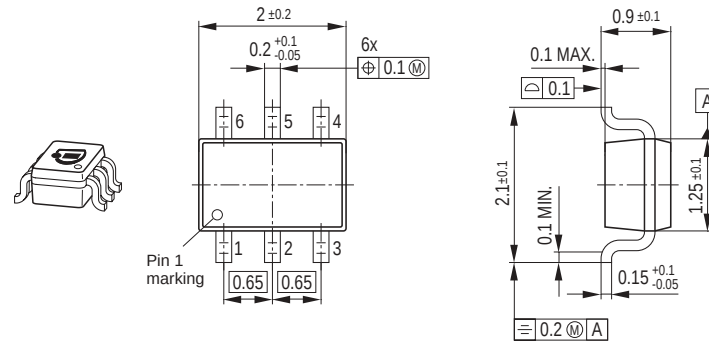
Example

Standard Packing

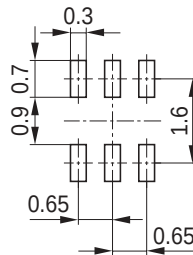
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



Package Outline

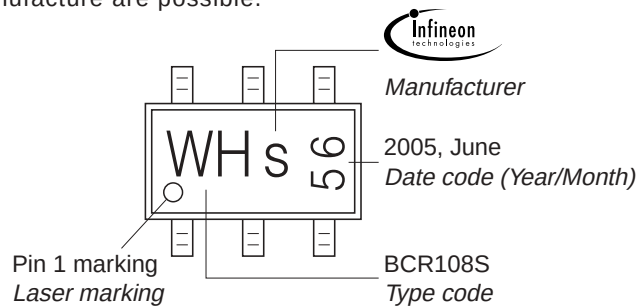


Foot Print



Marking Layout (Example)

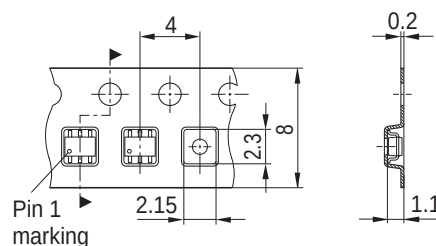
Small variations in positioning of
Date code, Type code and Manufacture are possible.



Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.



Published by Infineon Technologies AG,
St.-Martin-Strasse 53,
81669 München
© Infineon Technologies AG 2005.
All Rights Reserved.

Attention please!

The information herein is given to describe certain components and shall not be considered as a guarantee of characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

Information

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

Warnings

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

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.