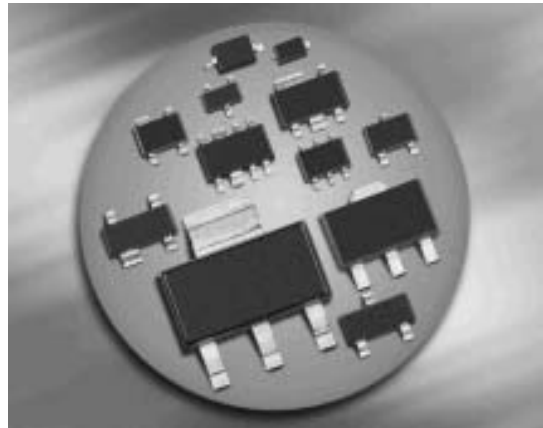
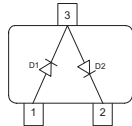
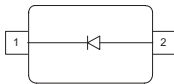


**Silicon PIN Diode**

- For low loss RF switches and attenuators
- Very low capacitance at zero volt reverse bias at frequencies above 1 GHz (typ. 0.25 pF)
- Low forward resistance (typ. 1.5  $\Omega$  @ 5mA)
- Low harmonics
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101


**BAR67-02V**
**BAR67-04**


Type	Package	Configuration	$L_S$ (nH)	Marking
BAR67-02V	SC79	single	0.6	T
BAR67-04	SOT23	series	1.8	PMs

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	$V_R$	150	V
Forward current	$I_F$	200	mA
Total power dissipation	$P_{tot}$		mW
$T_S \leq 118^\circ\text{C}$ , BAR67-02V		250	
$T_S \leq 25^\circ\text{C}$ , BAR67-04		250	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Operating temperature range	$T_{op}$	-55 ... 125	
Storage temperature	$T_{stg}$	-55 ... 150	

**Thermal Resistance**

Parameter	Symbol	Value	Unit
Junction - soldering point <sup>2)</sup>	$R_{thJS}$		K/W
BAR67-02V		$\leq 115$	
BAR67-04		$\leq 290$	

<sup>1</sup>Pb-containing package may be available upon special request

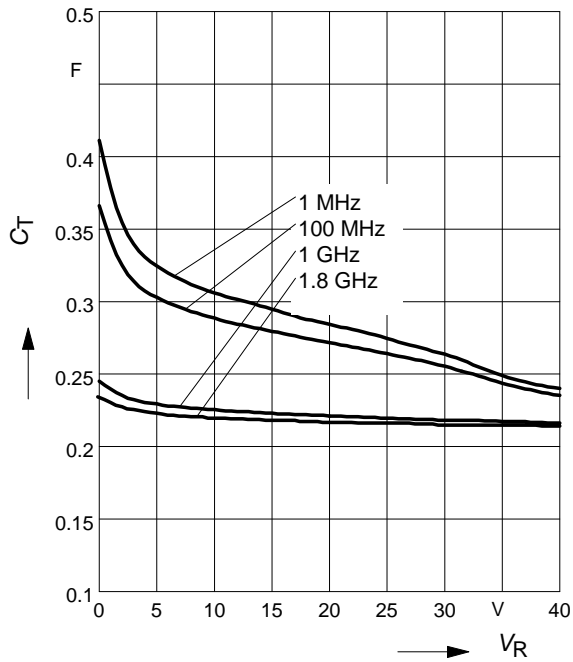
<sup>2</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
<b>DC Characteristics</b>					
Breakdown voltage $I_{(BR)} = 5 \mu\text{A}$	$V_{(BR)}$	150	-	-	V
Reverse current $V_R = 100 \text{ V}$	$I_R$	-	-	20	nA
Forward voltage $I_F = 50 \text{ mA}$	$V_F$	-	0.95	1.2	V
<b>AC Characteristics</b>					
Diode capacitance $V_R = 5 \text{ V}, f = 1 \text{ MHz}$ $V_R = 0 \text{ V}, f = 100 \text{ MHz}$ $V_R = 0 \text{ V}, f = 1 \text{ GHz}$ $V_R = 0 \text{ V}, f = 1.8 \text{ GHz}$	$C_T$	-	0.35	0.55	pF
Reverse parallel resistance $V_R = 0 \text{ V}, f = 100 \text{ MHz}$ $V_R = 0 \text{ V}, f = 1 \text{ GHz}$ $V_R = 0 \text{ V}, f = 1.8 \text{ GHz}$	$R_P$	-	25	-	k $\Omega$
Forward resistance $I_F = 5 \text{ mA}, f = 100 \text{ MHz}$ $I_F = 10 \text{ mA}, f = 100 \text{ MHz}$	$r_f$	-	1.5	1.8	$\Omega$
Charge carrier life time $I_F = 10 \text{ mA}, I_R = 6 \text{ mA}$ , measured at $I_R = 3 \text{ mA}$ , $R_L = 100 \Omega$	$\tau_{rr}$	-	700	-	ns
I-region width	$W_I$	-	13	-	$\mu\text{m}$

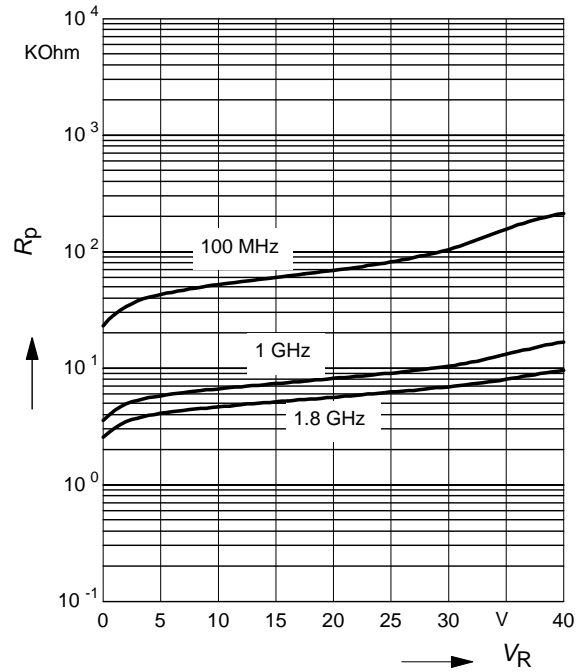
**Diode capacitance  $C_T = f(V_R)$**

$f =$  Parameter



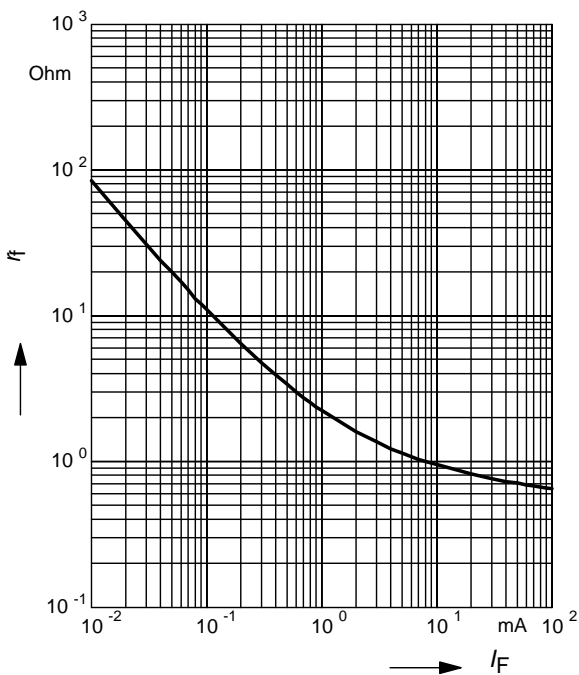
**Reverse parallel resistance  $R_p = f(V_R)$**

$f =$  Parameter



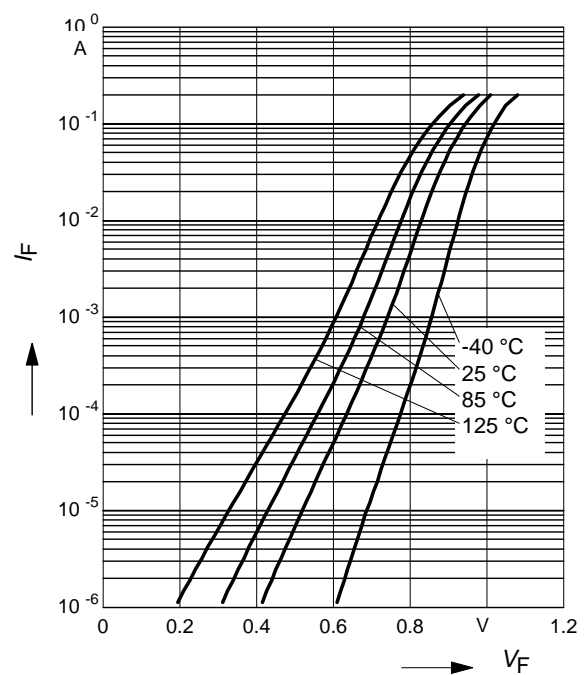
**Forward resistance  $r_f = f(I_F)$**

$f = 100\text{MHz}$



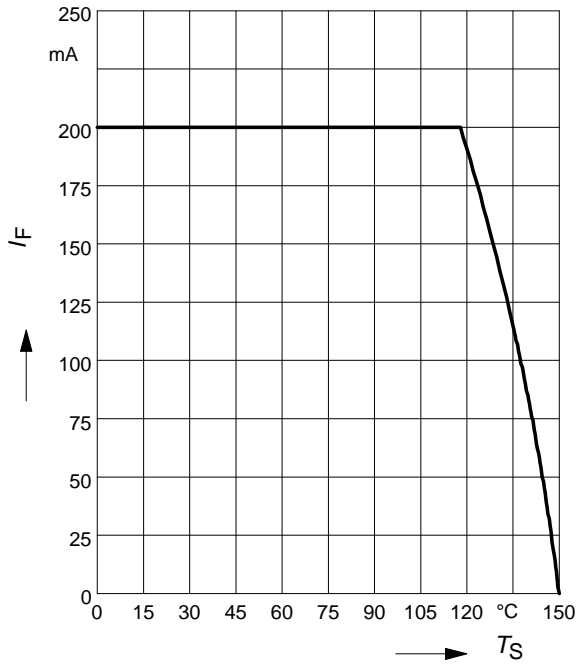
**Forward current  $I_F = f(V_F)$**

$T_A =$  Parameter



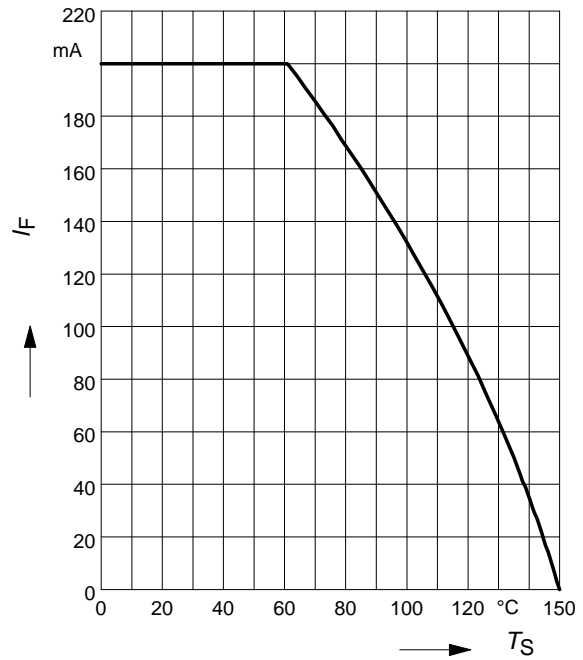
**Forward current  $I_F = f(T_S)$**

BAR67-02V



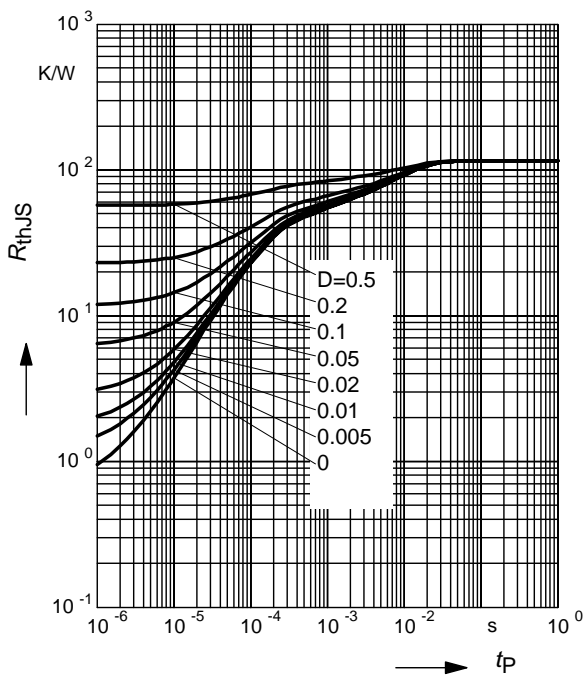
**Forward current  $I_F = f(T_S)$**

BAR67-04



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

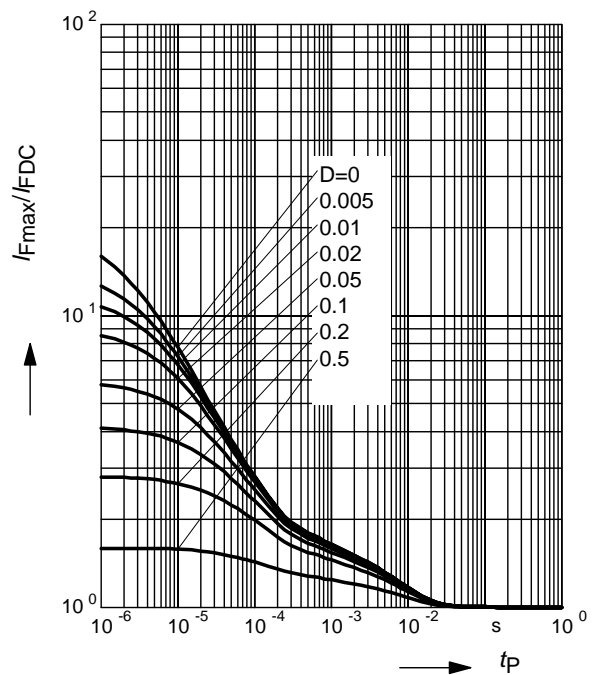
BAR67-02V



**Permissible Pulse Load**

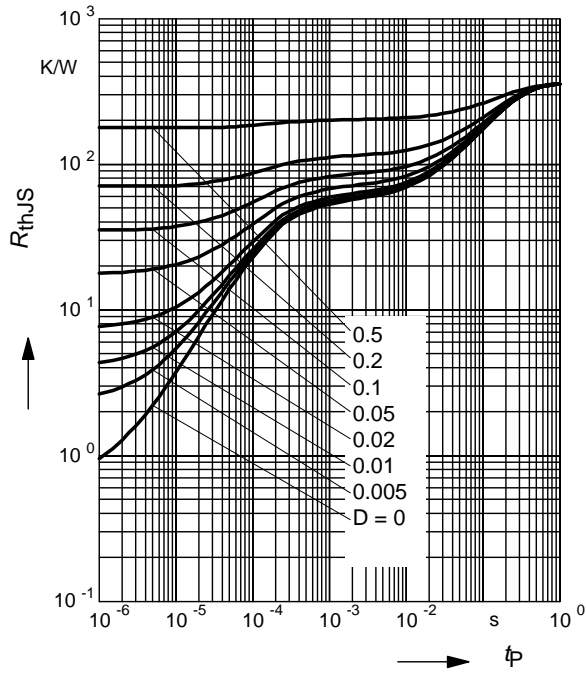
$I_{Fmax}/I_{FDC} = f(t_p)$

BAR67-02V

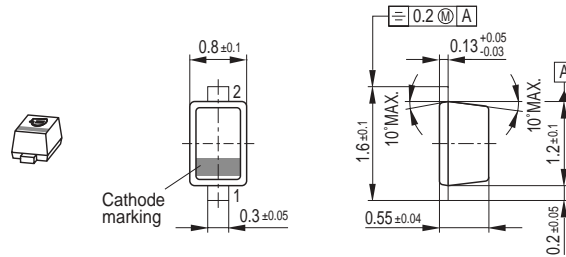


Permissible Puls Load  $R_{thJS} = f(t_p)$

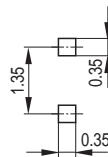
BAR67-04



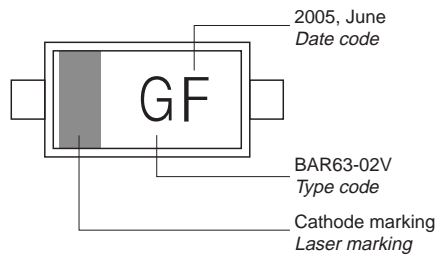
Package Outline



Foot Print

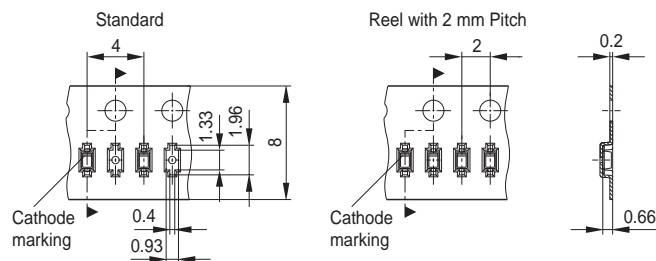


Marking Layout (Example)



Standard Packing

Reel  $\varnothing$ 180 mm = 3.000 Pieces/Reel  
 Reel  $\varnothing$ 180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing$ 330 mm = 10.000 Pieces/Reel

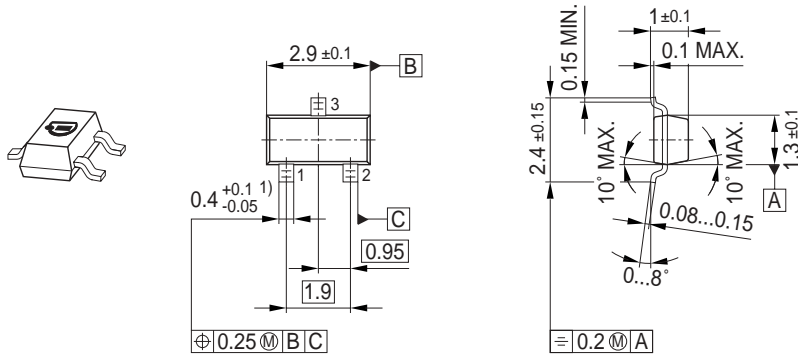


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

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

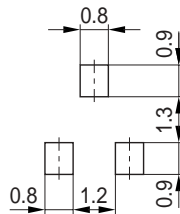
1) New Marking Layout for SC75, implemented at October 2005.

Package Outline

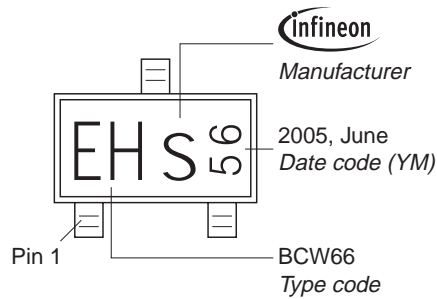


1) Lead width can be 0.6 max. in dambar area

Foot Print

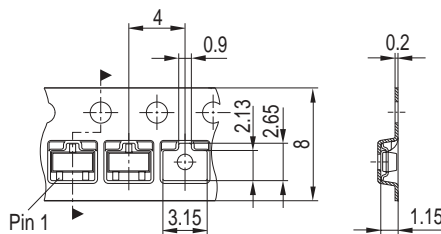


Marking Layout (Example)



Standard Packing

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





Edition 2006-02-01  
Published by  
Infineon Technologies AG  
81726 München, Germany  
© Infineon Technologies AG 2007.  
All Rights Reserved.

### **Attention please!**

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

### **Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://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.