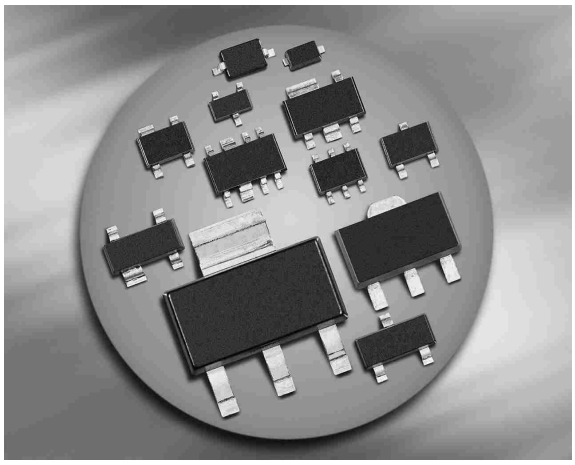
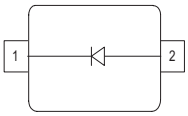
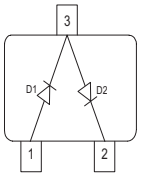
Silicon PIN Diode

- 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 Ω @ 5mA)
- Low harmonics
- Pb-free (RoHS compliant) package



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°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 ≤ 118°C, BAR67-02V		250	
T_S ≤ 25°C, BAR67-04		250	
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 125	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAR67-02V		≤ 115	
BAR67-04		≤ 290	

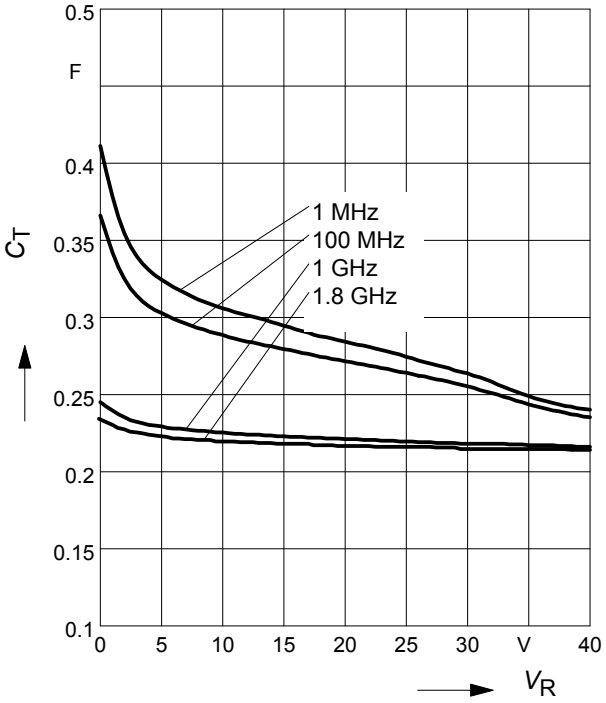
[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 5 µA	$V_{(BR)}$	150	-	-	V
Reverse current V_R = 100 V	I_R	-	-	20	nA
Forward voltage I_F = 50 mA	V_F	-	0.95	1.2	V
AC Characteristics					
Diode capacitance	C_T				pF
V_R = 5 V, f = 1 MHz		-	0.35	0.55	
V_R = 0 V, f = 100 MHz		-	0.35	0.9	
V_R = 0 V, f = 1 GHz		-	0.25	-	
V_R = 0 V, f = 1.8 GHz		-	0.23	-	
Reverse parallel resistance	R_P				kΩ
V_R = 0 V, f = 100 MHz		-	25	-	
V_R = 0 V, f = 1 GHz		-	4	-	
V_R = 0 V, f = 1.8 GHz		-	2.5	-	
Forward resistance	r_f				Ω
I_F = 5 mA, f = 100 MHz		-	1.5	1.8	
I_F = 10 mA, f = 100 MHz		-	1	-	
Charge carrier life time I_F = 10 mA, I_R = 6 mA, measured at I_R = 3 mA, R_L = 100 Ω	τ_{rr}	-	700	-	ns
I-region width	W_I	-	13	-	µm

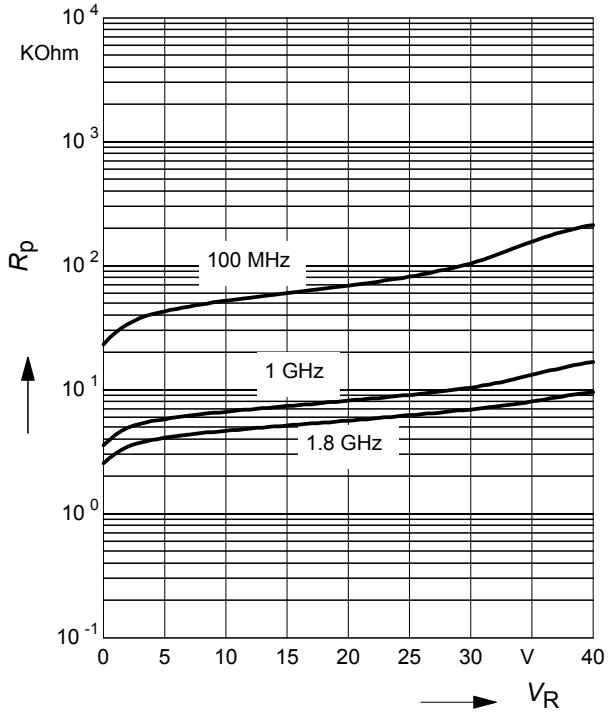
Diode capacitance $C_T = f(V_R)$

f = Parameter



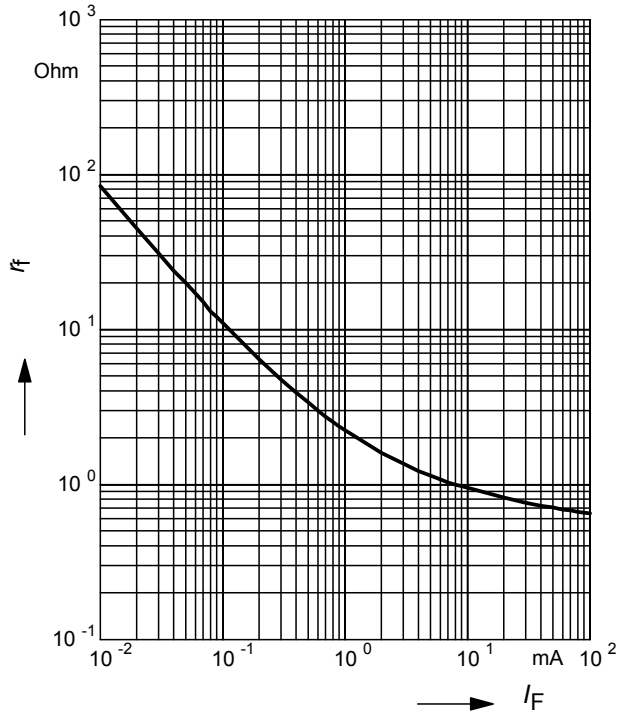
Reverse parallel resistance $R_P = f(V_R)$

f = Parameter



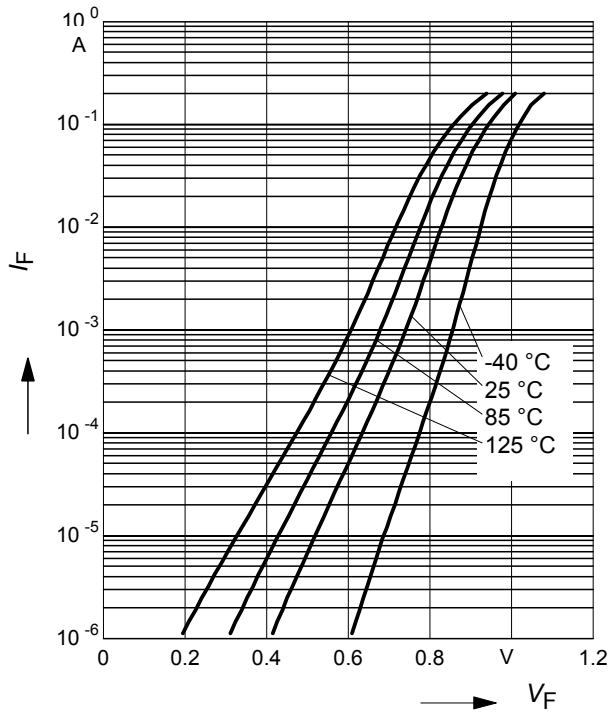
Forward resistance $r_f = f(I_F)$

f = 100MHz



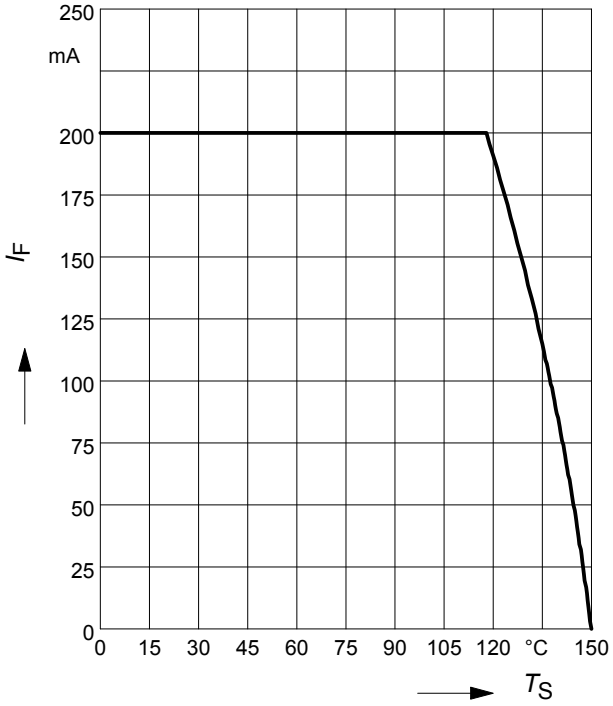
Forward current $I_F = f(V_F)$

T_A = Parameter



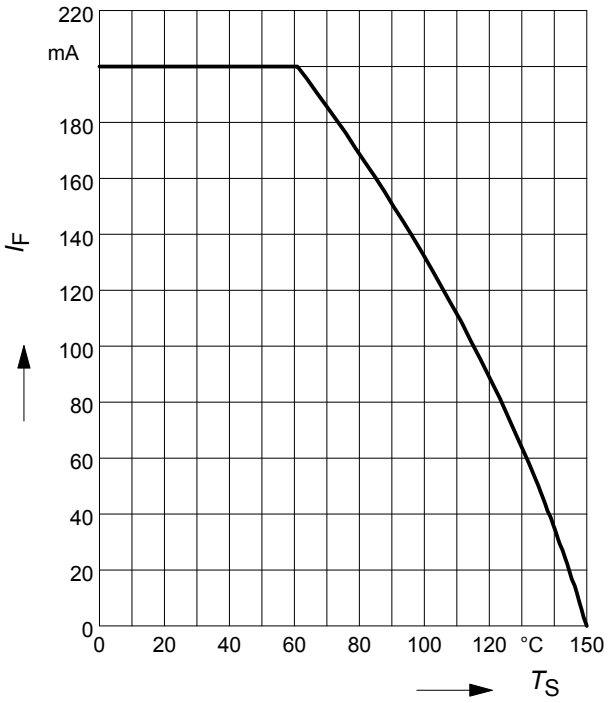
Forward current $I_F = f(T_S)$

BAR67-02V



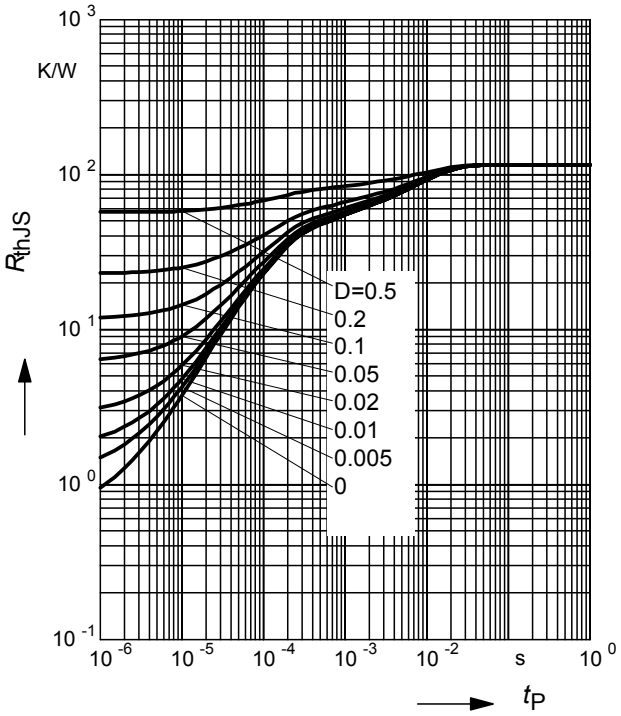
Forward current $I_F = f(T_S)$

BAR67-04



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

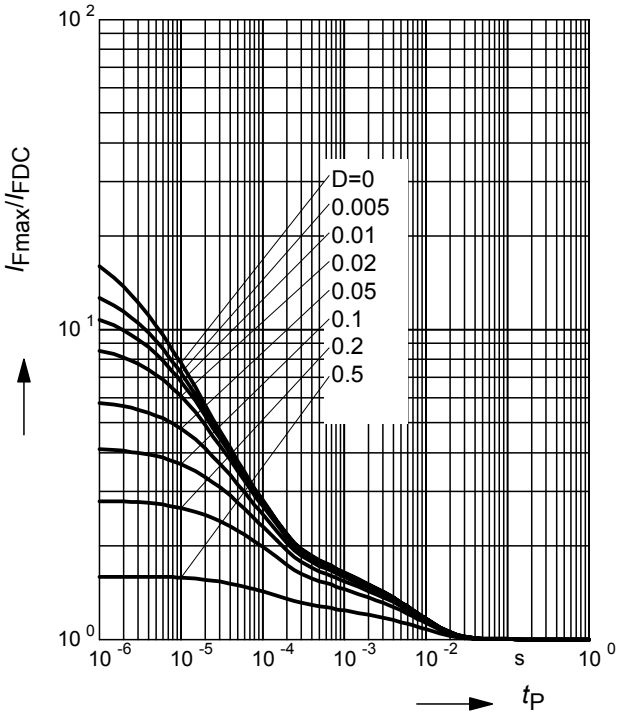
BAR67-02V



Permissible Pulse Load

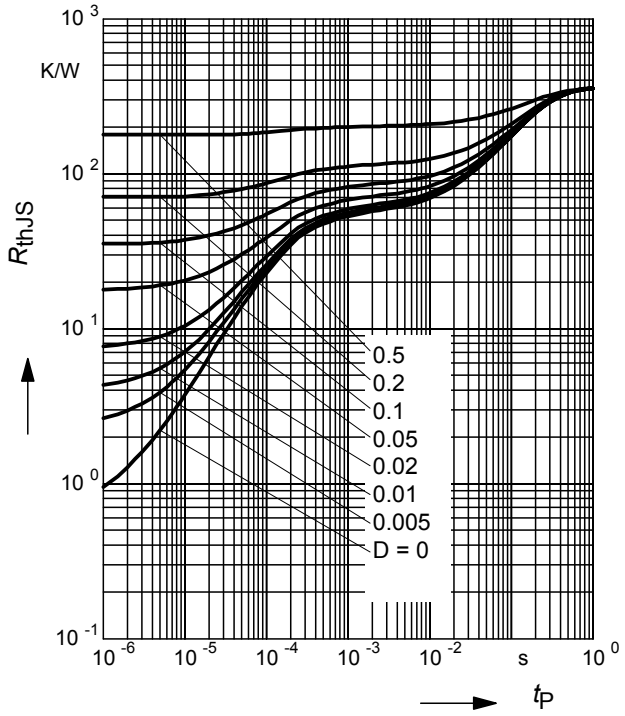
$I_{Fmax}/ I_{FDC} = f(t_p)$

BAR67-02V

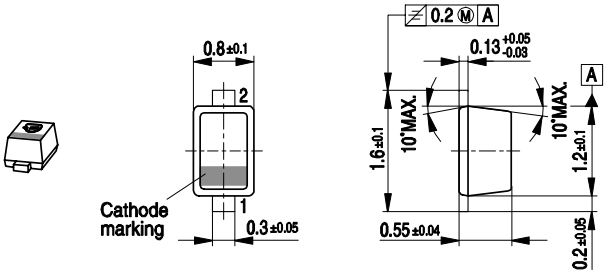


Permissible Puls Load $R_{thJS} = f(t_p)$

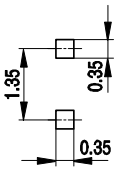
BAR67-04



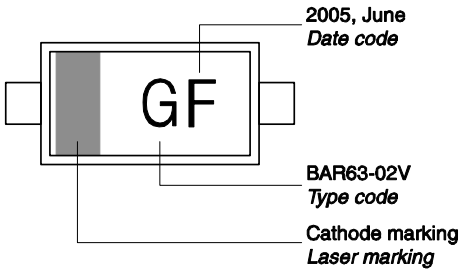
Package Outline



Foot Print

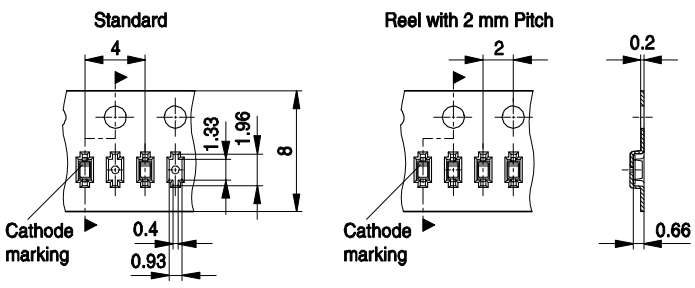


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ø330 mm = 10.000 Pieces/Reel



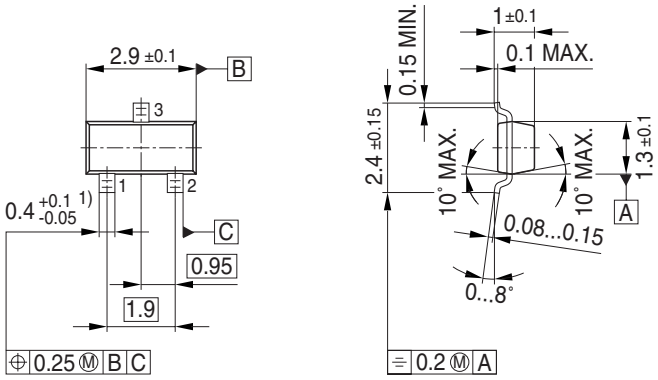
Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1)]) CES-Code

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.

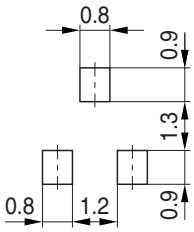
Package Outline



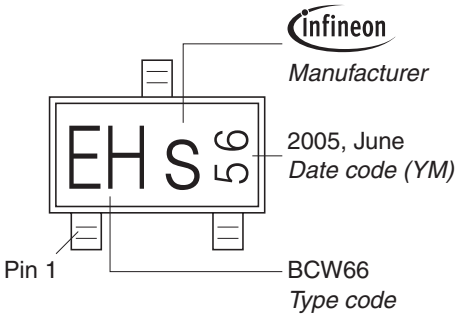


1) Lead width can be 0.6 max. in dambar area

Foot Print

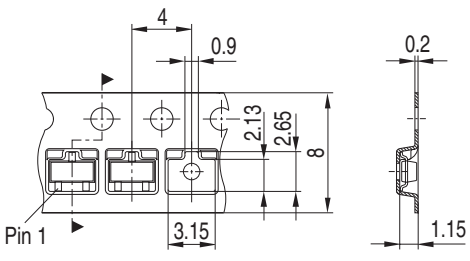


Marking Layout (Example)



Standard Packing

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



Edition 2009-11-16

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2009 Infineon Technologies AG
All Rights Reserved.

Legal Disclaimer

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. 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 the 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 the nearest Infineon Technologies Office.
Infineon Technologies components may be used in life-support devices or systems only 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.