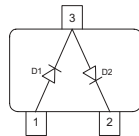
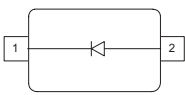


Silicon PIN Diode

- 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) package¹⁾
- 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 ²⁾	R_{thJS}		K/W
BAR67-02V		≤ 115	
BAR67-04		≤ 290	

¹Pb-containing package may be available upon special request

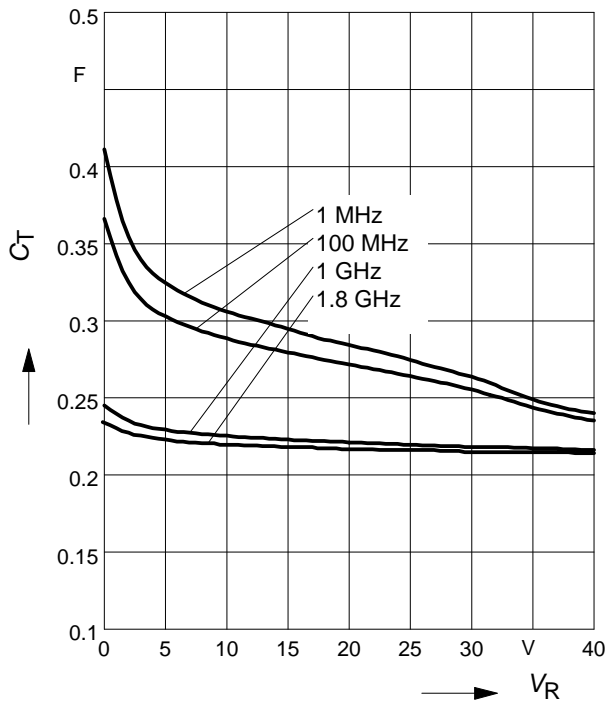
²For calculation of R_{thJA} please refer to Application Note Thermal Resistance

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 5 \mu\text{A}$	$V_{(BR)}$	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
AC Characteristics					
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
		-	0.35	0.9	
		-	0.25	-	
		-	0.23	-	
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 Ω
		-	4	-	
		-	2.5	-	
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	Ω
		-	1	-	
Charge carrier life time $I_F = 10 \text{ mA}, I_R = 6 \text{ mA}$, measured at $I_R = 3 \text{ mA}$, $R_L = 100 \Omega$	τ_{rr}	-	700	-	ns
I-region width	W_I	-	13	-	μm

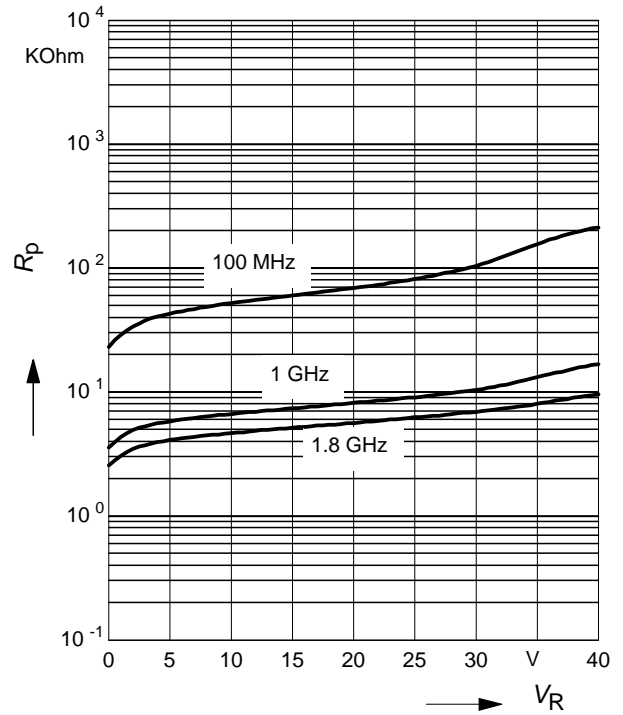
Diode capacitance $C_T = f(V_R)$

$f =$ Parameter



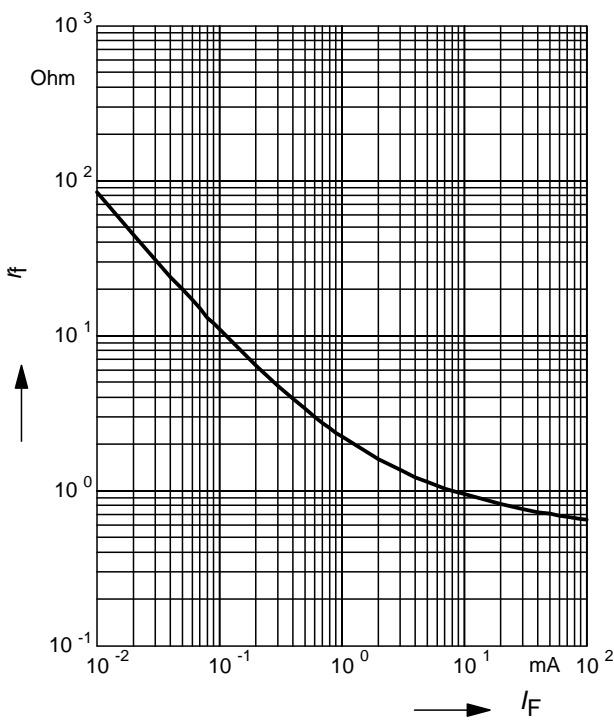
Reverse parallel resistance $R_p = f(V_R)$

$f =$ Parameter



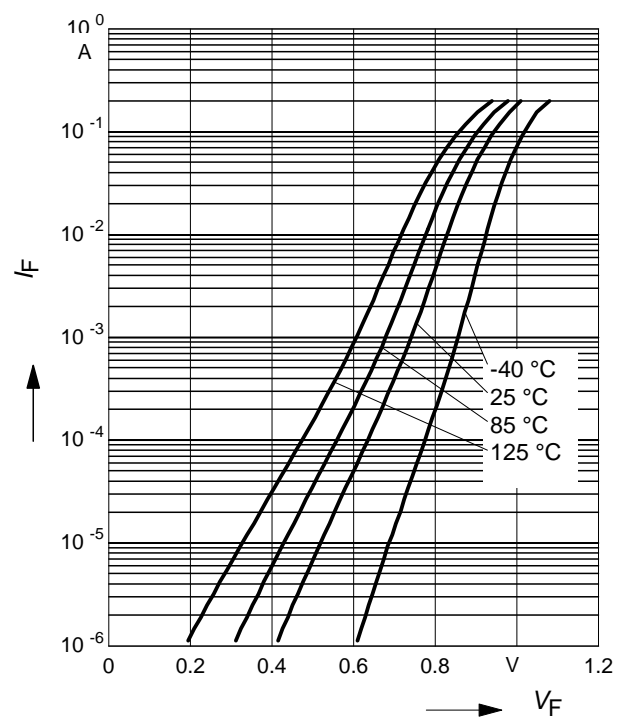
Forward resistance $r_f = f(I_F)$

$f = 100\text{MHz}$



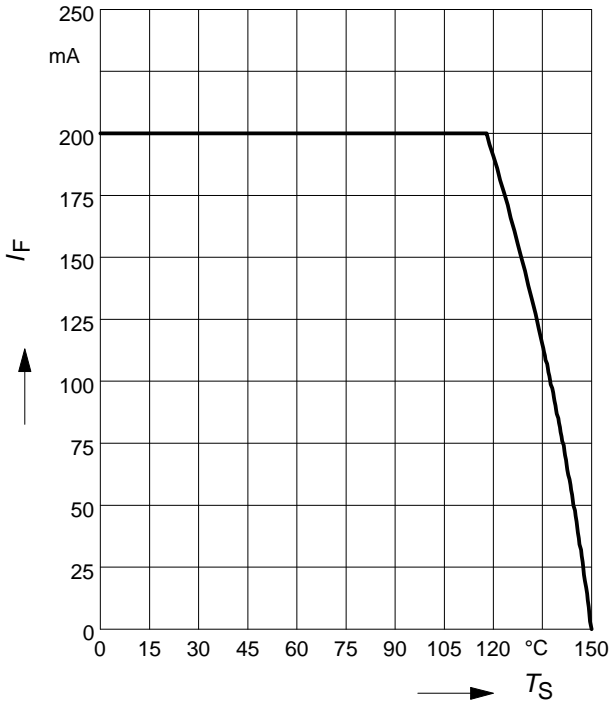
Forward current $I_F = f(V_F)$

$T_A =$ Parameter



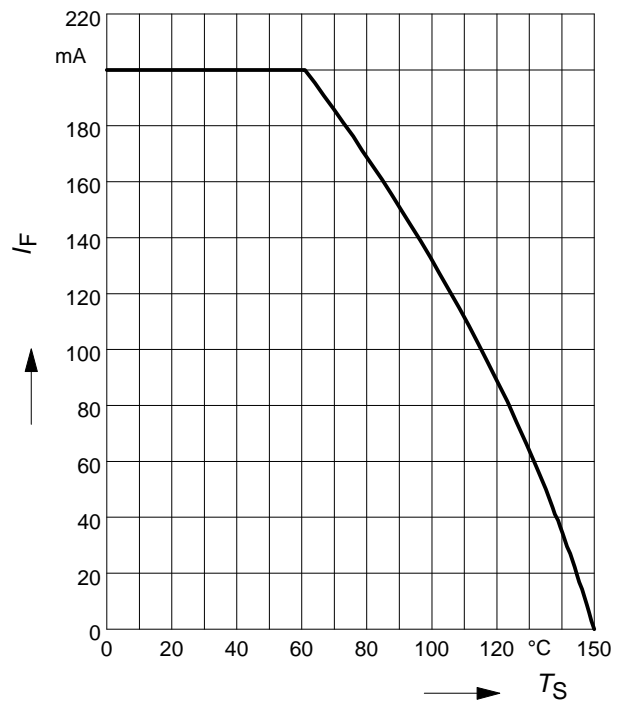
Forward current $I_F = f(T_S)$

BAR67-02V



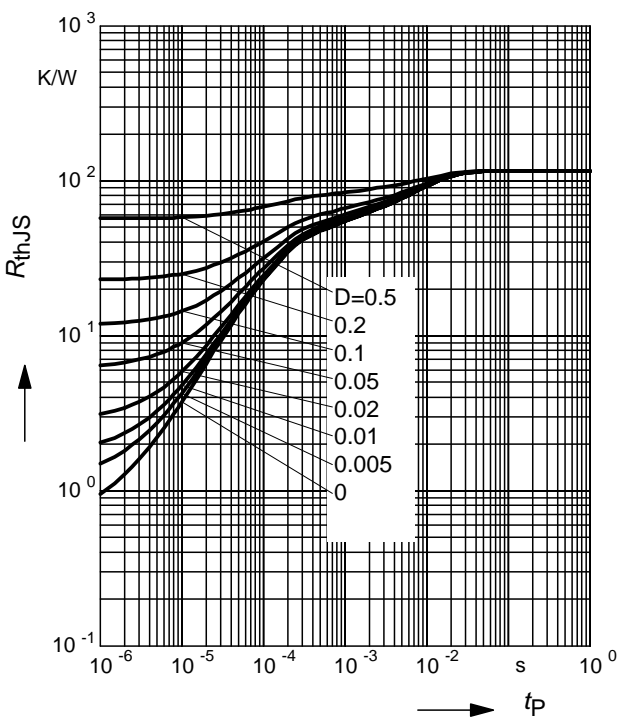
Forward current $I_F = f(T_S)$

BAR67-04



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

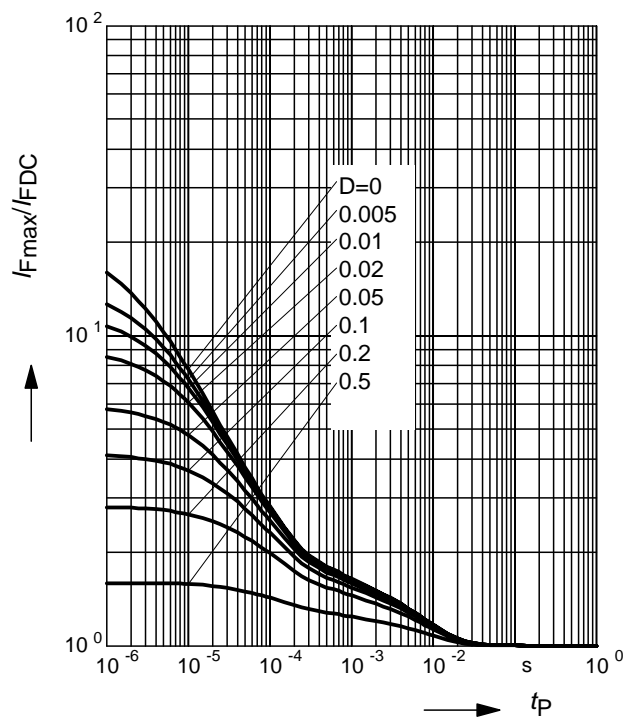
BAR67-02V



Permissible Pulse Load

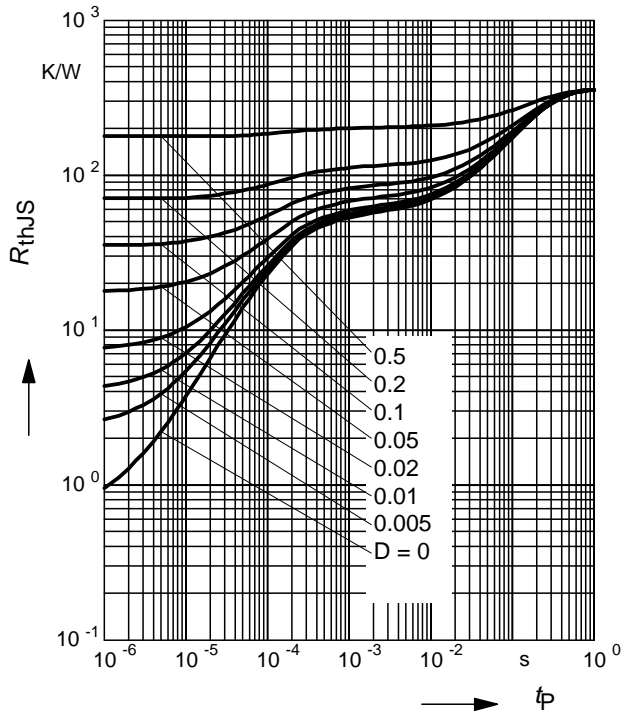
$I_{Fmax} / I_{FDC} = f(t_p)$

BAR67-02V

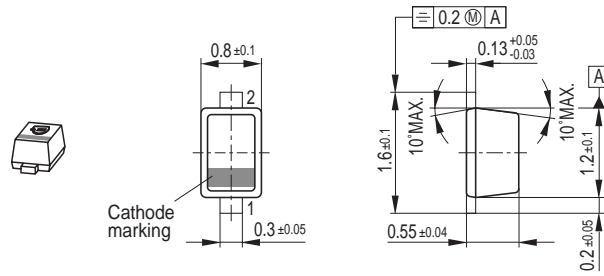


Permissible Puls Load $R_{thJS} = f(t_p)$

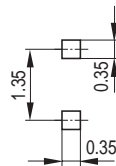
BAR67-04



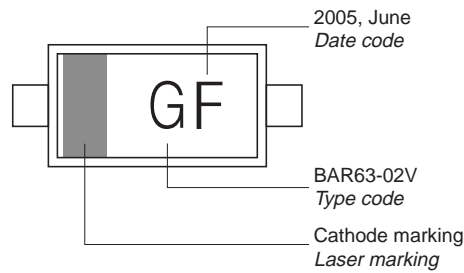
Package Outline



Foot Print

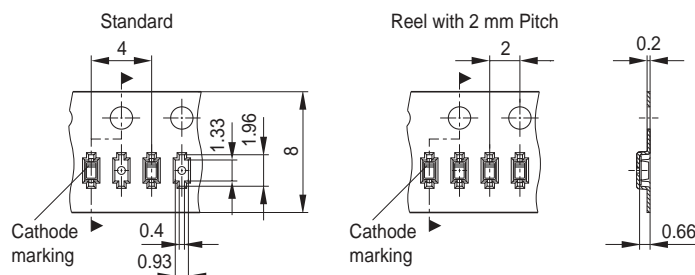


Marking Layout (Example)



Standard Packing

Reel 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, SC75¹⁾) CES-Code

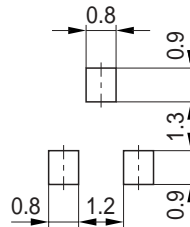
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y	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.

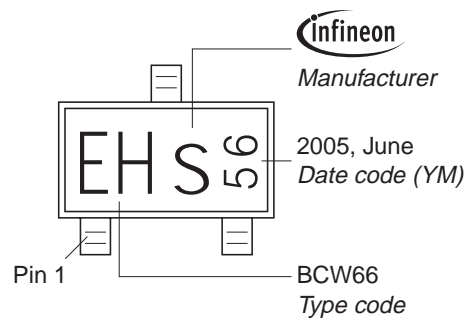
Package Outline



Foot Print

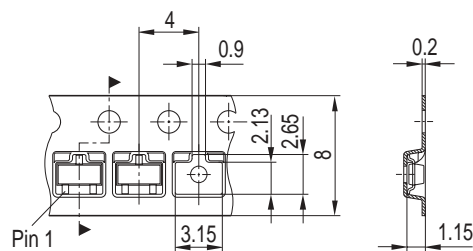


Marking Layout (Example)



Standard Packing

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



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