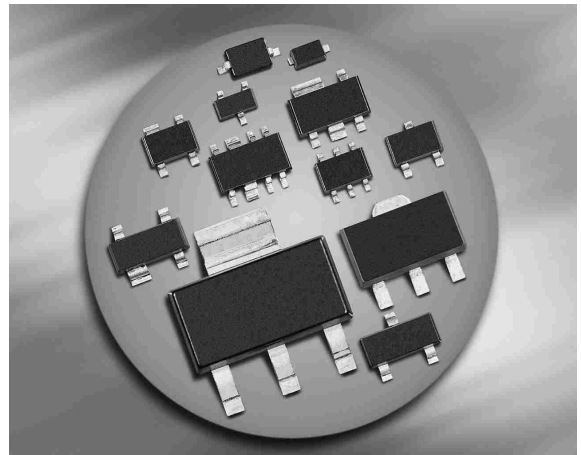
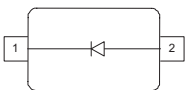


Silicon PIN Diode

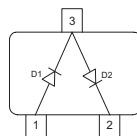
- High voltage current controlled RF resistor for RF attenuator and switches
- Frequency range above 1 MHz up to 6 GHz
- Very low capacitance at zero volt reverse bias at frequencies above 1 GHz (typ. 0.17 pF)
- Low forward resistance (typ. 2.1 Ω @ 10 mA)
- Very low signal distortion
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101¹⁾



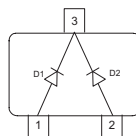
BAR64-02EL
BAR64-02V
BAR64-03W



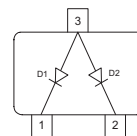
BAR64-04
BAR64-04W



BAR64-05
BAR64-05W



BAR64-06
BAR64-06W



Type	Package	Configuration	L_S (nH)	Marking
BAR64-02EL*	TSLP-2-19	single, leadless	0.4	OE
BAR64-02V	SC79	single	0.6	O
BAR64-03W	SOD323	single	1.8	blue 2
BAR64-04	SOT23	series	1.8	PPs
BAR64-04W	SOT323	series	1.4	PPs
BAR64-05	SOT23	common cathode	1.8	PRs
BAR64-05W	SOT323	common cathode	1.4	PRs
BAR64-06	SOT23	common anode	1.8	PSs
BAR64-06W	SOT323	common anode	1.4	PSs

¹⁾BAR64-02EL is not qualified according AEC Q101

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	100	mA
Total power dissipation	P_{tot}		mW
BAR64-02EL, $T_S \leq 135^\circ\text{C}$		250	
BAR64-02V, $T_S \leq 125^\circ\text{C}$		250	
BAR64-03W, $T_S \leq 25^\circ\text{C}$		250	
BAR64-04, -05, -06, $T_S \leq 65^\circ\text{C}$		250	
BAR64-04W, -05W, -06W, $T_S \leq 115^\circ\text{C}$		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 ¹⁾	R_{thJS}		
BAR64-02EL		≤ 60	
BAR64-02V, -04W, -05W, -06W		≤ 140	
BAR64-03W		≤ 370	
BAR64-04, -05, -06		≤ 340	

¹⁾For calculation of R_{thJA} please refer to Application Note AN077 (Thermal Resistance Calculation)

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	

DC Characteristics

Breakdown voltage	$V_{(\text{BR})}$	150	-	-	V
$I_{(\text{BR})} = 5\ \mu\text{A}$					
Forward voltage	V_F	-	-	1.1	
$I_F = 50\ \text{mA}$					

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance $V_R = 20\text{ V}$, $f = 1\text{ MHz}$ $V_R = 0\text{ V}$, $f = 100\text{ MHz}$ $V_R = 0\text{ V}$, $f = 1\ldots 1.8\text{ GHz}$, BAR64-02EL $V_R = 0\text{ V}$, $f = 1\ldots 1.8\text{ GHz}$, all other	C_T	- - - -	0.23 0.3 0.13 0.17	0.35 - - -	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	- - -	10 4 3	- - -	kΩ
Forward resistance $I_F = 1\text{ mA}$, $f = 100\text{ MHz}$ $I_F = 10\text{ mA}$, $f = 100\text{ MHz}$ $I_F = 100\text{ mA}$, $f = 100\text{ MHz}$	r_f	- - -	12.5 2.1 0.85	20 2.8 1.35	Ω
Charge carrier life time $I_F = 10\text{ mA}$, $I_R = 6\text{ mA}$, measured at $I_R = 3\text{ mA}$, $R_L = 100\text{ Ω}$	τ_{rr}	-	1550	-	ns
I-region width	W_I	-	50	-	μm
Insertion loss ¹⁾ $I_F = 3\text{ mA}$, $f = 1.8\text{ GHz}$ $I_F = 5\text{ mA}$, $f = 1.8\text{ GHz}$ $I_F = 10\text{ mA}$, $f = 1.8\text{ GHz}$	I_L	- - -	0.32 0.23 0.16	- - -	dB
Isolation ¹⁾ $V_R = 0\text{ V}$, $f = 0.9\text{ GHz}$ $V_R = 0\text{ V}$, $f = 1.8\text{ GHz}$ $V_R = 0\text{ V}$, $f = 2.45\text{ GHz}$ $V_R = 0\text{ V}$, $f = 5.6\text{ GHz}$	I_{SO}	- - - -	22 17 14.5 8.5	- - - -	

¹⁾BAR64-02EL in series configuration, $Z = 50\ \Omega$

Diode capacitance $C_T = f(V_R)$

$f = \text{Parameter}$



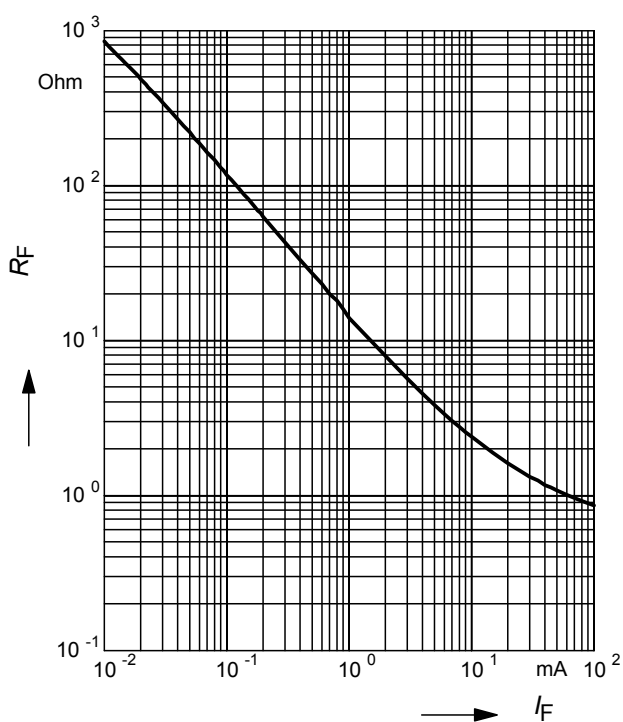
Reverse parallel resistance $R_P = f(V_R)$

$f = \text{Parameter}$



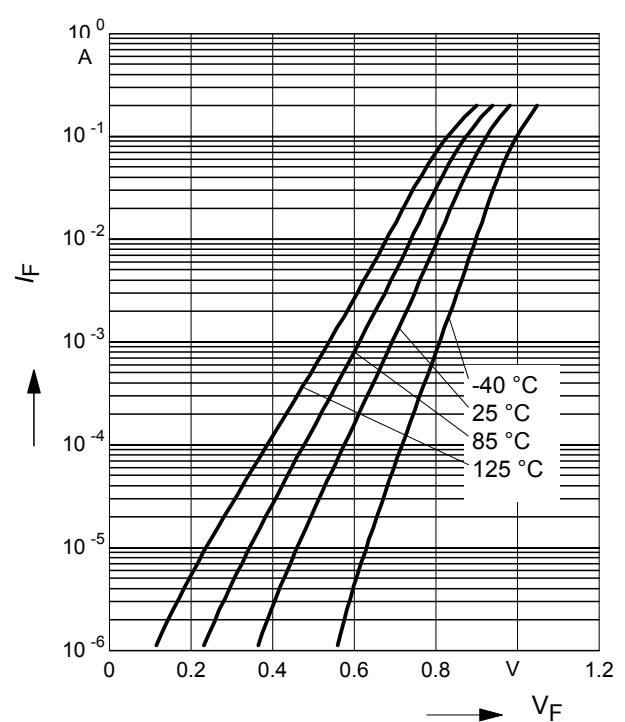
Forward resistance $r_f = f(I_F)$

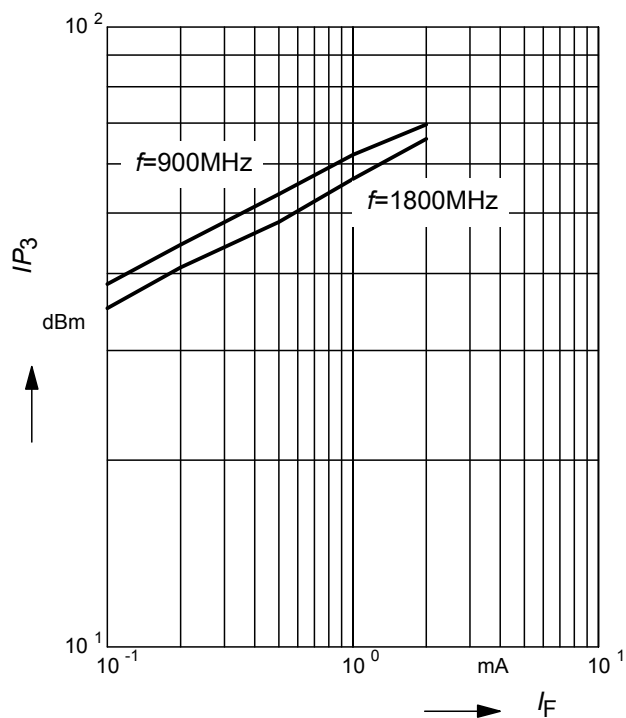
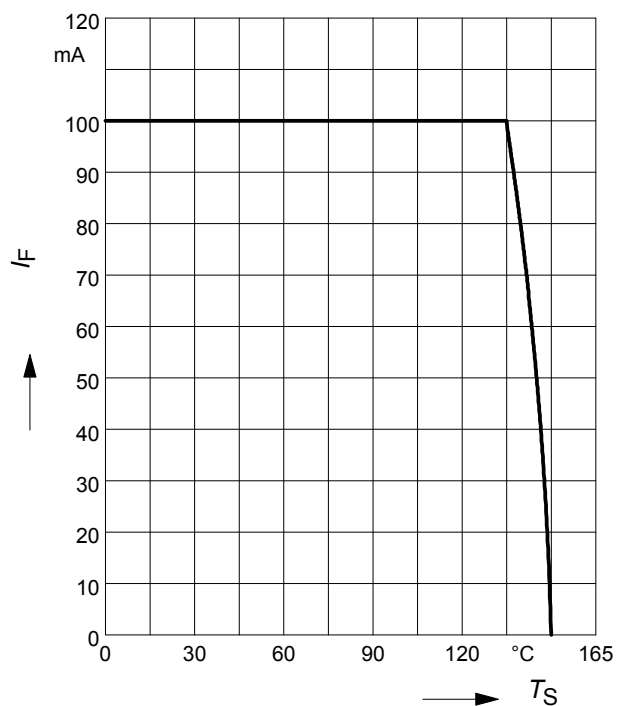
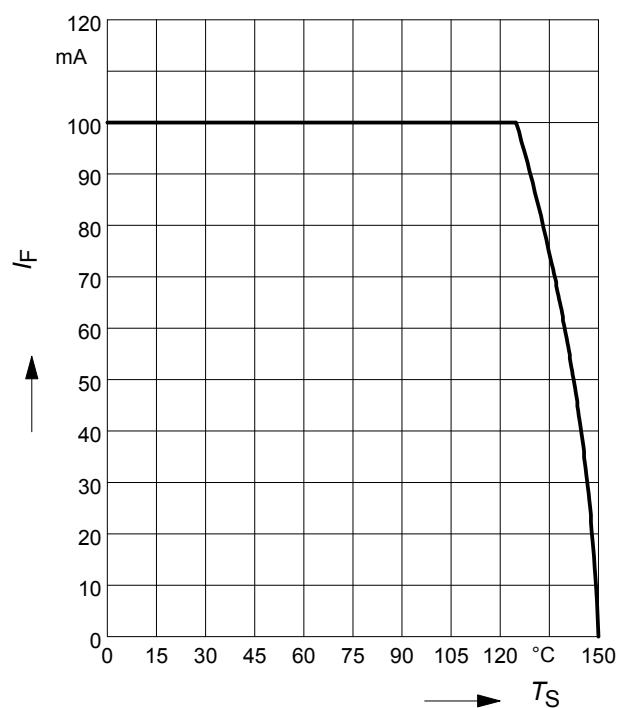
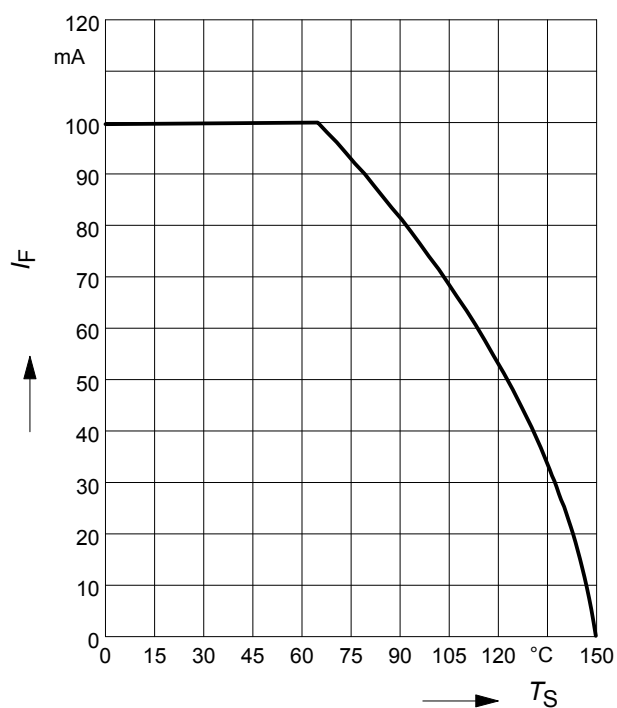
$f = 100\text{MHz}$



Forward current $I_F = f(V_F)$

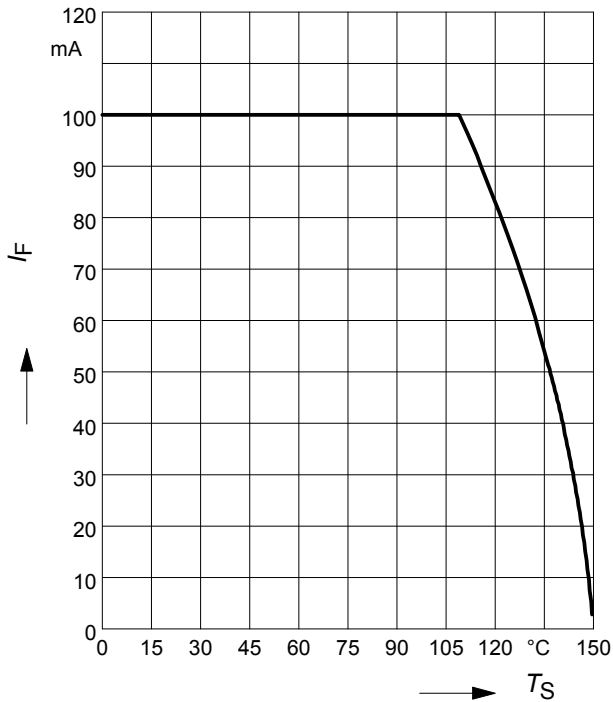
$T_A = \text{Parameter}$



Intermodulation intercept point
 $IP_3 = f(I_F); f = \text{Parameter}$

Forward current $I_F = f(T_S)$
BAR64-02EL

Forward current $I_F = f(T_S)$
BAR64-02V

Forward current $I_F = f(T_S)$
BAR64-04, BAR64-05, BAR64-06


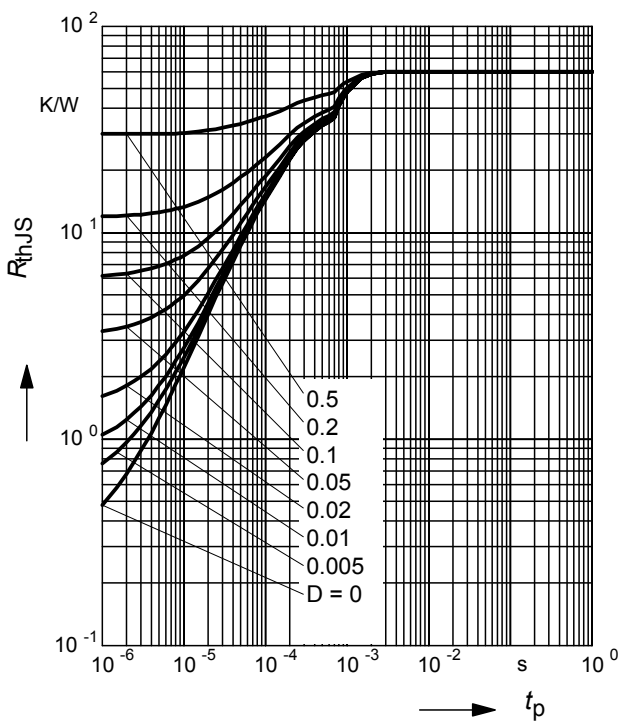
Forward current $I_F = f(T_S)$

BAR64-04W, BAR64-05W, BAR64-06W



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

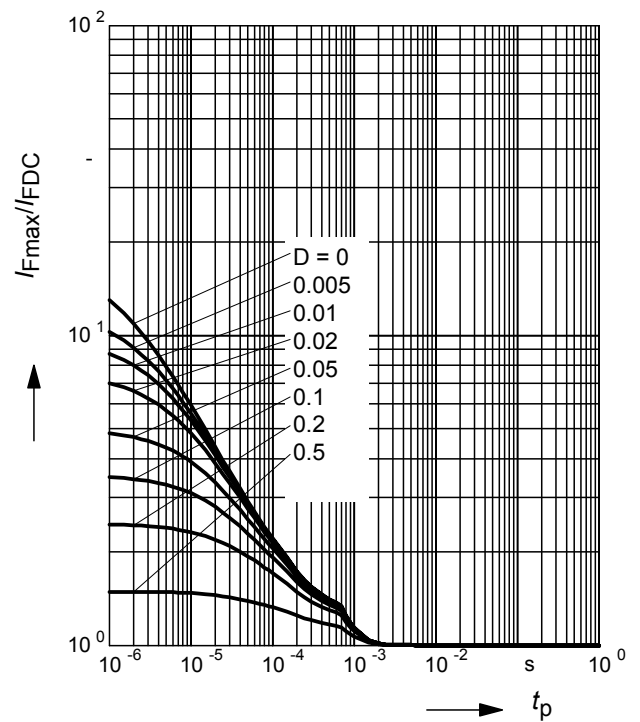
BAR64-02EL



Permissible Pulse Load

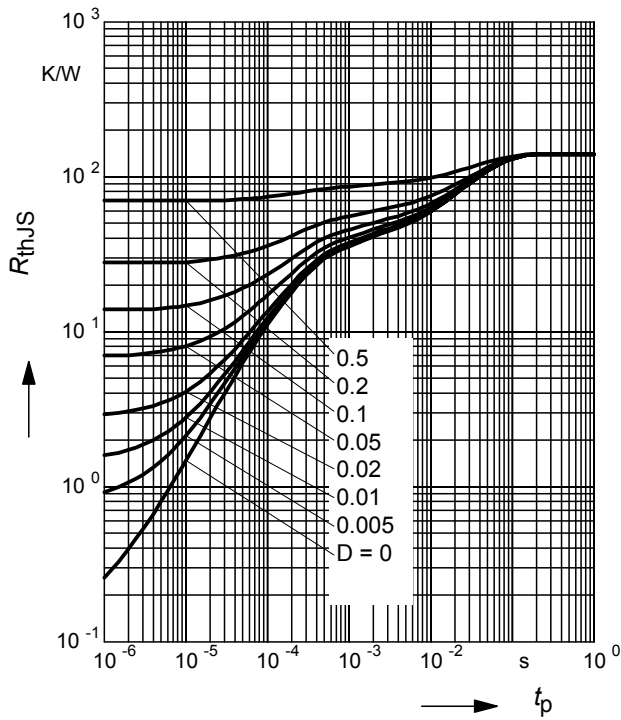
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAR64-02EL



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

BAR64-02V



Permissible Pulse Load

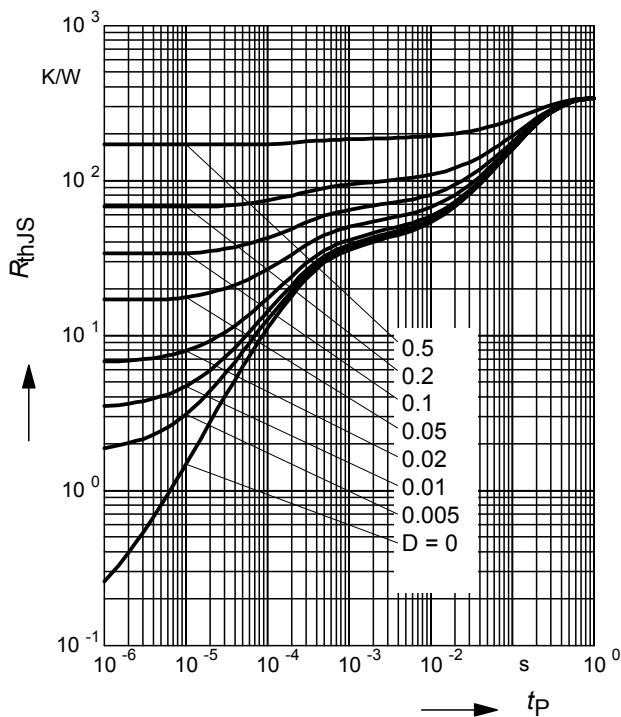
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAR64-02V



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

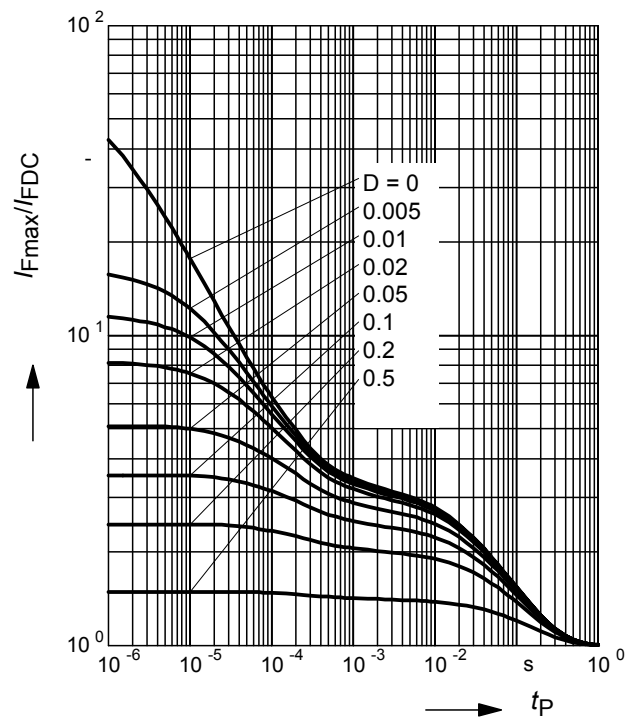
BAR64-04, BAR64-05, BAR64-06



Permissible Pulse Load

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

BAR64-04, BAR64-05, BAR64-06



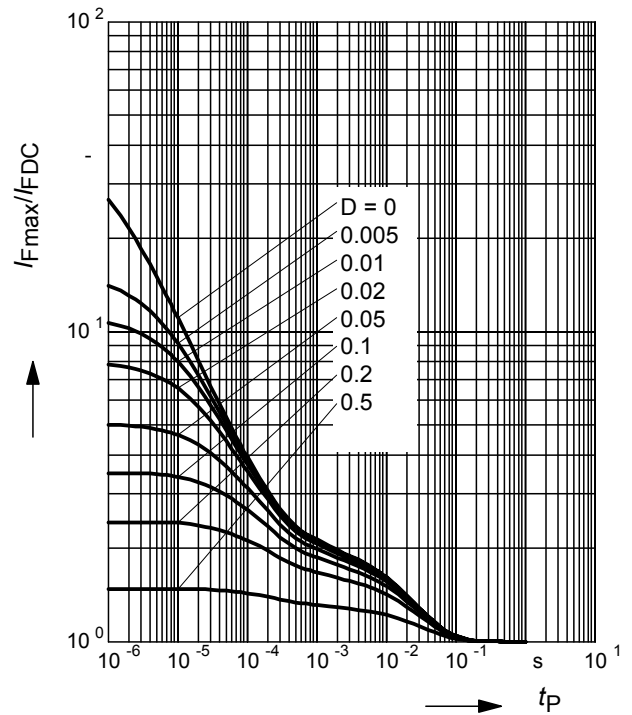
Permissible Puls Load $R_{thJS} = f(t_p)$

BAR64-04W, BAR64-05W, BAR64-06W


Permissible Pulse Load

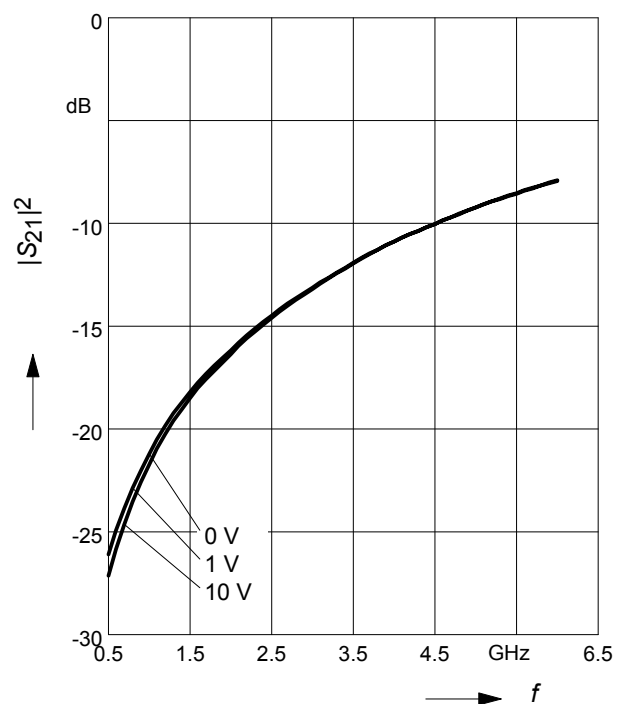
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAR64-04W, BAR64-05W, BAR64-06W

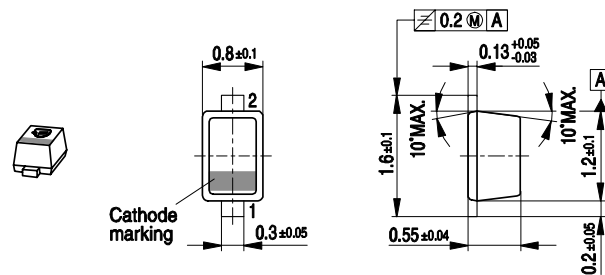

Insertion loss $I_L = -|S_{21}|^2 = f(f)$
 I_F = Parameter

 BAR64-02EL in series configuration, $Z = 50\Omega$

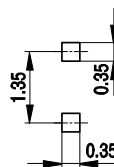
Isolation $I_{SO} = -|S_{21}|^2 = f(f)$
 V_R = Parameter

 BAR64-02EL in series configuration, $Z = 50\Omega$


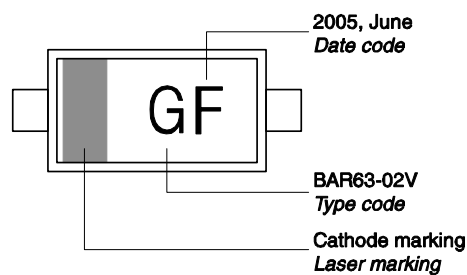
Package Outline



Foot Print

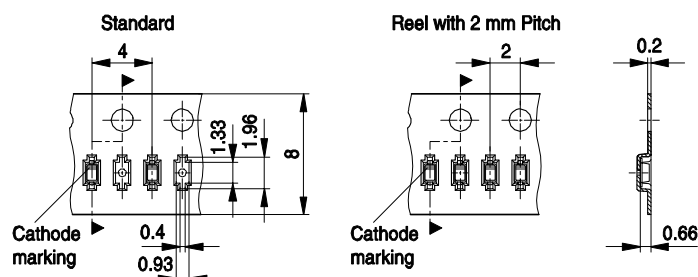


Marking Layout (Example)



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

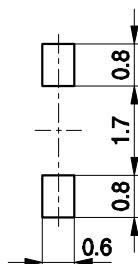
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

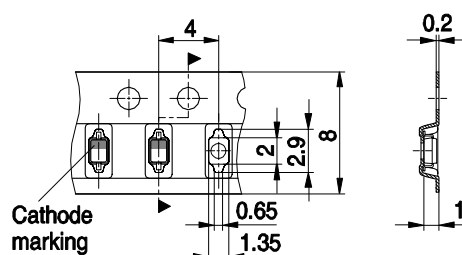


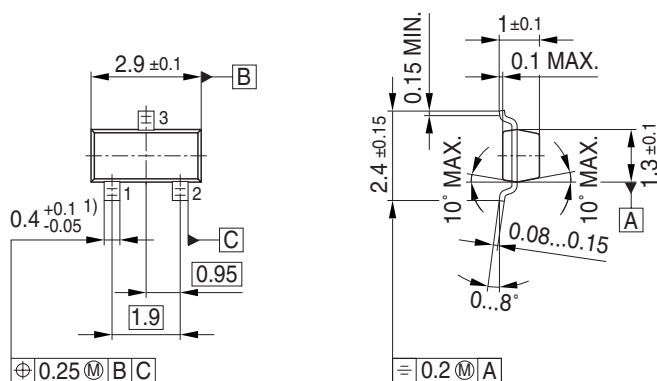
Marking Layout (Example)



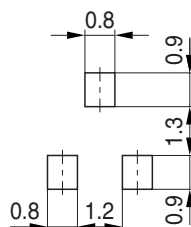
Standard Packing

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





Foot Print



The diagram shows a top-down view of a BCW66 LED package. It is a rectangular component with four pins. The top pin is labeled 'Pin 1'. The package has a central rectangular area containing the text 'EHS' and '2005, June'. To the right of this area is the Infineon logo. Below the package, the text 'BCW66' and 'Type code' are shown. Lines connect the labels to the corresponding parts of the package: 'Pin 1' to the top pin, 'BCW66' to the bottom of the package, 'Type code' to the bottom of the package, 'Manufacturer' to the Infineon logo, and 'Date code (YM)' to the '2005, June' text.

Pin 1

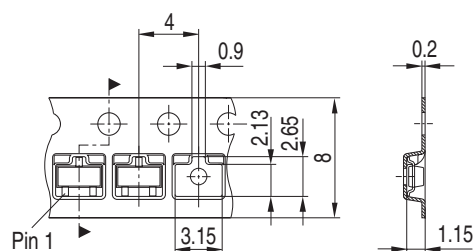
BCW66

Type code

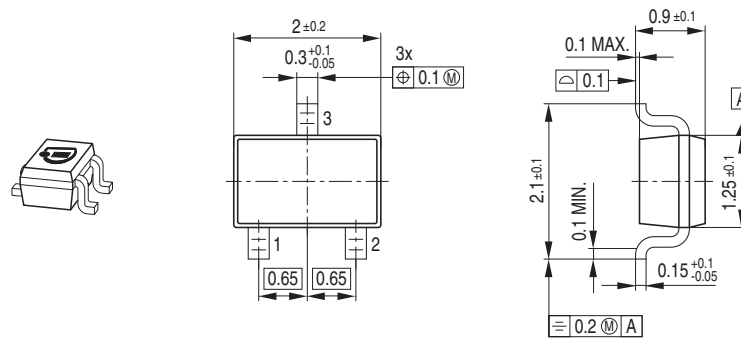
Manufacturer

Date code (YM)

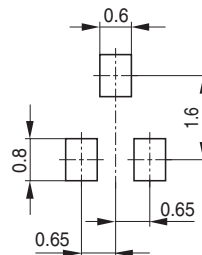
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



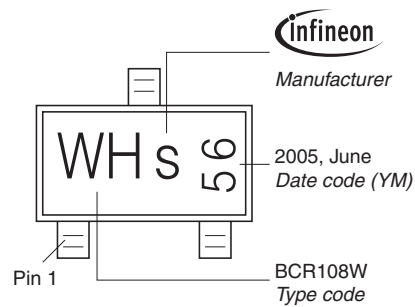
Package Outline



Foot Print

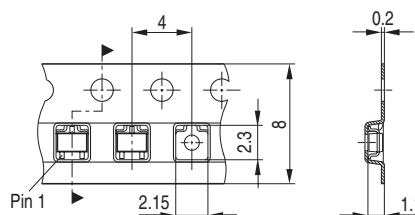


Marking Layout (Example)



Standard Packing

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



Package Outline



TSLP-2-19, -20-PO V01

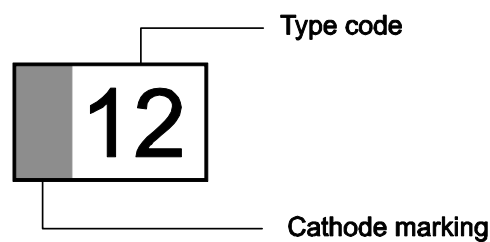
Foot Print

For board assembly information please refer to Infineon website „Packages“



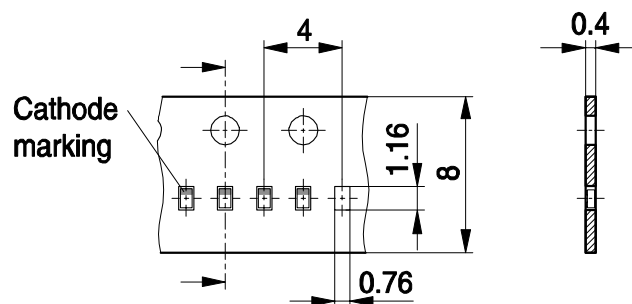
TSLP-2-19, -20-FP V01

Marking layout (Example)



Standard Packing

Reel Ø 180 mm: 15.000 Pieces / Reel
 Reel Ø 330 mm: 6.000 Pieces / Reel
 Reel Ø 330 mm: 50.000 Pieces / Reel



TSLP-2-19, -20-TP V02

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