

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: BAR 64-05W H6433

Manufacturer: Infineon Technologies

Package: SC-70, SOT-323

Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/infineon-technologies/bar-64-05w-h6433.html>

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Contact Information

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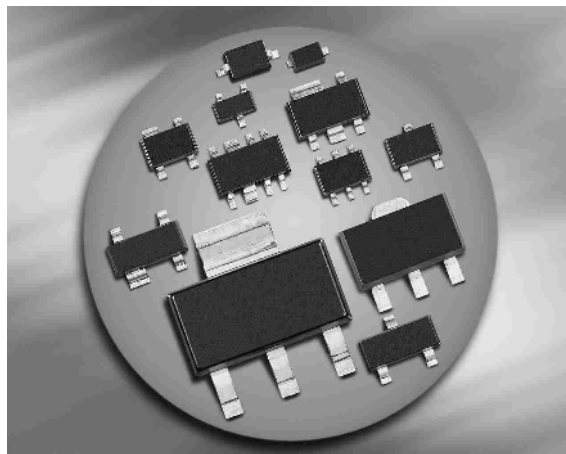
Note:

This PDF includes an ANTREX product reference cover page.

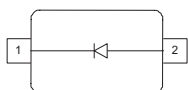
The original manufacturer datasheet follows from the next page.

Silicon PIN Diode

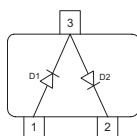
- High voltage current controlled RF resistor for RF attenuator and switches
- Frequency range above 1 MHz up to 6 GHz
- Very low capacitance at zero volt reverse bias at frequencies above 1 GHz (typ. 0.17 pF)
- Low forward resistance (typ. 2.1 Ω @ 10 mA)
- Very low signal distortion
- Pb-free (RoHS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



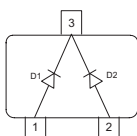
BAR64-02LRH
BAR64-02V
BAR64-03W



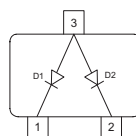
BAR64-04
BAR64-04W



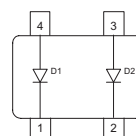
BAR64-05
BAR64-05W



BAR64-06
BAR64-06W



BAR64-07



Type	Package	Configuration	L_s (nH)	Marking
BAR64-02LRH*	TSLP-2-7	single, leadless	0.4	O
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
BAR64-07	SOT143	parallel pair	2	PTs

¹⁾BAR64-02LRH 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 BAR64-02LRH, $T_S \leq 135^\circ\text{C}$ BAR64-02V, $T_S \leq 125^\circ\text{C}$ BAR64-03W, BAR64-07, $T_S \leq 25^\circ\text{C}$ BAR64-04, -05, -06, $T_S \leq 65^\circ\text{C}$ BAR64-04W, -05W, -06W, $T_S \leq 115^\circ\text{C}$	P_{tot}	250 250 250 250 250	mW
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⁾ BAR64-02LRH BAR64-02V, -04W, -05W, -06W BAR64-03W BAR64-04, -05, -06 BAR64-07	R_{thJS}	≤ 60 ≤ 140 ≤ 370 ≤ 340 ≤ 290	

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

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Breakdown voltage $I_{(\text{BR})} = 5 \mu\text{A}$	$V_{(\text{BR})}$	150	-	-	V
Forward voltage $I_F = 50 \text{ mA}$	V_F	-	-	1.1	

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

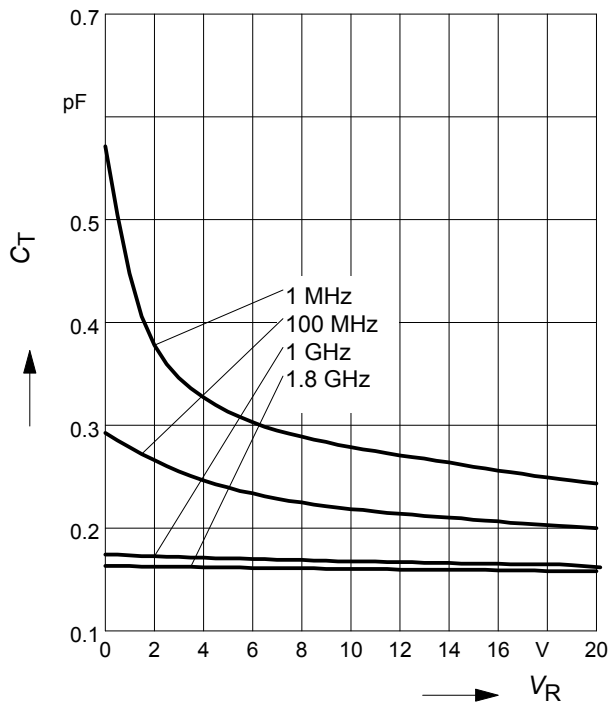
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance $V_R = 20\text{ V}$, $f = 1\text{ MHz}$ $V_R = 0\text{ V}$, $f = 100\text{ MHz}$ $V_R = 0\text{ V}$, $f = 1\ldots 1.8\text{ GHz}$, BAR64-02LRH $V_R = 0\text{ V}$, $f = 1\ldots 1.8\text{ GHz}$, 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⁾BAR64-02LRH in series configuration, $Z = 50\text{ }\Omega$

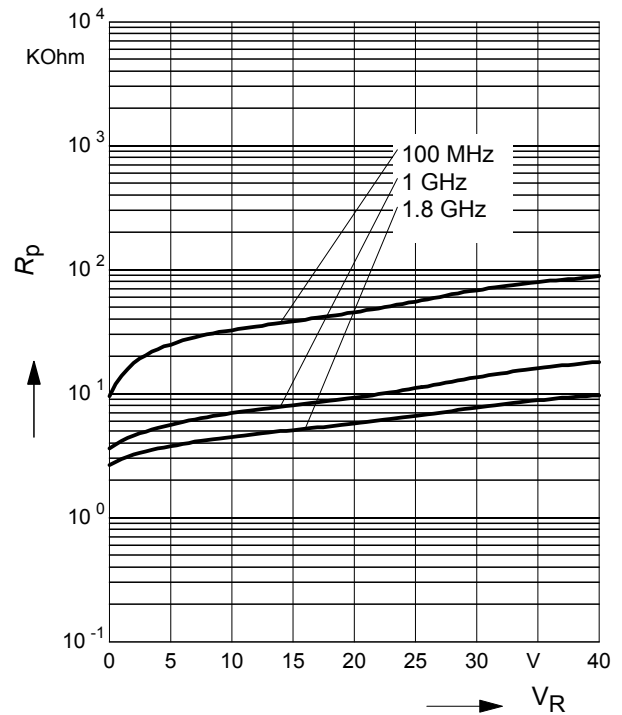
Diode capacitance $C_T = f(V_R)$

$f = \text{Parameter}$



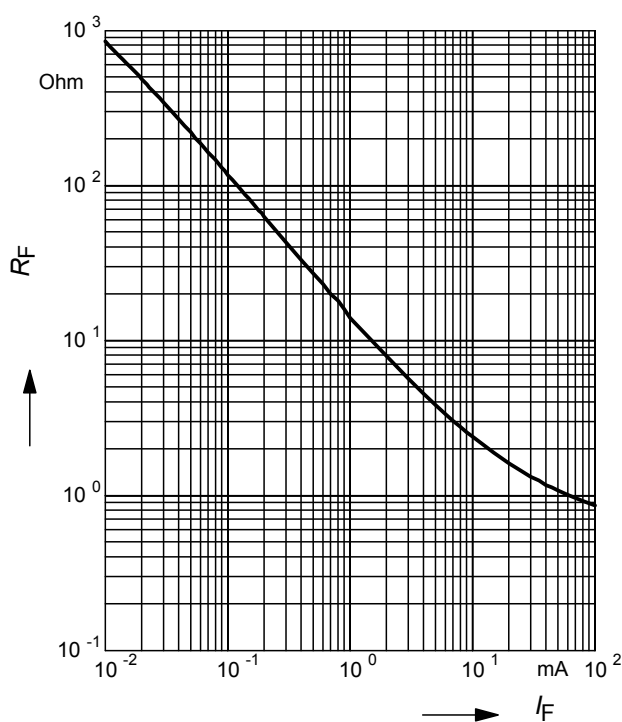
Reverse parallel resistance $R_P = f(V_R)$

$f = \text{Parameter}$



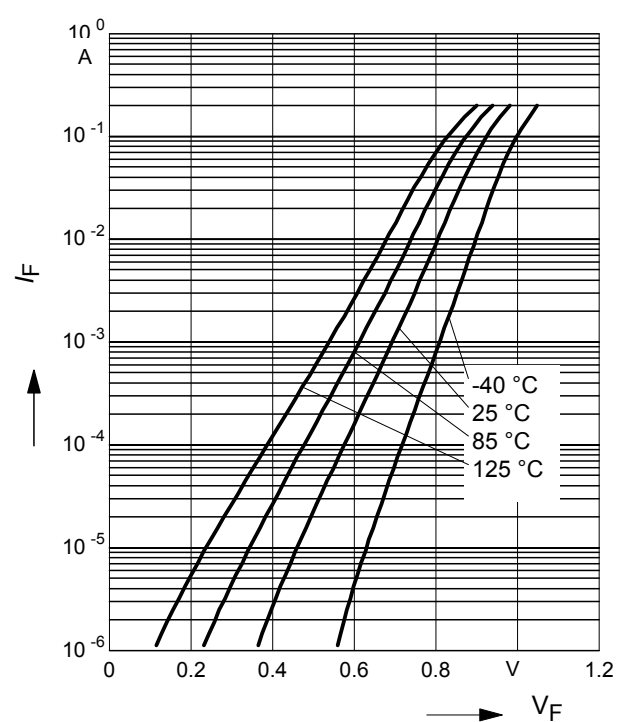
Forward resistance $r_f = f(I_F)$

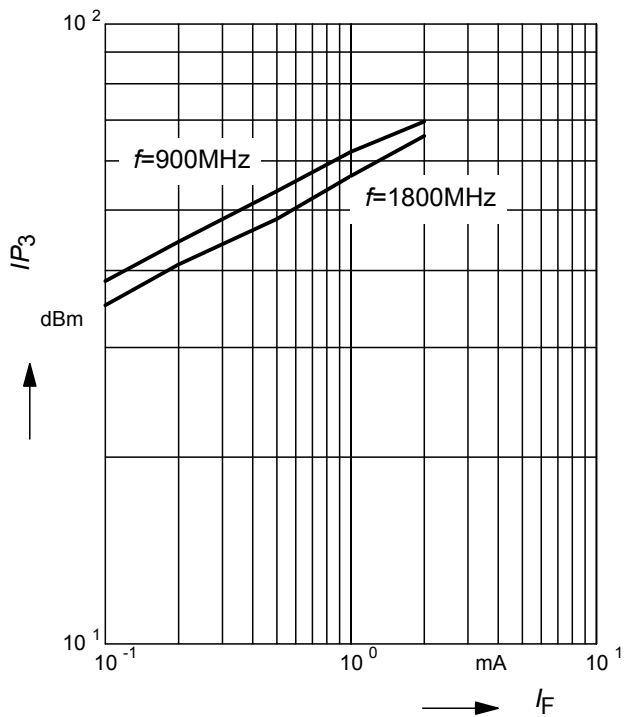
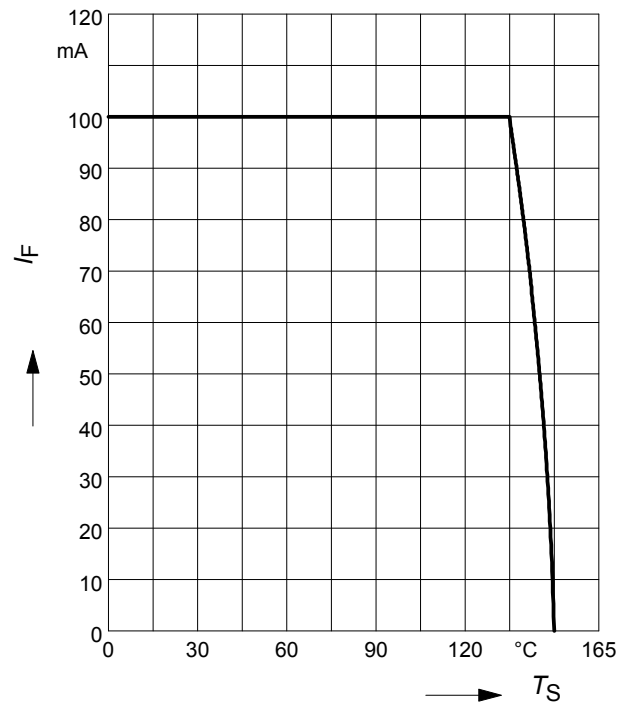
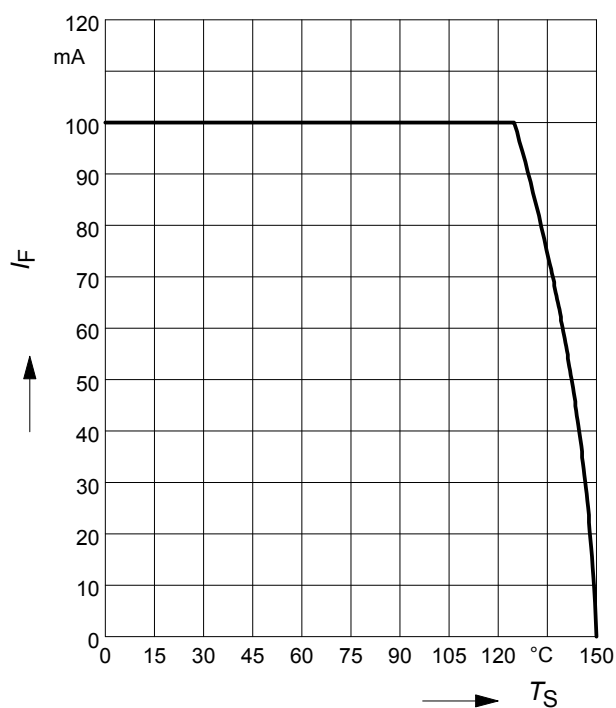
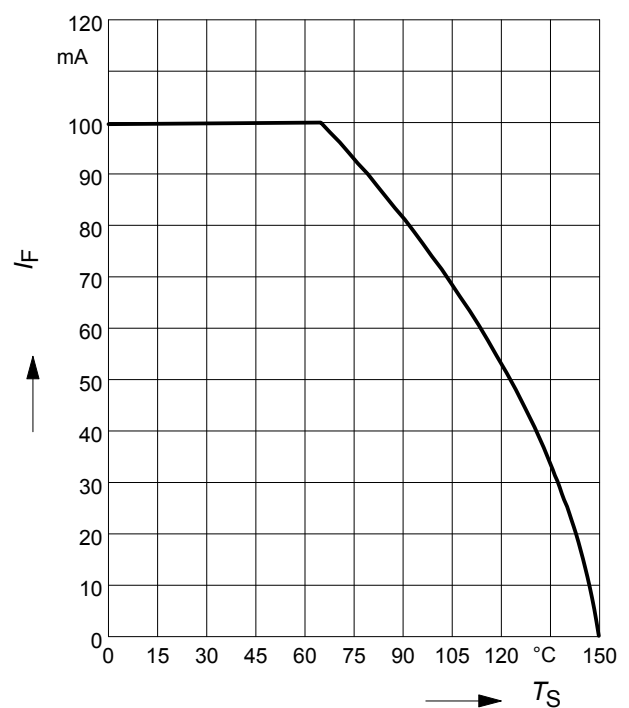
$f = 100\text{MHz}$



Forward current $I_F = f(V_F)$

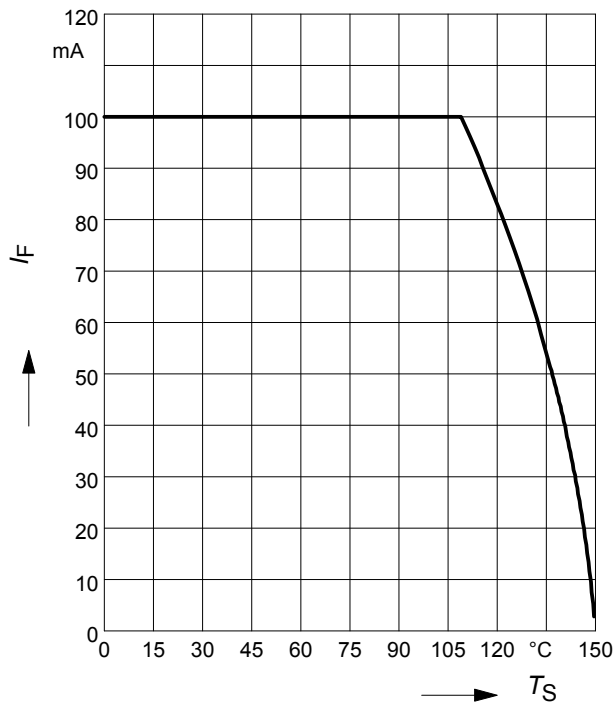
$T_A = \text{Parameter}$



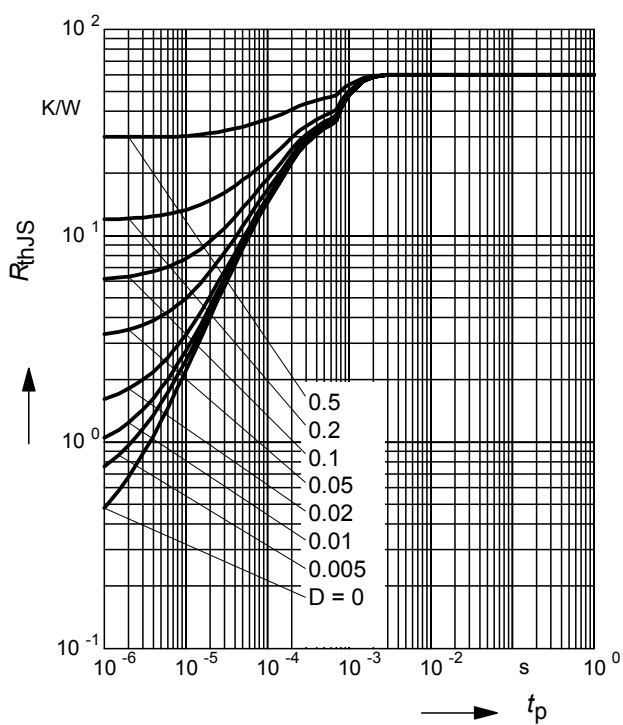
Intermodulation intercept point
 $IP_3 = f(I_F); f = \text{Parameter}$

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

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

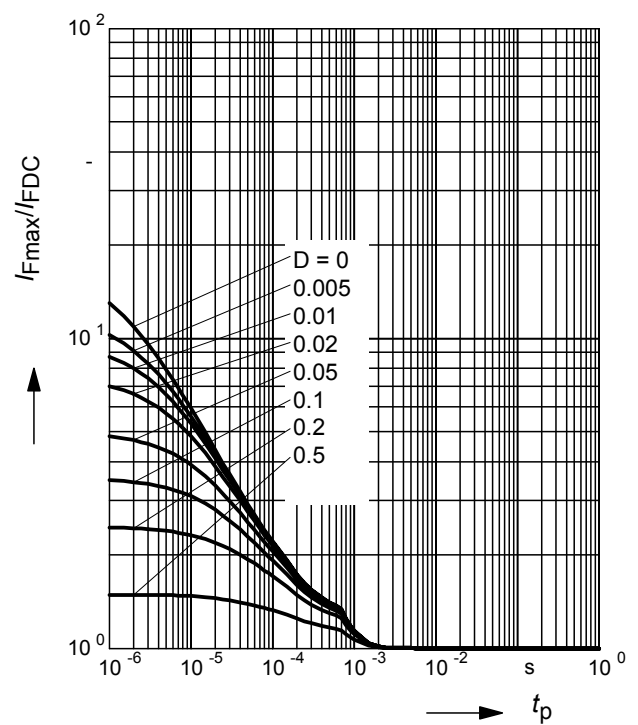

Permissible Puls Load $R_{thJS} = f(t_p)$

BAR64-02LRH


Permissible Pulse Load

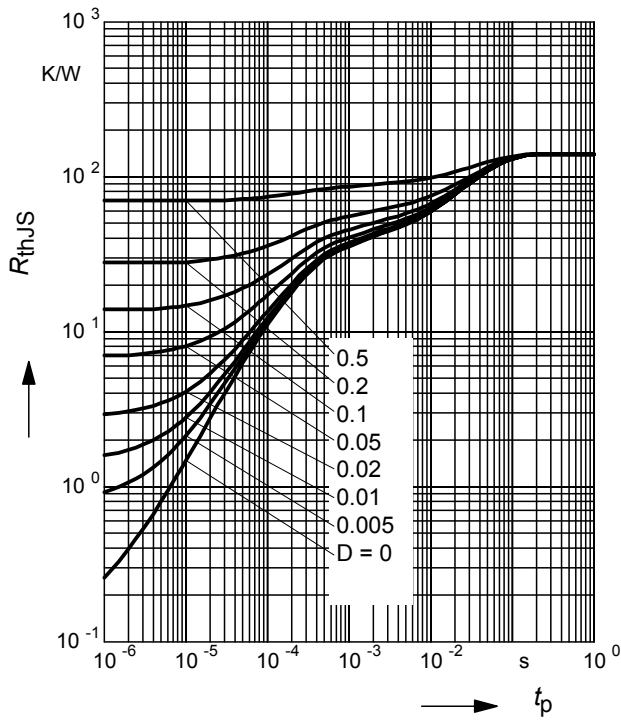
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAR64-02LRH



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

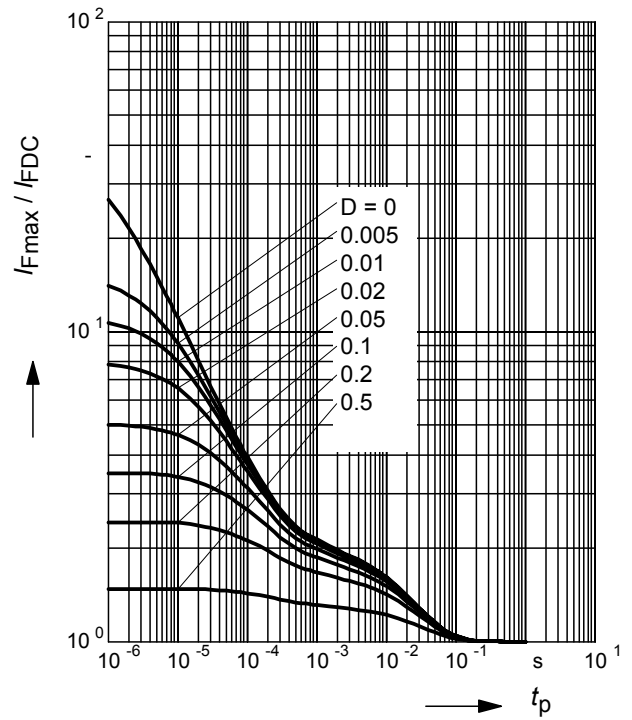
BAR64-02V



Permissible Pulse Load

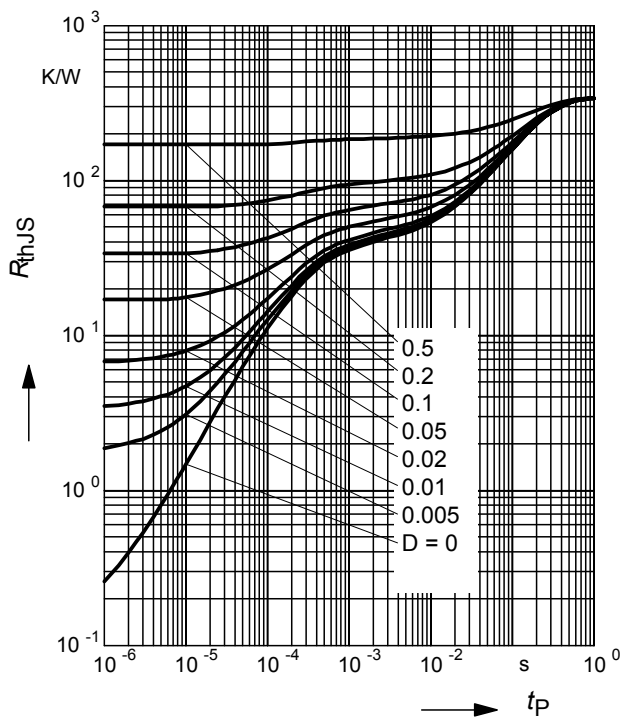
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAR64-02V



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

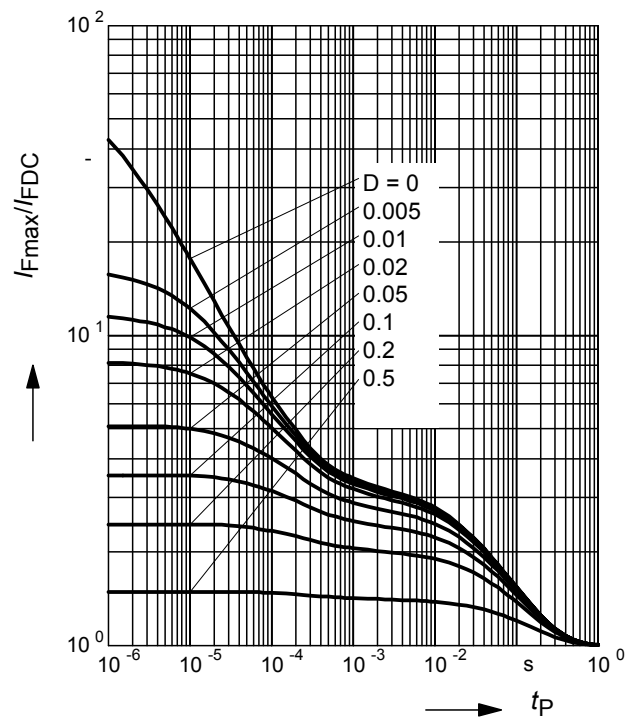
BAR64-04, BAR64-05, BAR64-06



Permissible Pulse Load

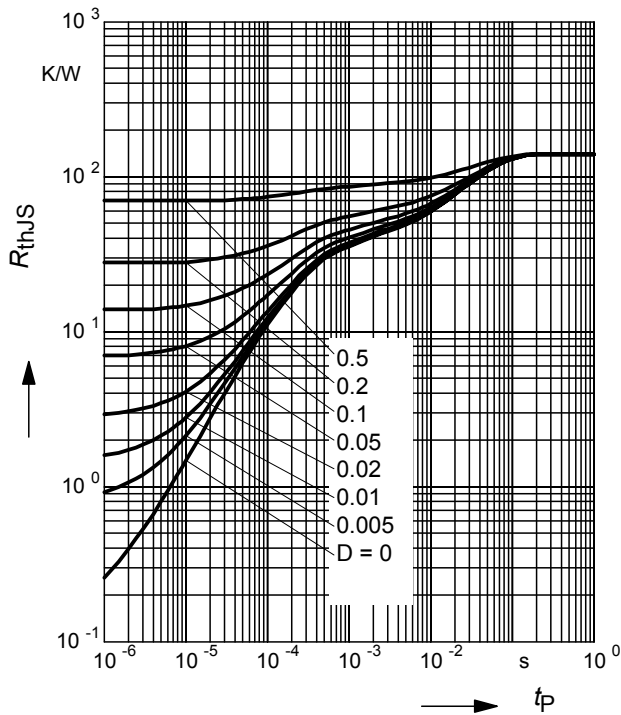
$$I_{Fmax} / I_{FDC} = f(t_p)$$

BAR64-04, BAR64-05, BAR64-06



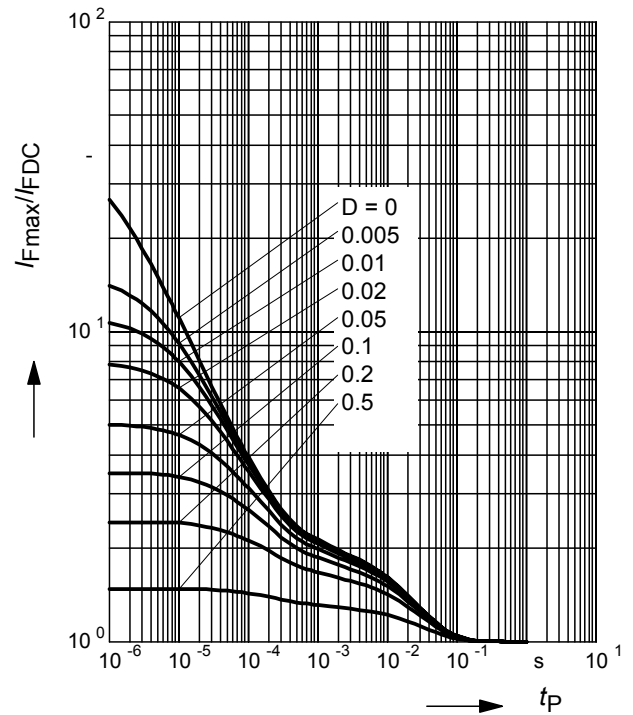
Permissible Puls Load $R_{thJS} = f(t_p)$

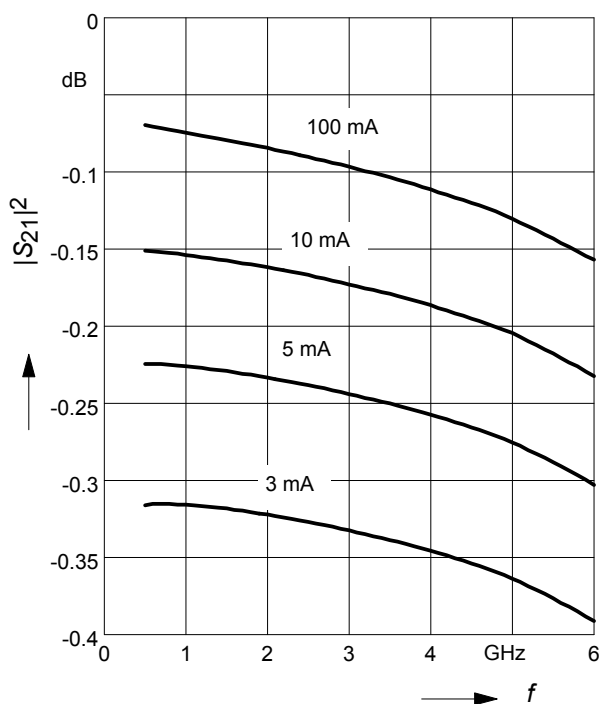
BAR64-04W, BAR64-05W, BAR64-06W

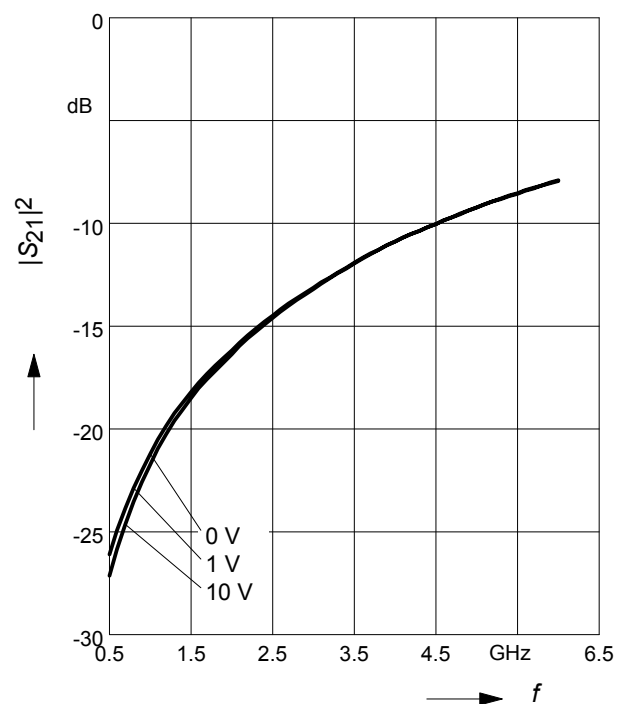

Permissible Pulse Load

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

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


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

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

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

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


[illegible]

2005, June
Date code

BAR63-02V
Type code

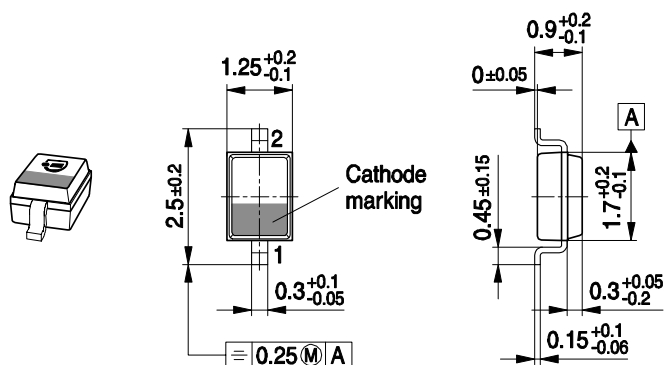
Cathode marking
Laser marking

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

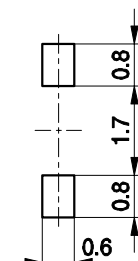
Month	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
01	a	p	A	P	a	p	A	P	a	p	A	P
02	b	q	B	Q	b	q	B	Q	b	q	B	Q
03	c	r	C	R	c	r	C	R	c	r	C	R
04	d	s	D	S	d	s	D	S	d	s	D	S
05	e	t	E	T	e	t	E	T	e	t	E	T
06	f	u	F	U	f	u	F	U	f	u	F	U
07	g	v	G	V	g	v	G	V	g	v	G	V
08	h	x	H	X	h	x	H	X	h	x	H	X
09	j	y	J	Y	j	y	J	Y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

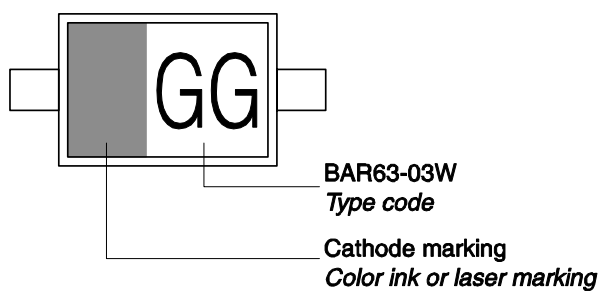
Package Outline



Foot Print

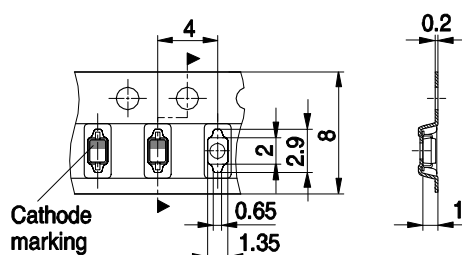


Marking Layout (Example)



Standard Packing

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



[illegible]

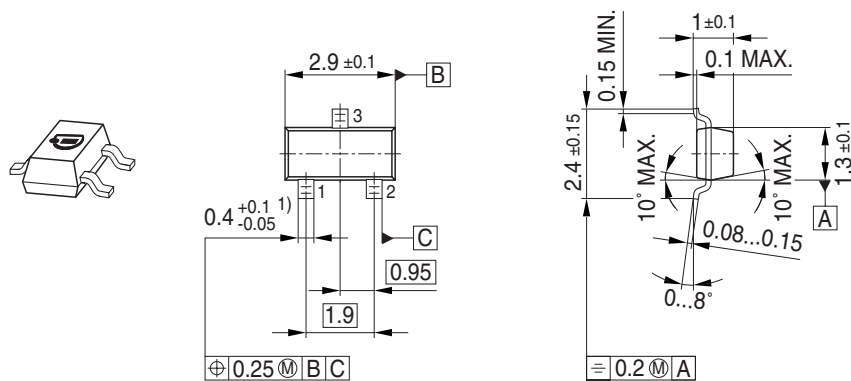
Diagram illustrating the marking on the BFP181 package:

- Manufacturer:** Infineon
- Date code (YM):** 2005, June
- Pin 1:** Indicated by a line pointing to the bottom-left pin.
- Type code:** BFP181

Technical drawing of a mechanical part showing top and side views with dimensions:

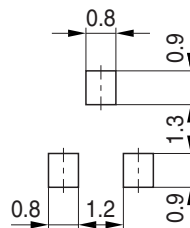
- Top View Dimensions:**
 - Overall width: 4
 - Overall height: 8
 - Distance from left edge to center of first hole: 3.15
 - Distance between centers of first and second holes: 2.6
 - Distance between centers of second and third holes: 2.6
 - Distance from center of third hole to right edge: 2.6
- Side View Dimensions:**
 - Overall thickness: 0.2
 - Distance from bottom edge to center of hole: 1.15
- Other Features:**
 - Three circular holes are shown in the top view.
 - A rectangular feature is shown on the left side of the top view.
 - A dimension line labeled "Pin 1" points to the left edge of the rectangular feature.

Package Outline

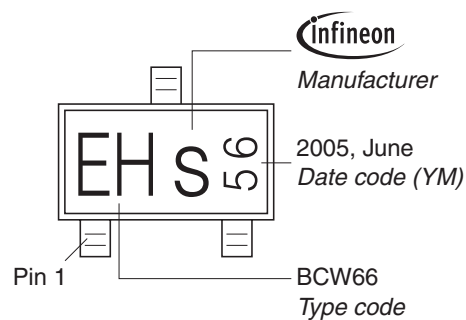


1) Lead width can be 0.6 max. in dambar area

Foot Print

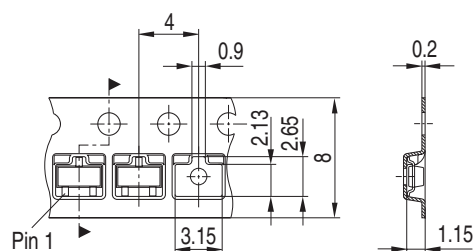


Marking Layout (Example)

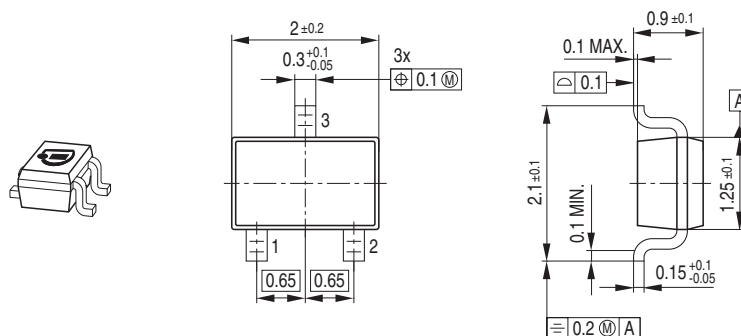


Standard Packing

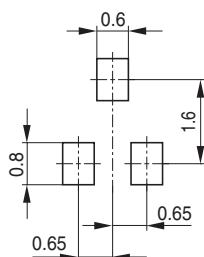
Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



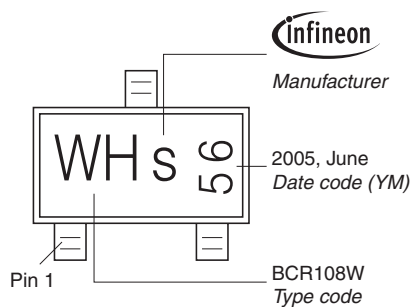
Package Outline



Foot Print

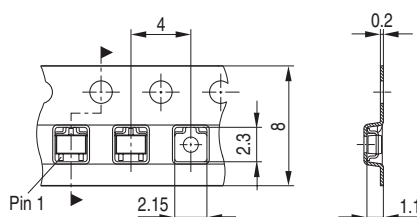


Marking Layout (Example)

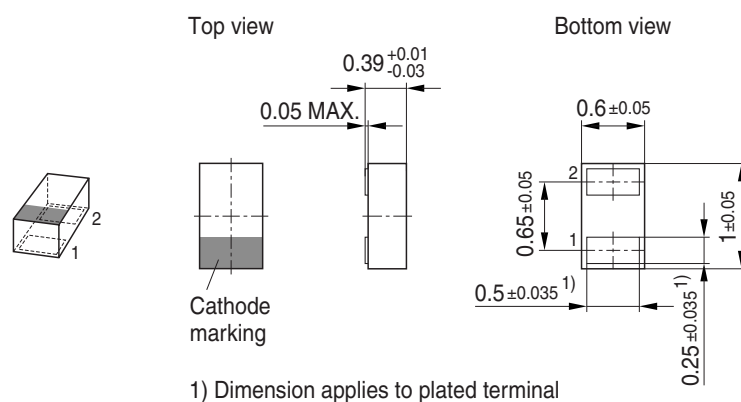


Standard Packing

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

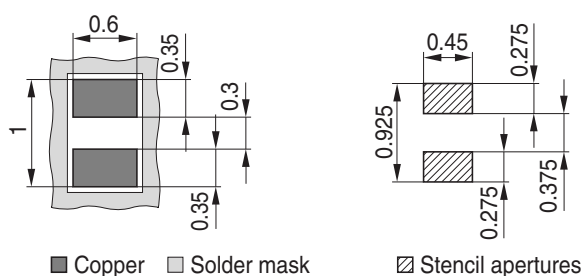


Package Outline

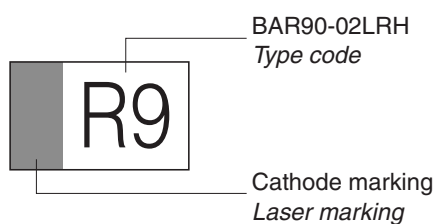


Foot Print

For board assembly information please refer to Infineon website "Packages"

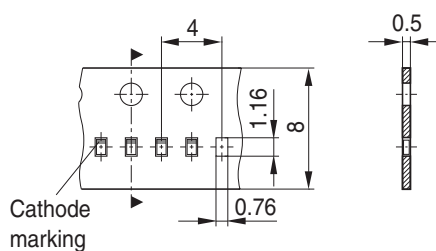


Marking Layout (Example)



Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel
Reel ø330 mm = 50.000 Pieces/Reel (optional)



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