

Silicon Schottky Diode

- General-purpose diode for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- Pb-free (RoHS compliant) package
- Qualified according AEC Q101¹⁾



BAS140W **BAS40-02L**



BAS40



BAS40-04



BAS40-05 **BAS40-05W**



BAS40-06 **BAS40-06W**



BAS40-07 **BAS40-07W**



ESD (Electrostatic discharge) sensitive device, observe handling precaution!

Type	Package	Configuration	Marking
BAS140W	SOD323	single	white 4
BAS40	SOT23	single	43s
BAS40-02L *	TSLP-2-1	single, leadless	FF
BAS40-04	SOT23	series	44s
BAS40-05	SOT23	common cathode	45s
BAS40-05W	SOT323	common cathode	45s
BAS40-06	SOT23	common anode	46s
BAS40-06W	SOT323	common anode	46s
BAS40-07	SOT143	parallel pair	47s
BAS40-07W	SOT343	parallel pair	47s

¹⁾ BAS40-02L is not qualified according AEC Q101

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

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	40	V
Forward current	I_F	120	mA
Non-repetitive peak surge forward current $t \leq 10\text{ms}$	I_{FSM}	200	
Total power dissipation BAS140W, $T_S \leq 113\text{°C}$ BAS40, BAS40-07, $T_S \leq 81\text{°C}$ BAS40-02L, $T_S \leq 127\text{°C}$ BAS40-04, BAS40-06, $T_S \leq 56\text{°C}$ BAS40-06W, $T_S \leq 106\text{°C}$ BAS40-05, $T_S \leq 31\text{°C}$ BAS40-05W, $T_S \leq 98\text{°C}$ BAS40-07W, $T_S \leq 118\text{°C}$	P_{tot}	250 250 250 250 250 250 250 250	mW
Junction temperature	T_j	150	°C
Operating temperature range	T_{op}	-55 ... 150	
Storage temperature	T_{stg}	-55 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAS140W		≤ 150	
BAS40, BAS40-07		≤ 275	
BAS40-02L		≤ 90	
BAS40-04, BAS40-06		≤ 375	
BAS40-06W		≤ 175	
BAS40-05		≤ 475	
BAS40-05W		≤ 205	
BAS40-07W		≤ 125	

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

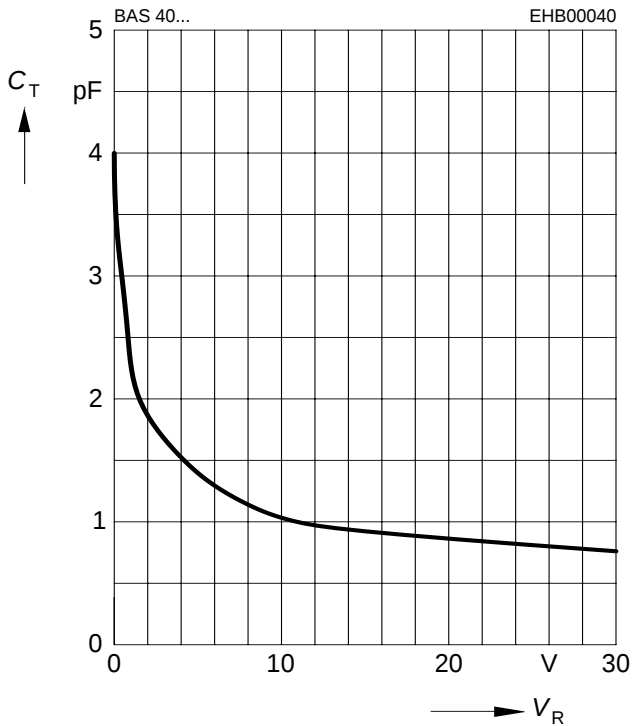
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 10\ \mu\text{A}$	$V_{(BR)}$	40	-	-	V
Reverse current $V_R = 30\ \text{V}$	I_R	-	-	1	μA
Forward voltage $I_F = 1\ \text{mA}$ $I_F = 10\ \text{mA}$ $I_F = 40\ \text{mA}$	V_F	250 350 600	310 450 720	380 500 1000	mV
Forward voltage matching ¹⁾ $I_F = 10\ \text{mA}$	ΔV_F	-	-	20	
AC Characteristics					
Diode capacitance $V_R = 0$, $f = 1\ \text{MHz}$	C_T	-	3	5	pF
Differential forward resistance $I_F = 10\ \text{mA}$, $f = 10\ \text{kHz}$	R_F	-	10	-	Ω
Charge carrier life time $I_F = 25\ \text{mA}$	τ_{rr}	-	-	100	ps

¹⁾ ΔV_F is the difference between lowest and highest V_F in a multiple diode component.

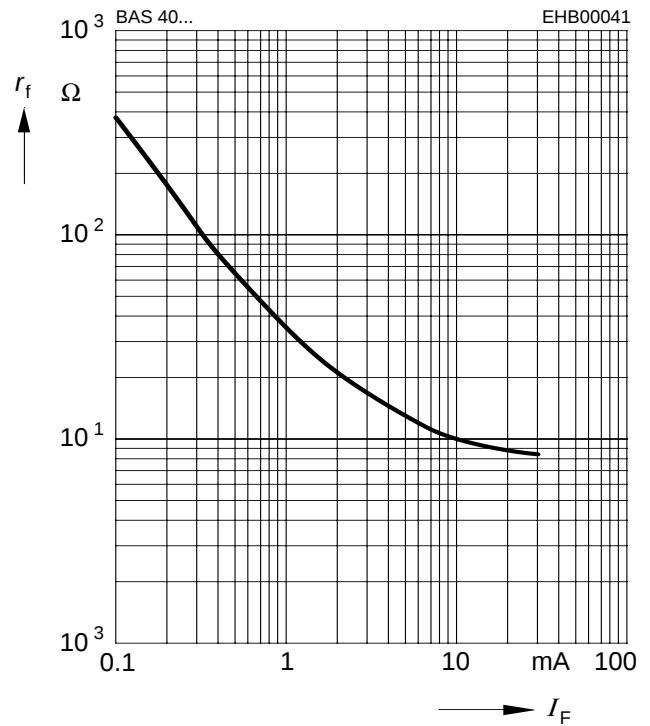
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



Forward resistance $r_f = f(I_F)$

$f = 10\text{kHz}$



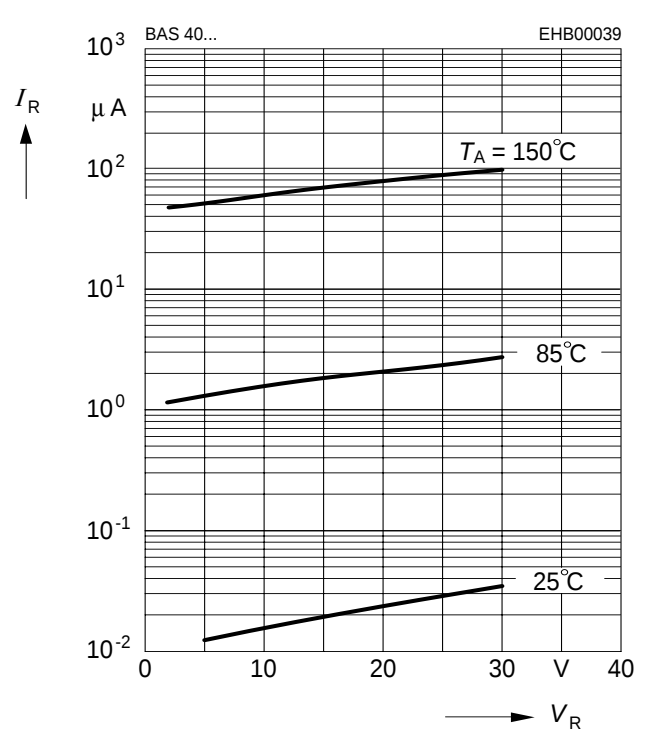
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$



Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$



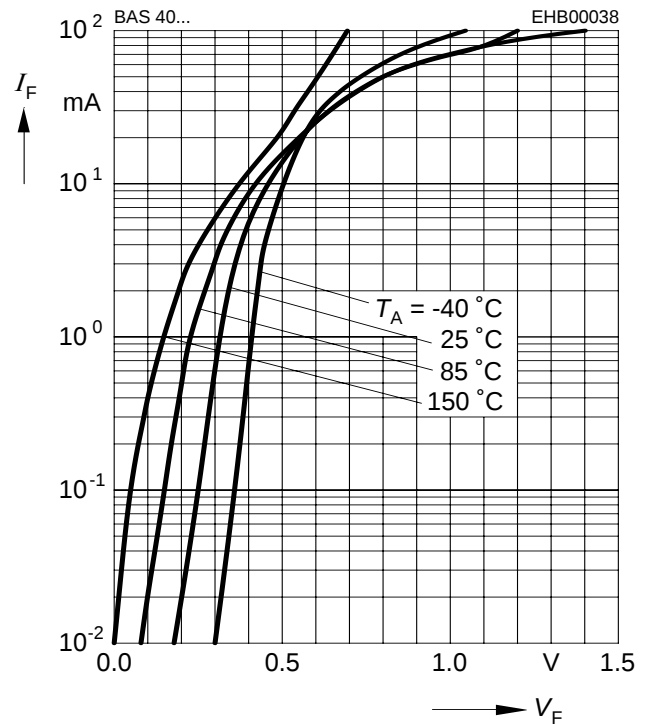
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



Forward current $I_F = f(V_F)$

T_A = Parameter



Forward current $I_F = f(T_S)$

BAS140W



Forward current $I_F = f(T_S)$

BAS40, BAS40-07



Forward current $I_F = f(T_S)$

BAS40-02L



Forward current $I_F = f(T_S)$

BAS40-04, BAS40-06



Forward current $I_F = f(T_S)$

BAS40-06W



Forward current $I_F = f(T_S)$

BAS40-05



Forward current $I_F = f(T_S)$

BAS40-05W



Forward current $I_F = f(T_S)$

BAS40-07W



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

BAS140W



Permissible Pulse Load

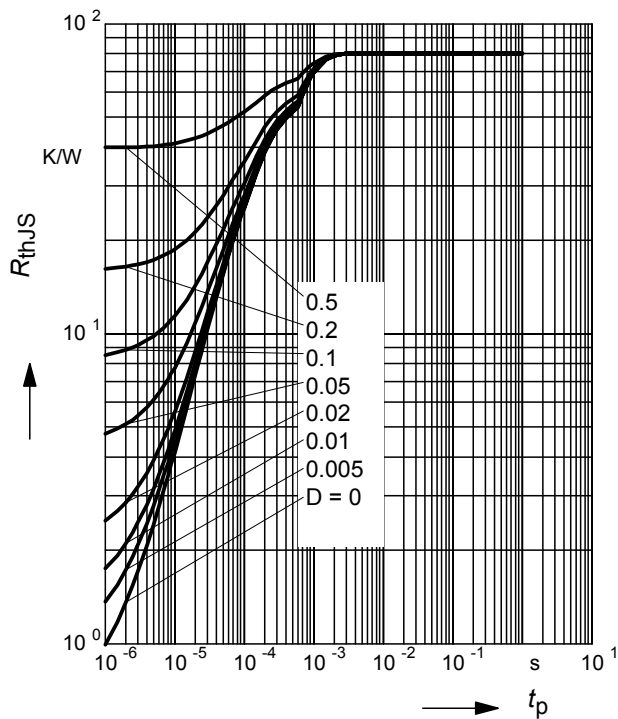
$I_{Fmax}/I_{FDC} = f(t_p)$

BAS140W



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

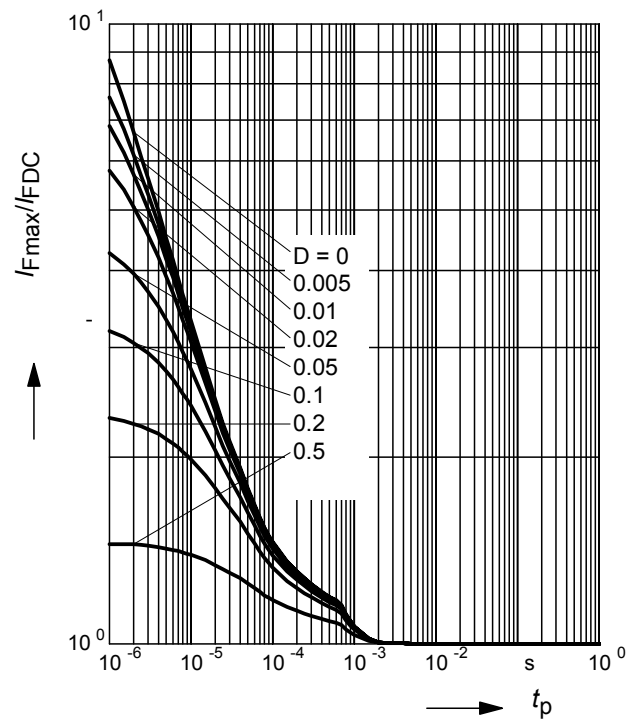
BAS40-02L



Permissible Pulse Load

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

BAS40-02L



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

BAS40-06W



Permissible Pulse Load

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

BAS40-06W



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

BAS40-05W



Permissible Pulse Load

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

BAS40-05W



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

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



Technical drawing of a 4-pin connector. The drawing includes a perspective view of the component and two detailed cross-sectional views (A and B) showing internal dimensions and tolerances.

Dimensions and Tolerances:

- Overall width: 2.9 ± 0.1
- Pin spacing (center-to-center): 1.9
- Pin diameter: 0.2
- Pin length: $0.8^{+0.1}_{-0.05}$
- Pin thickness: $0.4^{+0.1}_{-0.05}$
- Pin width: 1.7
- Pin thickness (cross-section A): 1.3 ± 0.1
- Pin thickness (cross-section B): 0.15 MIN.
- Pin thickness (cross-section C): 0.1 MAX.
- Pin thickness (cross-section D): $0.08 \dots 0.15$
- Pin thickness (cross-section E): $0 \dots 8^\circ$
- Pin thickness (cross-section F): 10° MAX.
- Pin thickness (cross-section G): 10° MAX.
- Pin thickness (cross-section H): 0.2 MIN.
- Pin thickness (cross-section I): 0.25 MIN.
- Pin thickness (cross-section J): 0.2 MIN.

Diagram illustrating the marking on the BFP181 package:

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

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 first hole center: 3.15
 - Distance between hole centers: 2.6
 - Distance from last hole center to right edge: 2.6
- Side View Dimensions:**
 - Overall thickness: 0.2
 - Distance from bottom edge to hole center: 1.15
- Other Features:**
 - Three circular holes are shown in the top view.
 - A rectangular feature labeled "Pin 1" is located on the left side.
 - Section lines are present in the side view, indicating a cross-section.

Package Outline

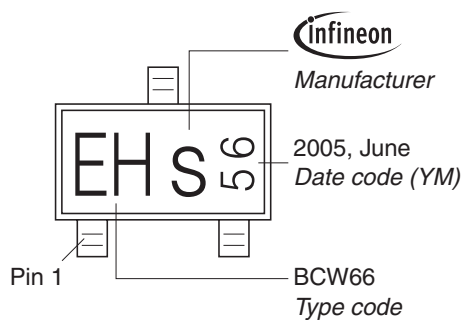


1) Lead width can be 0.6 max. in dambar area

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)

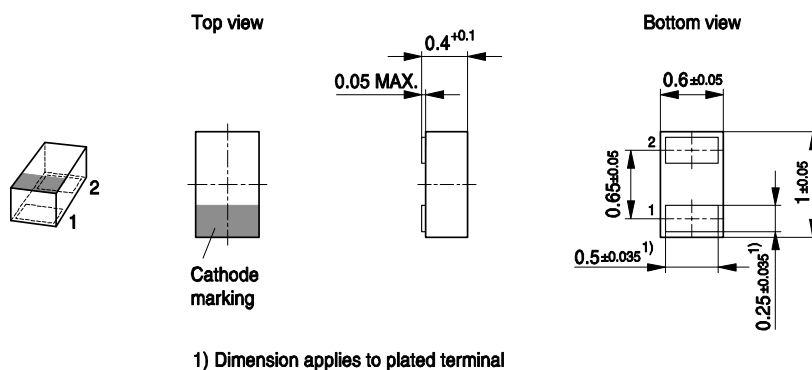


Standard Packing

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