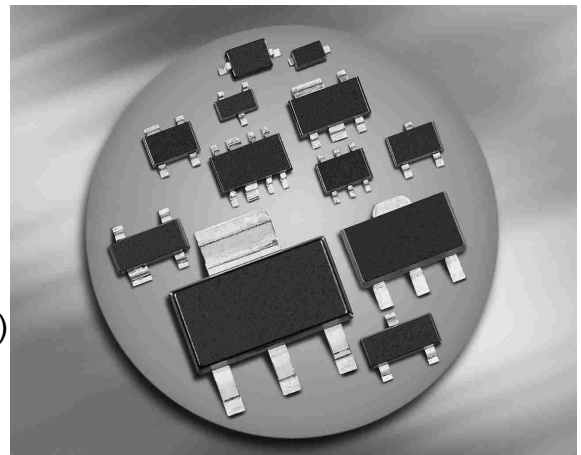
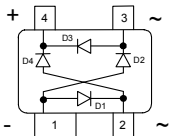


Low VF Schottky Diode Array

- Reverse voltage: 40 V
- Forward current: 0.2 A
- Small diode quad array for polarity independence, reverse polarity protection and low loss bridge rectification
- Very low forward voltage: 0.55 @ 0.1 A (per diode)
- Fast switching
- Pb-free (ROHS compliant) package
- Qualified according AEC Q101



BAS4002A-RPP



Type	Package	Configuration	Marking
BAS4002A-RPP	SOT143	bridge	E9s

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

Parameter	Symbol	Value	Unit
Diode reverse voltage ¹⁾	V_R	40	V
Peak reverse voltage ¹⁾	V_{RM}	40	
RMS reverse voltage ¹⁾	$V_{R(RMS)}$	28	
Forward current ¹⁾ , $T_S \leq 124\text{ °C}$	I_F	200	mA
Non-repetitive peak surge forward current ($t \leq 10\text{ ms}$)	I_{FSM}	2	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ²⁾	R_{thJS}	≤ 130	K/W

¹⁾For $T_A > 25\text{ °C}$ the derating of V_R and I_F has to be considered.

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

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

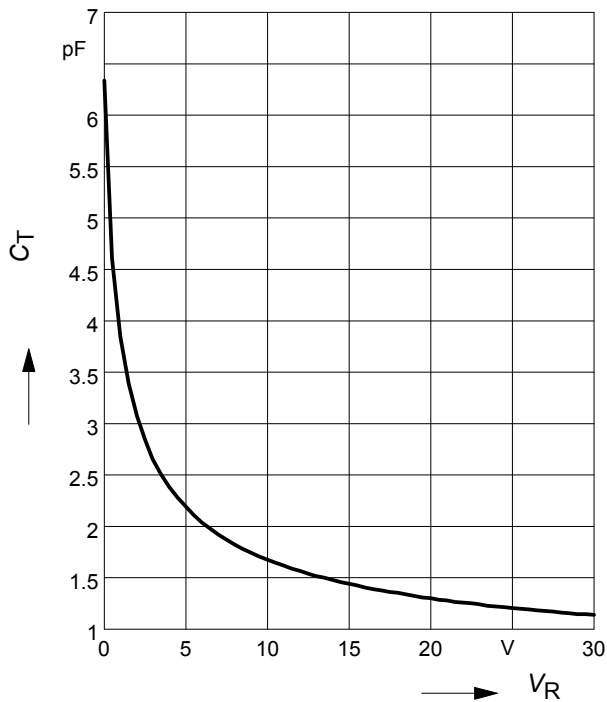
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Reverse current ¹⁾ (per diode) $V_R = 30\text{ V}$ $V_R = 40\text{ V}$	I_R	 - -	 - -	 2 10	μA
Forward voltage ^{1) 2)} (per diode) $I_F = 10\text{ mA}$ $I_F = 60\text{ mA}$ $I_F = 100\text{ mA}$ $I_F = 200\text{ mA}$	V_F	 - - - -	 0.39 0.49 0.55 0.69	 0.44 0.55 0.62 0.79	V
AC Characteristics					
Diode capacitance (per diode) $V_R = 5\text{ V}, f = 1\text{ MHz}$	C_T	 -	 2	 5	pF

¹Pulsed test, $t_p = 300\text{ }\mu\text{s}$; $D = 0.01$

²When used as shown for Reverse Polarity Protection (RPP, see page 4), the voltage available to the circuit being protected will be two diode drops below the power supply voltage. In other words, the supply current will pass through two diodes.

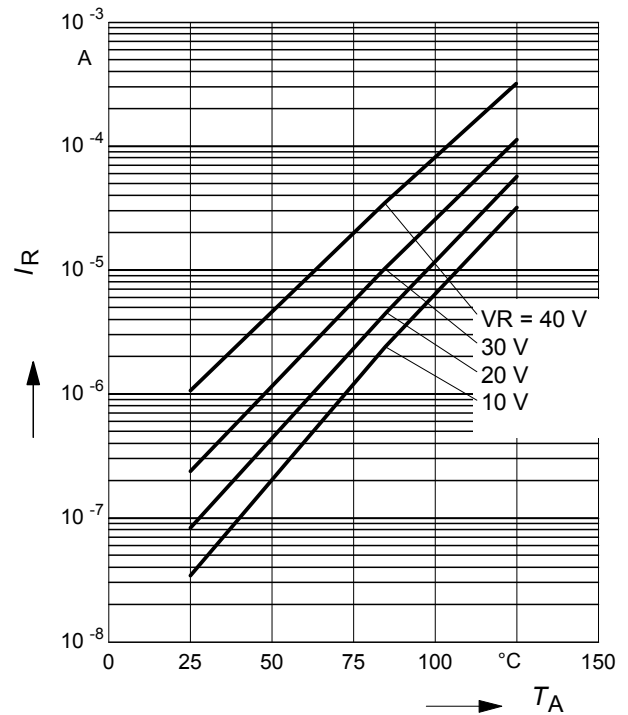
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$ (per diode)



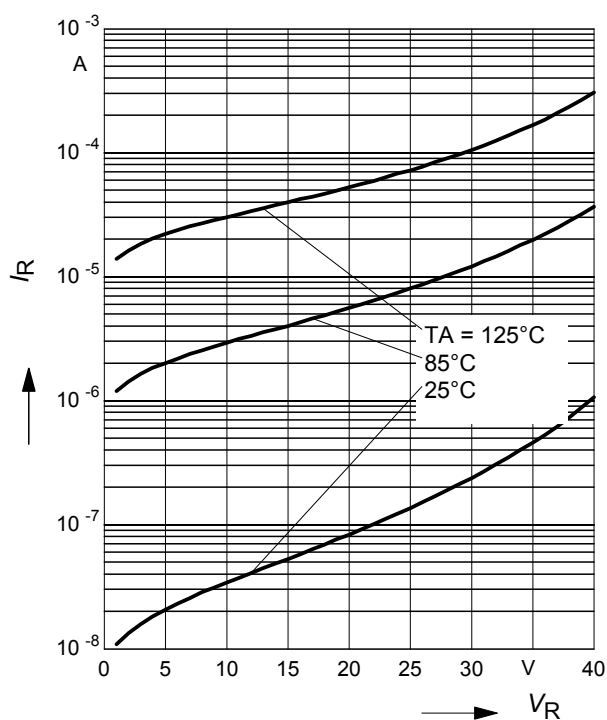
Reverse current $I_R = f(T_A)$

$V_R = \text{Parameter}$ (per diode)



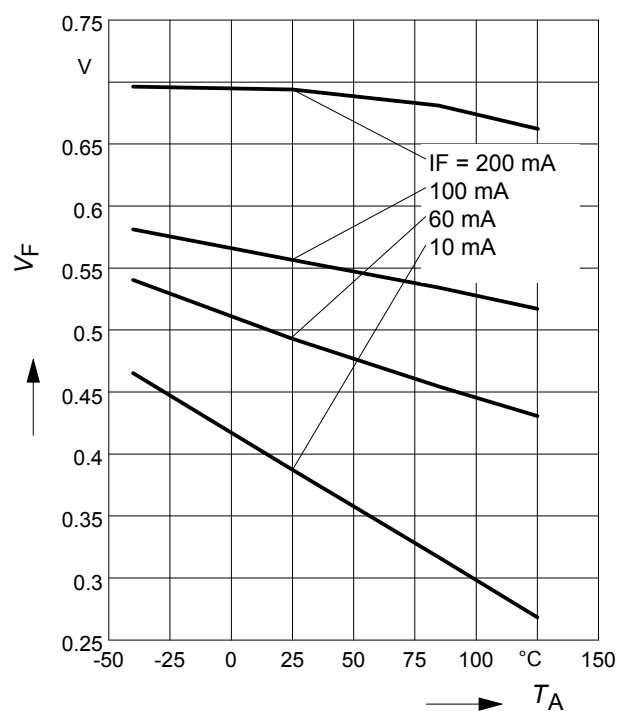
Reverse current $I_R = f(V_R)$

$T_A = \text{Parameter}$ (per diode)

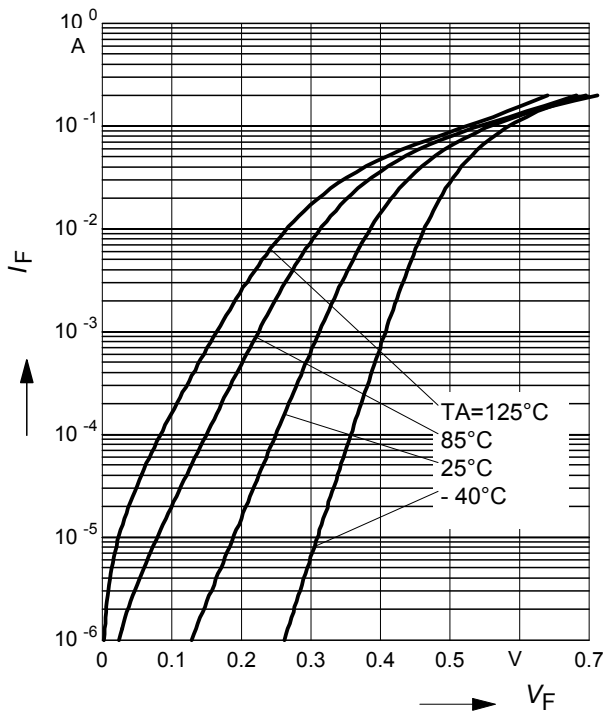


Forward Voltage $V_F = f(T_A)$

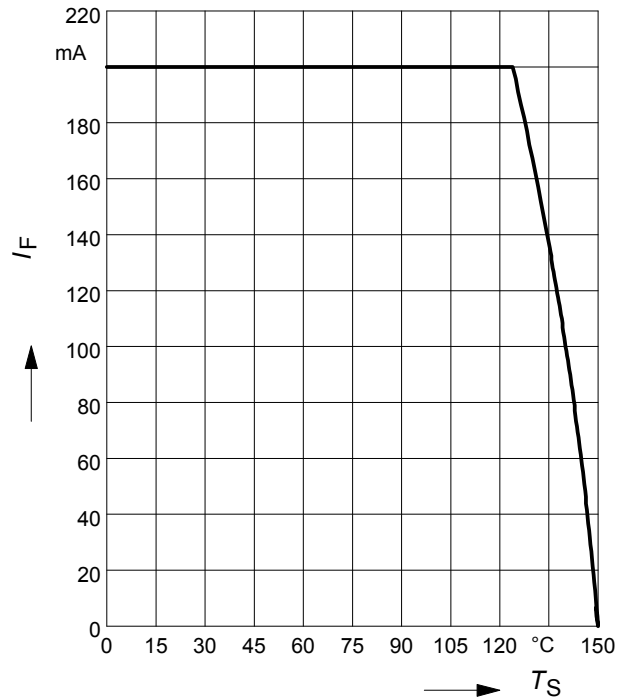
$I_F = \text{Parameter}$ (per diode)



Forward current $I_F = f(V_F)$
(per diode)

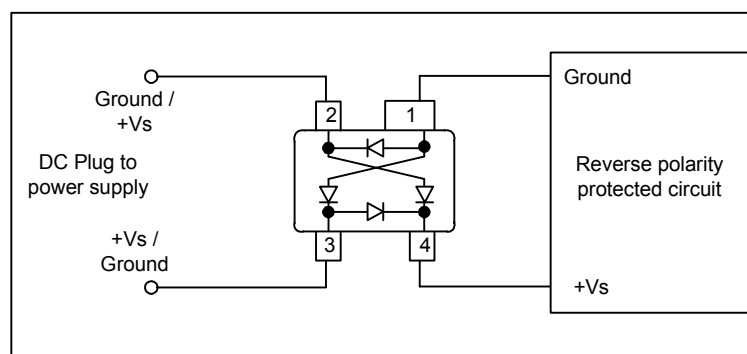


Forward current $I_F = f(T_S)$
BAS4002-RPP



Application example BAS4002A-RPP

Advanced Reverse Polarity Protection(RPP): due to diode orientation, circuit at the right will be protected from damage and will also function normally in the event reverse polarity is applied to pins 2 and 3 of the BAS4002A-RPP.



Technical drawing of a 4-pin D-sub connector. The drawing includes a perspective view of the connector on the left and two detailed cross-sectional views on the right. The left cross-section shows the internal structure with pins 1, 2, 3, and 4, and dimensions for the housing and pins. The right cross-section shows the contact area with dimensions for the contact thickness, contact angle, and contact width. The drawing is labeled with 'A' and 'B' for different views and includes a table of dimensions.

Symbol	Value	Unit
$\ominus$	0.25	mm
$\oplus$	0.25	mm
$\ominus$	0.2	mm
$\oplus$	0.2	mm
$\ominus$	0.15	mm
$\oplus$	0.15	mm
$\ominus$	0.1	mm
$\oplus$	0.1	mm
$\ominus$	0.08...0.15	mm
$\oplus$	0.08...0.15	mm
$\ominus$	0...8°	°
$\oplus$	0...8°	°
$\ominus$	10° MAX.	°
$\oplus$	10° MAX.	°
$\ominus$	1±0.1	mm
$\oplus$	1±0.1	mm
$\ominus$	0.1 MAX.	mm
$\oplus$	0.1 MAX.	mm
$\ominus$	0.15 MIN.	mm
$\oplus$	0.15 MIN.	mm
$\ominus$	2.4±0.15	mm
$\oplus$	2.4±0.15	mm
$\ominus$	1.7	mm
$\oplus$	1.7	mm
$\ominus$	0.4 ^{+0.1} _{-0.05}	mm
$\oplus$	0.4 ^{+0.1} _{-0.05}	mm
$\ominus$	0.8 ^{+0.1} _{-0.05}	mm
$\oplus$	0.8 ^{+0.1} _{-0.05}	mm
$\ominus$	0.2	mm
$\oplus$	0.2	mm
$\ominus$	1.9	mm
$\oplus$	1.9	mm
$\ominus$	2.9±0.1	mm
$\oplus$	2.9±0.1	mm

Figure 1 illustrates the marking on the BFP181 package. The marking consists of the letters 'RF', the letter 'S', and the number '56'. The 'infineon' logo is located above the marking. The date code '2005, June' is indicated by the '56'. The pin number 'Pin 1' is indicated by the 'S'. The type code 'BFP181' is indicated by the 'RF'.

Technical drawing of a mechanical part, likely a bracket or support. The drawing includes a top view and a side view. The top view shows a rectangular base with a width of 4 and a height of 8. There are three rectangular slots along the bottom edge, each with a width of 3.15 and a height of 2.6. A pin is located at the bottom left corner, labeled "Pin 1". The side view shows a thickness of 0.2 and a height of 1.15.

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