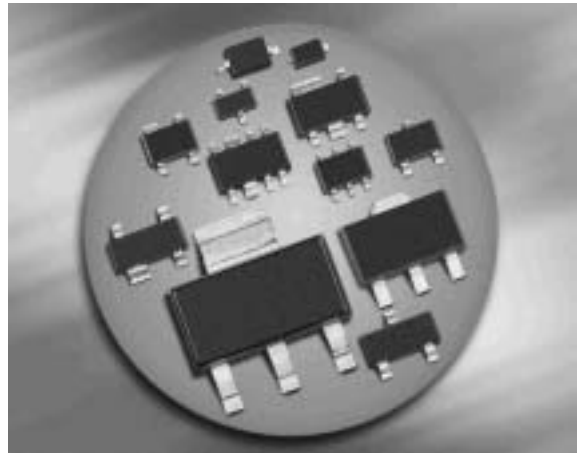
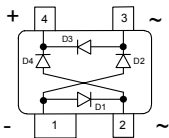


### Low VF Schottky Diode Array

- Reverse voltage: 30 V
- Forward current: 0.9 A
- Small diode quad array for polarity independence, reverse polarity protection and low loss bridge rectification
- Very low forward voltage:  
0.5 V typ. @ 0.7 A (per diode)
- Fast switching
- Pb-free (ROHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BAS3007A-RPP



| Type         | Package | Configuration | Marking |
|--------------|---------|---------------|---------|
| BAS3007A-RPP | SOT143  | bridge        | E1s     |

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

| Parameter                                                      | Symbol       | Value       | Unit             |
|----------------------------------------------------------------|--------------|-------------|------------------|
| Diode reverse voltage <sup>2)</sup>                            | $V_R$        | 30          | V                |
| Peak reverse voltage <sup>2)</sup>                             | $V_{RM}$     | 30          |                  |
| RMS reverse voltage <sup>2)</sup>                              | $V_{R(RMS)}$ | 21          |                  |
| Forward current <sup>2)</sup>                                  | $I_F$        |             | mA               |
| $T_S \leq 46^\circ\text{C}$                                    |              | 900         |                  |
| $T_S \leq 82^\circ\text{C}$                                    |              | 700         |                  |
| Non-repetitive peak surge forward current<br>( $t \leq 10$ ms) | $I_{FSM}$    | 5           | A                |
| Junction temperature                                           | $T_j$        | 150         | $^\circ\text{C}$ |
| Storage temperature                                            | $T_{stg}$    | -65 ... 150 |                  |

<sup>1</sup>Pb-containing package may be available upon special request

<sup>2</sup>For  $T_A > 25^\circ\text{C}$  the derating of  $V_R$  and  $I_F$  has to be considered. Please refer to the attached curves.

**Thermal Resistance**

| Parameter                                | Symbol     | Value     | Unit |
|------------------------------------------|------------|-----------|------|
| Junction - soldering point <sup>1)</sup> | $R_{thJS}$ | $\leq 95$ | K/W  |

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

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

**DC Characteristics**

|                                             |       |   |      |      |               |
|---------------------------------------------|-------|---|------|------|---------------|
| Reverse current (per diode) <sup>2)</sup>   | $I_R$ |   |      |      | $\mu\text{A}$ |
| $V_R = 12\text{ V}$                         |       | - | -    | 30   |               |
| $V_R = 30\text{ V}$                         |       | - | -    | 350  |               |
| Forward voltage (per diode) <sup>2)3)</sup> | $V_F$ |   |      |      | V             |
| $I_F = 100\text{ mA}$                       |       | - | 0.35 | 0.4  |               |
| $I_F = 350\text{ mA}$                       |       | - | 0.4  | 0.5  |               |
| $I_F = 500\text{ mA}$                       |       | - | 0.45 | 0.55 |               |
| $I_F = 700\text{ mA}$                       |       | - | 0.5  | 0.6  |               |
| $I_F = 900\text{ mA}$                       |       | - | 0.6  | 0.7  |               |

**AC Characteristics**

|                                         |       |   |   |    |    |
|-----------------------------------------|-------|---|---|----|----|
| Diode capacitance (per diode)           | $C_T$ | - | 9 | 15 | pF |
| $V_R = 5\text{ V}$ , $f = 1\text{ MHz}$ |       |   |   |    |    |

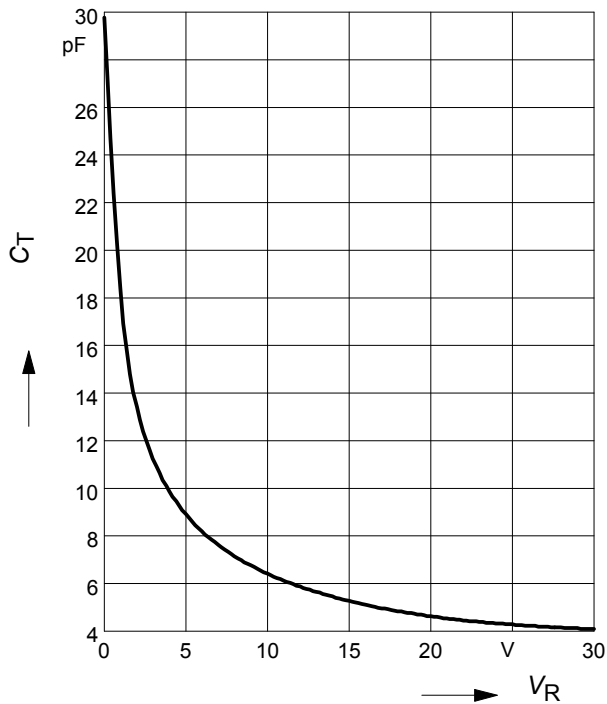
<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

<sup>2)</sup>Pulsed test,  $t_p = 300\text{ }\mu\text{s}$ ;  $D = 0.01$

<sup>3)</sup>When 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.

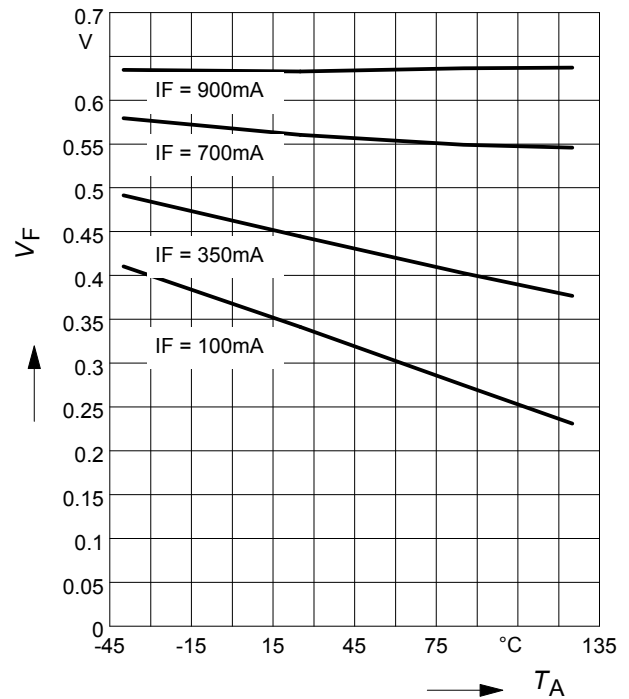
**Diode capacitance  $C_T = f(V_R)$**

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



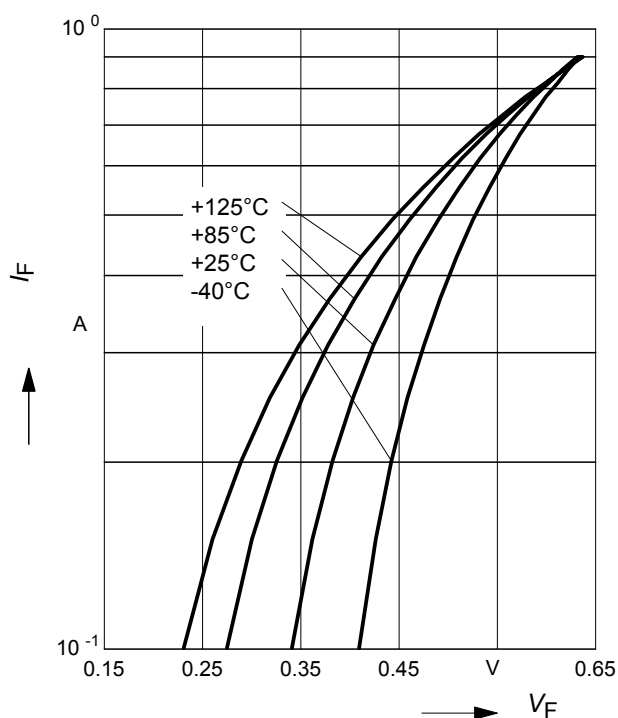
**Forward Voltage  $V_F = f(T_A)$**

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



**Forward current  $I_F = f(V_F)$**

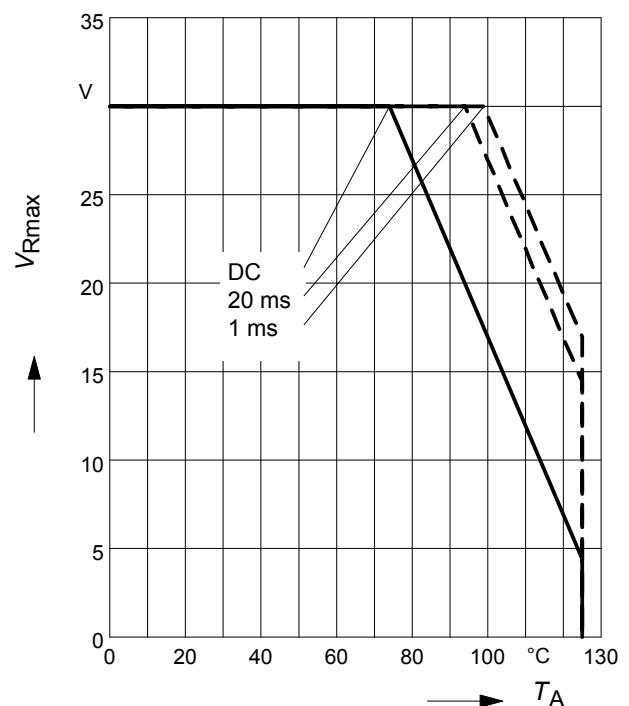
$T_A = \text{Parameter}$  (per diode)



**Permissible Reverse voltage  $V_R = f(T_A)$**

$t_p = \text{Parameter}$ , Duty cycle  $< 0.01$

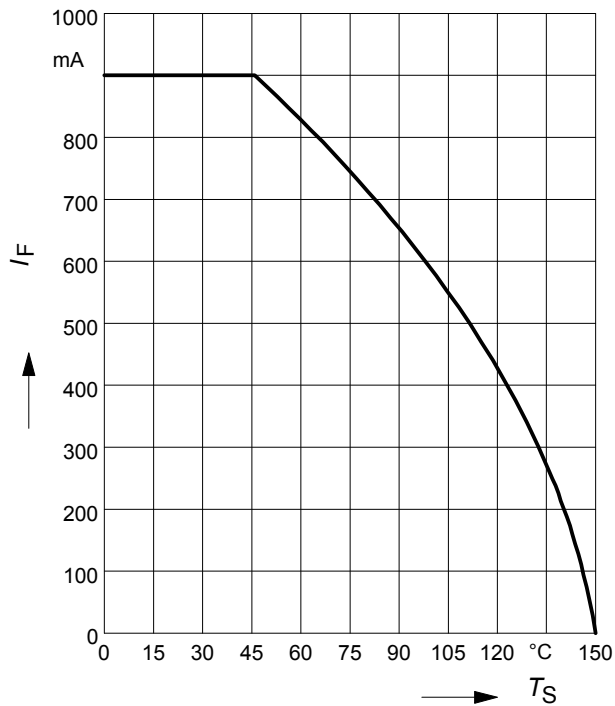
Device mounted on PCB with  $R_{th} = 160\text{ K/W}$



### Forward current $I_F = f(T_S)$

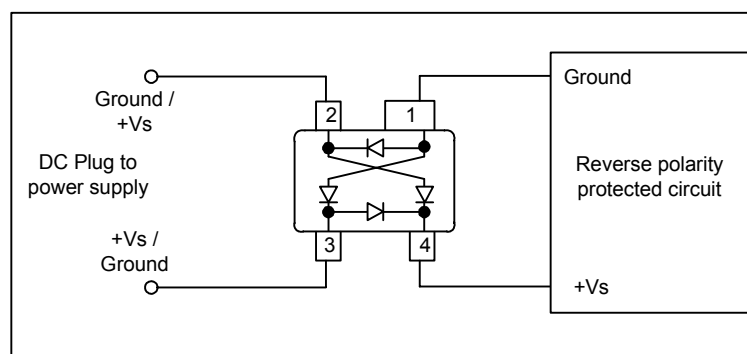
Current flows through two chips

per package at the same time (per array)

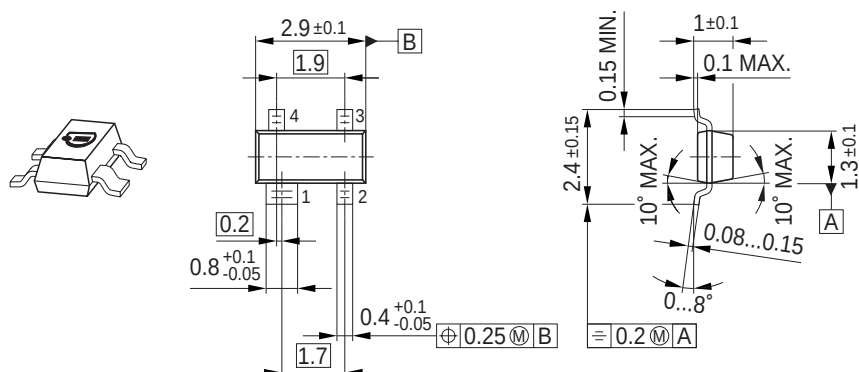


### Application example BAS3007A-RPP

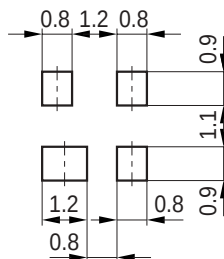
Advanced Reverse Polarity Protection(RPP): due to diode orientation, circuit at the right will be protected from damage and will also function normally in the event reverse polarity is applied to pins 2 and 3 of the BAS3007A-RPP.



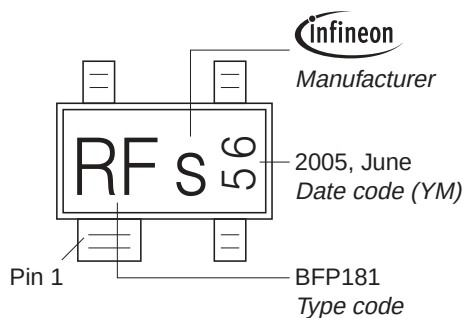
## Package Outline



## Foot Print

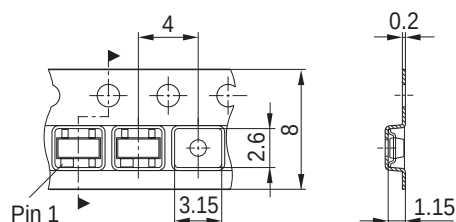


## Marking Layout (Example)



## Standard Packing

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



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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