

## Medium Power AF Schottky Diode

- Forward current: 1 A
- Reverse voltage: 30 V
- Low forward voltage, low reverse current
- For high efficiency DC/DC conversion, fast switching, protection and clamping applications
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BAS3010B-03W



| Type         | Package | Configuration | Marking |
|--------------|---------|---------------|---------|
| BAS3010B-03W | SOD323  | single        | 2/ red  |

#### 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                |
| Forward current <sup>2)</sup>                                                 | $I_F$     | 1           | A                |
| Average rectified forward current (50/60Hz, sinus)                            | $I_{FAV}$ | 1           |                  |
| Repetitive peak forward current<br>( $t_p \leq 1 \text{ ms}$ , $D \leq 0.5$ ) | $I_{FRM}$ | 3.5         |                  |
| Non-repetitive peak surge forward current<br>( $t \leq 10 \text{ ms}$ )       | $I_{FSM}$ | 10          |                  |
| Junction temperature                                                          | $T_j$     | 150         | $^\circ\text{C}$ |
| Operating temperature range                                                   | $T_{op}$  | -65 ... 125 |                  |
| 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> | $R_{thJS}$ | $\leq 82$ | 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 <sup>2)</sup> | $I_R$ |   |     |     | $\mu\text{A}$ |
| $V_R = 5\text{ V}$            |       | - | -   | 5   |               |
| $V_R = 10\text{ V}$           |       | - | -   | 10  |               |
| $V_R = 30\text{ V}$           |       | - | -   | 20  |               |
| Forward voltage <sup>2)</sup> | $V_F$ |   |     |     | $\text{mV}$   |
| $I_F = 1\text{ mA}$           |       | - | 230 | 280 |               |
| $I_F = 10\text{ mA}$          |       | - | 300 | 350 |               |
| $I_F = 100\text{ mA}$         |       | - | 360 | 420 |               |
| $I_F = 500\text{ mA}$         |       | - | 420 | 480 |               |
| $I_F = 1\text{ A}$            |       | - | 480 | 550 |               |

**AC Characteristics**

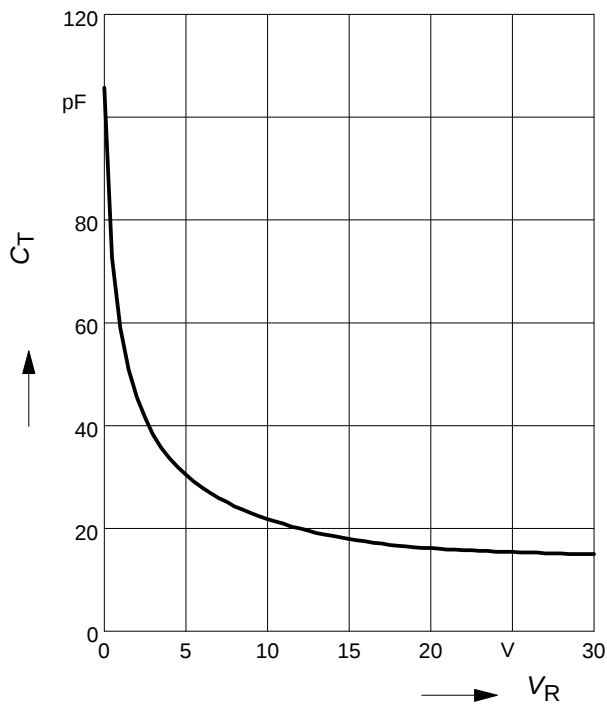
|                                      |       |   |    |    |             |
|--------------------------------------|-------|---|----|----|-------------|
| Diode capacitance                    | $C_T$ | - | 33 | 40 | $\text{pF}$ |
| $V_R = 5\text{ V}, f = 1\text{ MHz}$ |       |   |    |    |             |

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

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

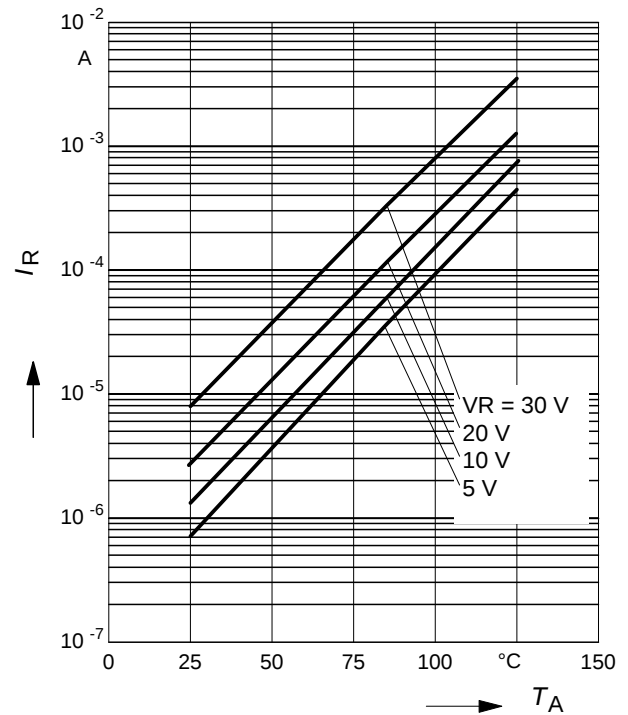
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



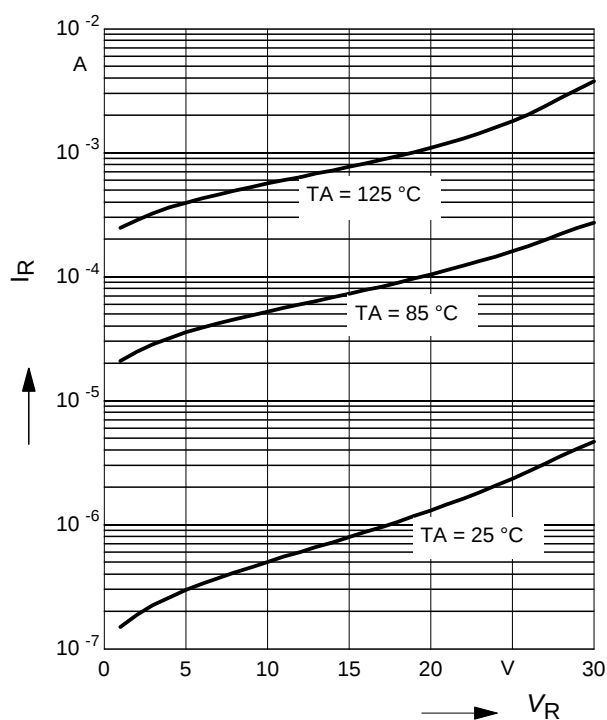
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$



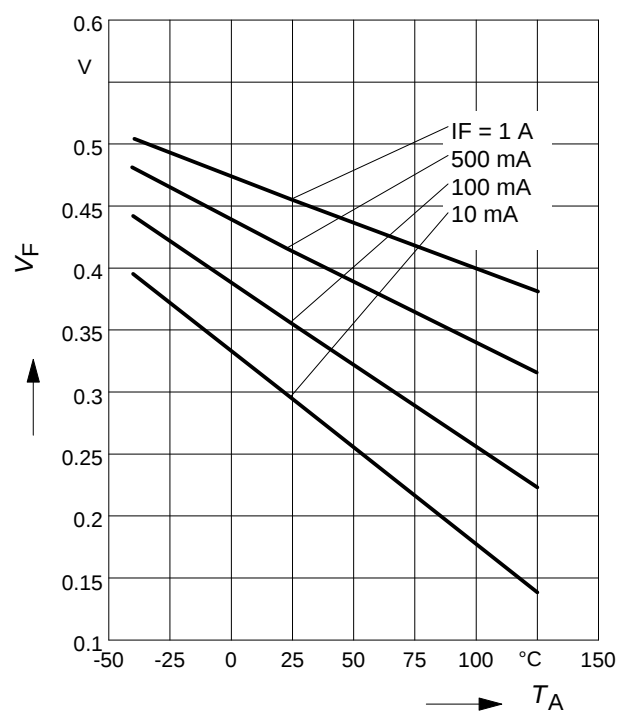
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$

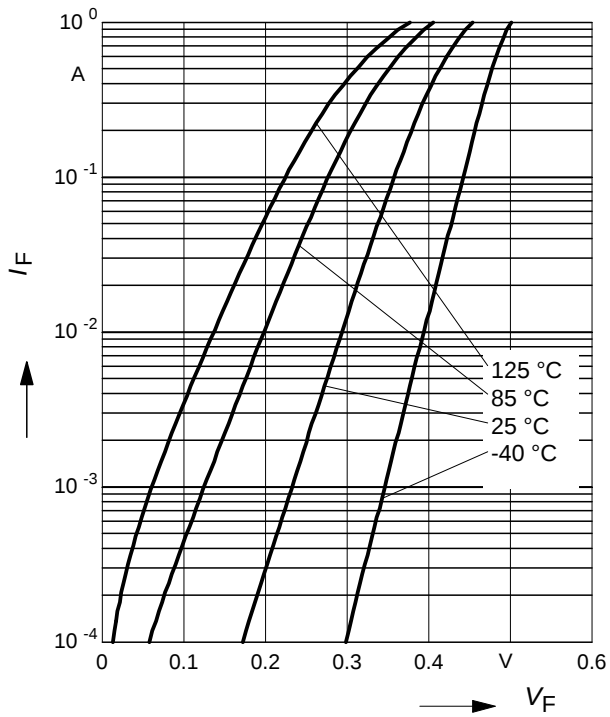


**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



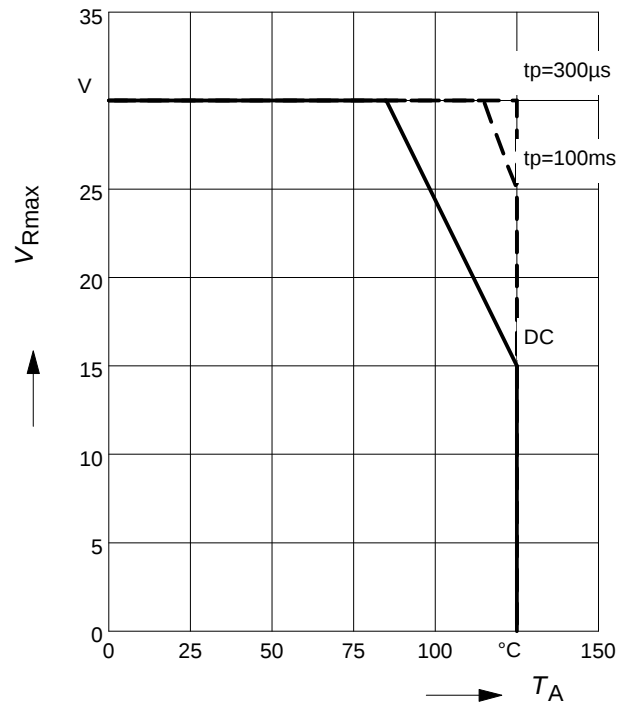
**Forward current  $I_F = f(V_F)$**



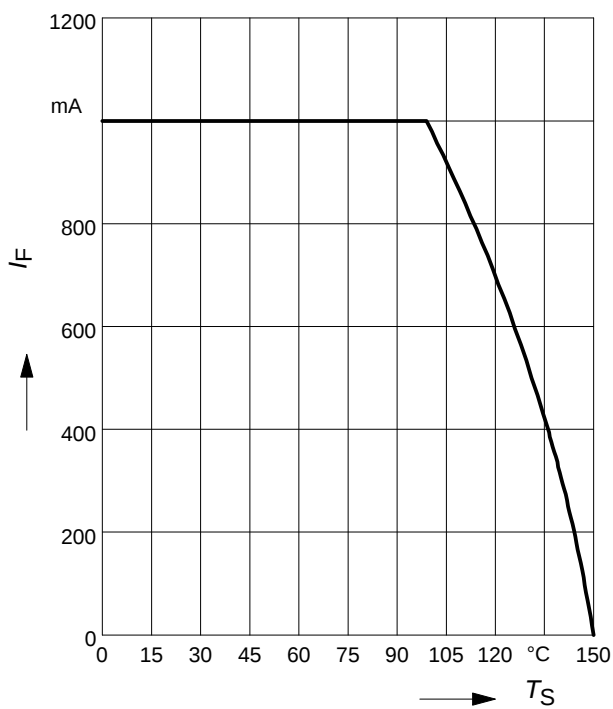
**Permissible Reverse voltage  $V_R = f(T_A)$**

$t_p$  = Parameter, Duty cycle < 0.01

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



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



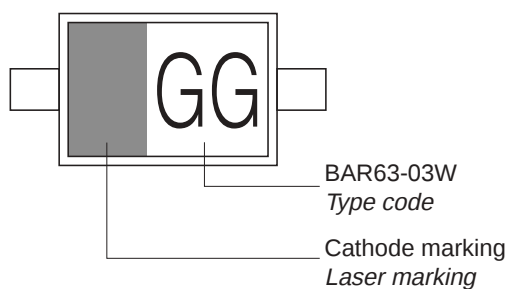
## Package Outline



## Foot Print

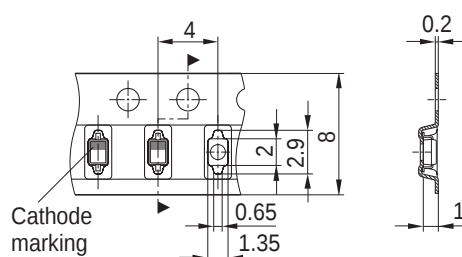


## Marking Layout (Example)



## Standard Packing

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



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