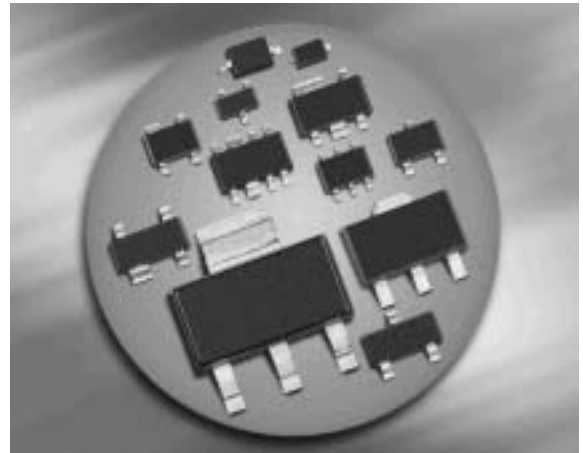
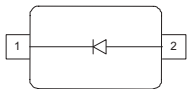


## Medium Power AF Schottky Diode

- Forward current: 750 mA  
Reverse voltage: 40 V
- For low-loss, fast-recovery, meter protection, bias isolation and clamping applications
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BAT165



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

| Type   | Package | Configuration | Marking |
|--------|---------|---------------|---------|
| BAT165 | SOD323  | single        | C/White |

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

| Parameter                                                             | Symbol    | Value       | Unit             |
|-----------------------------------------------------------------------|-----------|-------------|------------------|
| Diode reverse voltage <sup>2)</sup>                                   | $V_R$     | 40          | V                |
| Forward current <sup>2)</sup>                                         | $I_F$     | 750         | mA               |
| Average rectified forward current (50/60Hz, sinus)                    | $I_{FAV}$ | 500         | mA               |
| Non-repetitive peak surge forward current<br>( $t \leq 10\text{ms}$ ) | $I_{FSM}$ | 2.5         | A                |
| Total power dissipation<br>$T_S \leq 93^\circ\text{C}$                | $P_{tot}$ | 600         | mW               |
| Junction temperature                                                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                                                   | $T_{stg}$ | -65 ... 150 |                  |

### Thermal Resistance

| Parameter                                | Symbol     | Value     | Unit |
|------------------------------------------|------------|-----------|------|
| Junction - soldering point <sup>3)</sup> | $R_{thJS}$ | $\leq 95$ | K/W  |

<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.

<sup>3)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

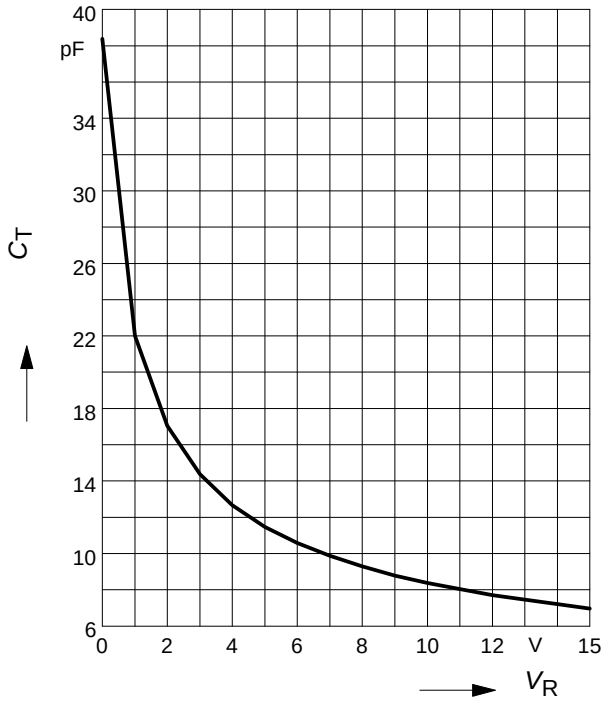
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter                                             | Symbol | Values |       |      | Unit          |
|-------------------------------------------------------|--------|--------|-------|------|---------------|
|                                                       |        | min.   | typ.  | max. |               |
| DC Characteristics                                    |        |        |       |      |               |
| Reverse current <sup>1)</sup>                         | $I_R$  |        |       |      | $\mu\text{A}$ |
| $V_R = 30\text{ V}$                                   |        | -      | -     | 12   |               |
| $V_R = 40\text{ V}$                                   |        | -      | -     | 50   |               |
| $V_R = 40\text{ V}, T_A = 65\text{ }^{\circ}\text{C}$ |        | -      | -     | 900  |               |
| Forward voltage                                       | $V_F$  |        |       |      | V             |
| $I_F = 10\text{ mA}$                                  |        | 0.23   | 0.315 | 0.4  |               |
| $I_F = 100\text{ mA}$                                 |        | 0.32   | 0.39  | 0.47 |               |
| $I_F = 250\text{ mA}$                                 |        | 0.35   | 0.44  | 0.54 |               |
| $I_F = 750\text{ mA}$                                 |        | 0.44   | 0.58  | 0.74 |               |
| AC Characteristics                                    |        |        |       |      |               |
| Diode capacitance                                     | $C_T$  | -      | 8.4   | 12   | pF            |
| $V_R = 10\text{ V}, f = 1\text{ MHz}$                 |        |        |       |      |               |

<sup>1</sup>Pulsed test:  $t_p = 300\text{ }\mu\text{s}$ ;  $D = 0.01$

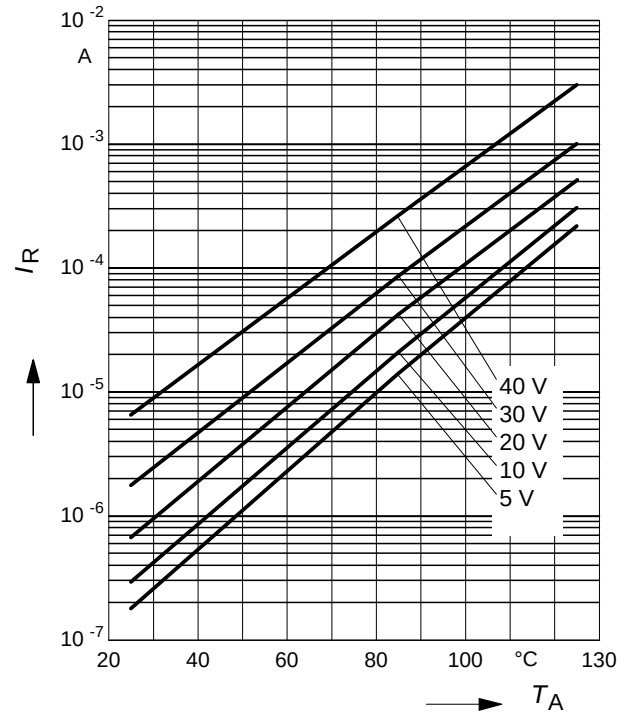
Diode capacitance  $C_T = f(V_R)$

$f = 1\text{MHz}$



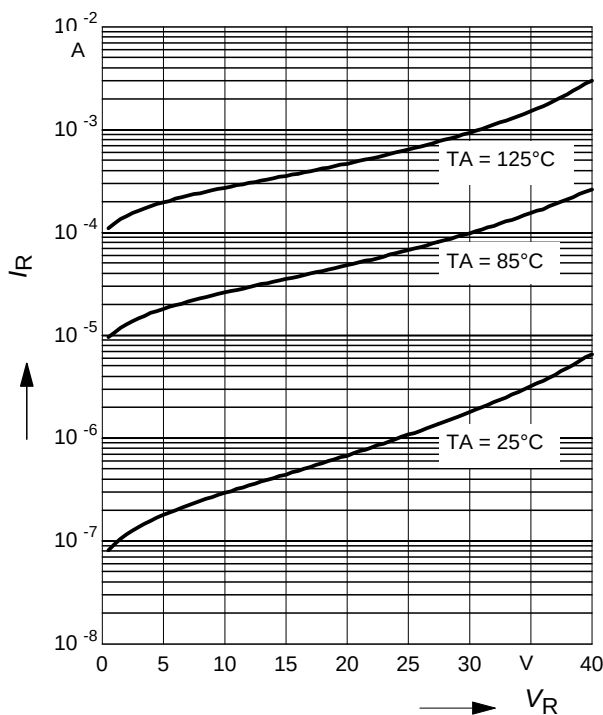
Reverse current  $I_R = f(T_A)$

$V_R = \text{Parameter}$



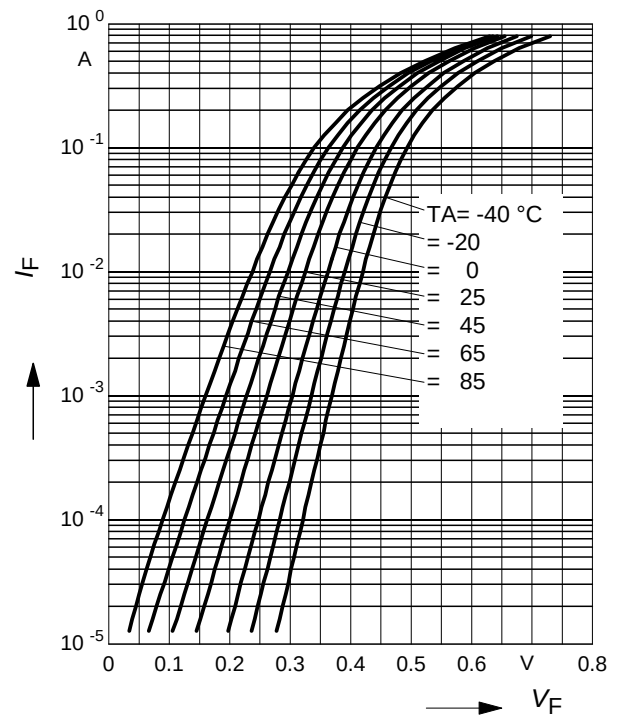
Reverse current  $I_R = f(V_R)$

$T_A = \text{Parameter}$



Forward current  $I_F = f(V_F)$

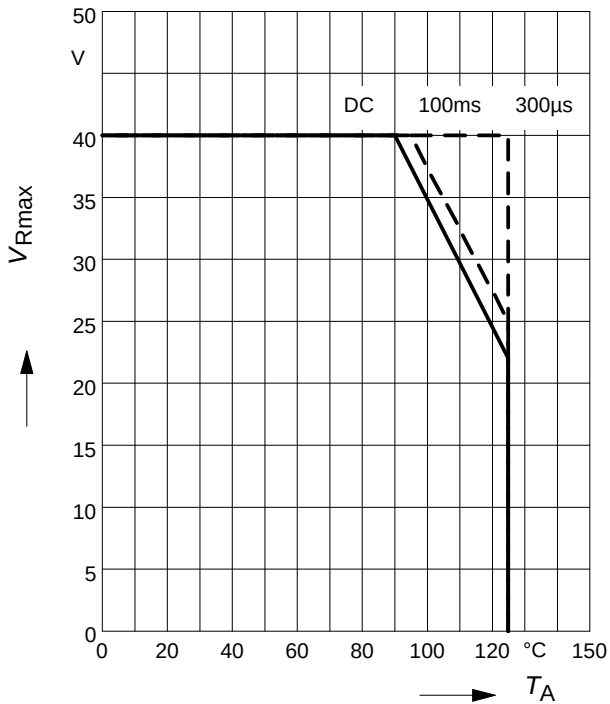
$T_A = \text{Parameter}$



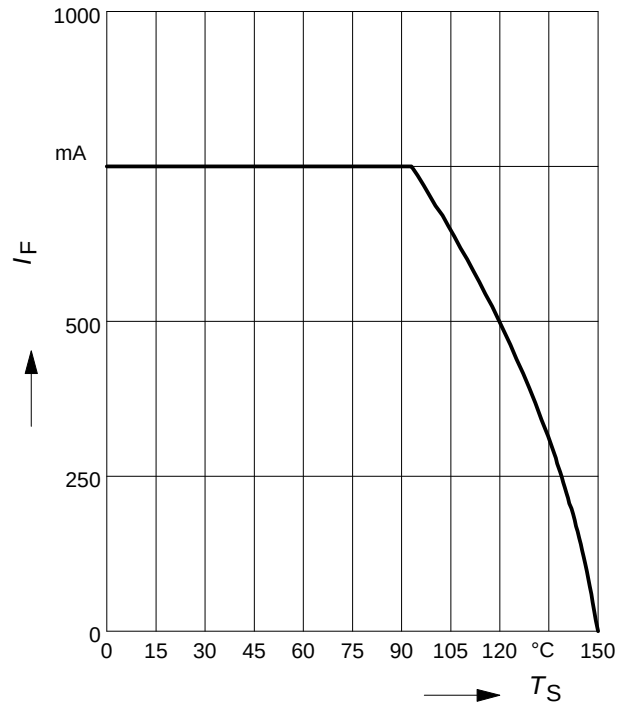
### Permissible Reverse voltage $V_R = f(T_A)$

$t_p$  = Parameter, Duty cycle < 0.01

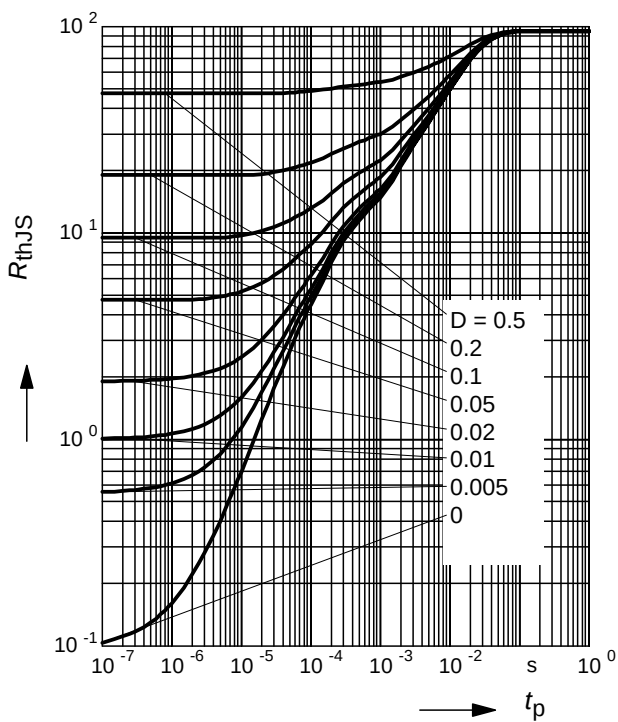
Device mounted on PCB with  $R_{th} = 160 \text{ k/W}$



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

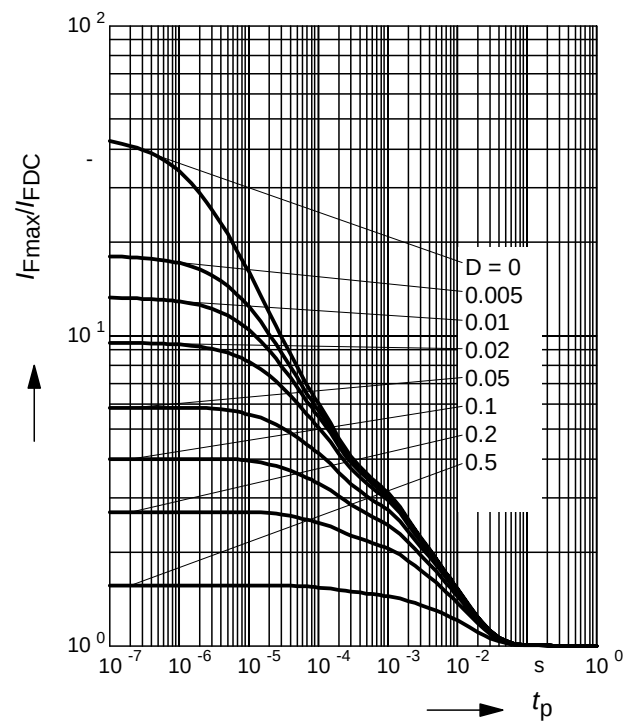


### Permissible Puls Load $R_{thJS} = f(t_p)$

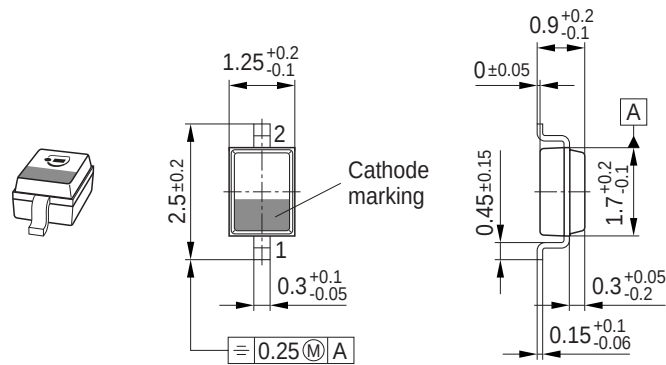


### Permissible Pulse Load

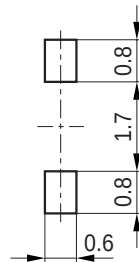
$$I_{Fmax}/I_{FDC} = f(t_p)$$



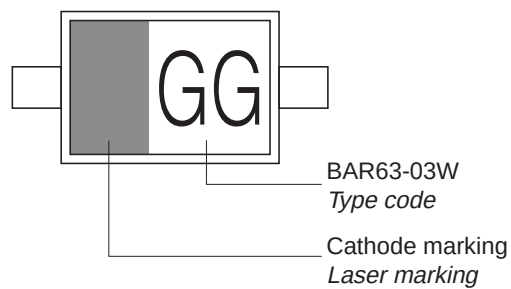
## Package Outline



## Foot Print

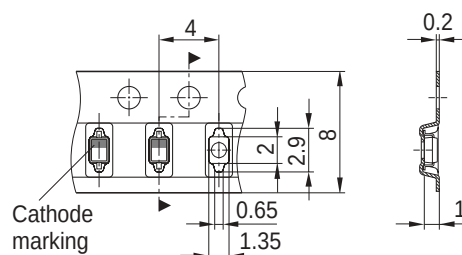


## Marking Layout (Example)



## Standard Packing

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



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- Консультации по применению компонента;
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