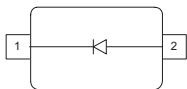


## Silicon Schottky Diode

- Medium current rectifier Schottky diode
- Low forward voltage at 200mA
- High reverse voltage
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



## BAS52-02V



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

| Type      | Package | Configuration | Marking |
|-----------|---------|---------------|---------|
| BAS52-02V | SC79    | single        | y       |

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

| Parameter                                                          | Symbol    | Value       | Unit             |
|--------------------------------------------------------------------|-----------|-------------|------------------|
| Diode reverse voltage                                              | $V_R$     | 45          | V                |
| Forward current                                                    | $I_F$     | 750         | mA               |
| Average rectified forward current (50/60Hz, sinus)                 | $I_{FAV}$ | 500         | mA               |
| Non-repetitive peak surge forward current<br>$t = 100 \mu\text{s}$ | $I_{FSM}$ | 2000        |                  |
| Total power dissipation<br>$T_S \leq 110^\circ\text{C}$            | $P_{tot}$ | 500         | 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>2)</sup> | $R_{thJS}$ | $\leq 60$ | K/W  |

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

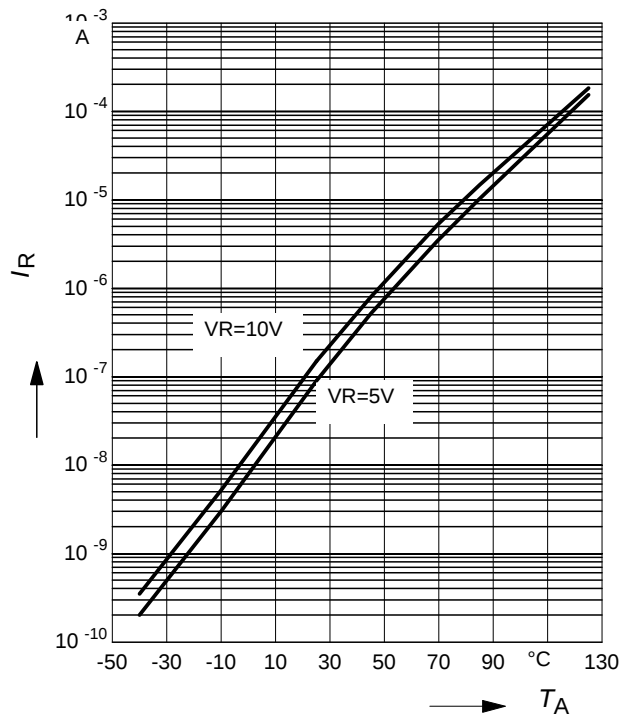
<sup>2)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

| Parameter                                             | Symbol | Values |      |      | Unit          |
|-------------------------------------------------------|--------|--------|------|------|---------------|
|                                                       |        | min.   | typ. | max. |               |
| DC Characteristics                                    |        |        |      |      |               |
| Reverse current                                       | $I_R$  |        |      |      | $\mu\text{A}$ |
| $V_R = 45\text{ V}$                                   |        | -      | -    | 10   |               |
| $V_R = 5\text{ V}, T_A = 70\text{ }^{\circ}\text{C}$  |        | -      | -    | 30   |               |
| $V_R = 10\text{ V}$                                   |        | -      | -    | 1    |               |
| $V_R = 10\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$ |        | -      | -    | 80   |               |
| Forward voltage                                       | $V_F$  |        |      |      | $\text{mV}$   |
| $I_F = 10\text{ mA}$                                  |        | -      | 335  | 420  |               |
| $I_F = 100\text{ mA}$                                 |        | -      | 430  | 530  |               |
| $I_F = 200\text{ mA}$                                 |        | 400    | 500  | 600  |               |
| AC Characteristics                                    |        |        |      |      |               |
| Diode capacitance                                     | $C_T$  | -      | 5    | 10   | $\text{pF}$   |
| $V_R = 10\text{ V}, f = 1\text{ MHz}$                 |        |        |      |      |               |

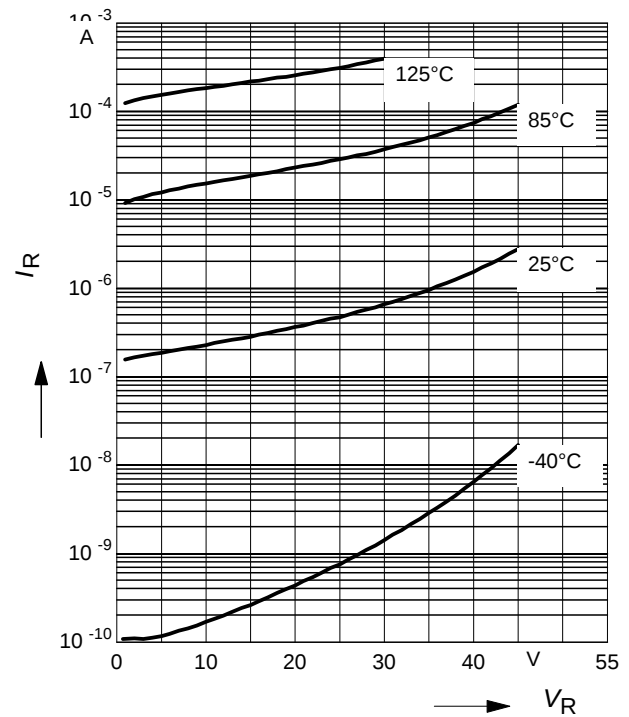
**Reverse current  $I_R = f(T_A)$**

$V_R$  = Parameter



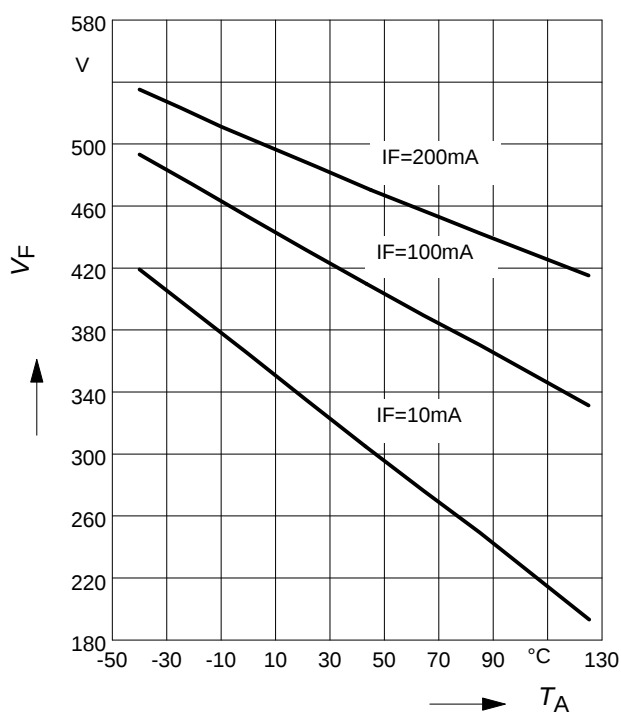
**Reverse current  $I_R = f(V_R)$**

$T_A$  = Parameter



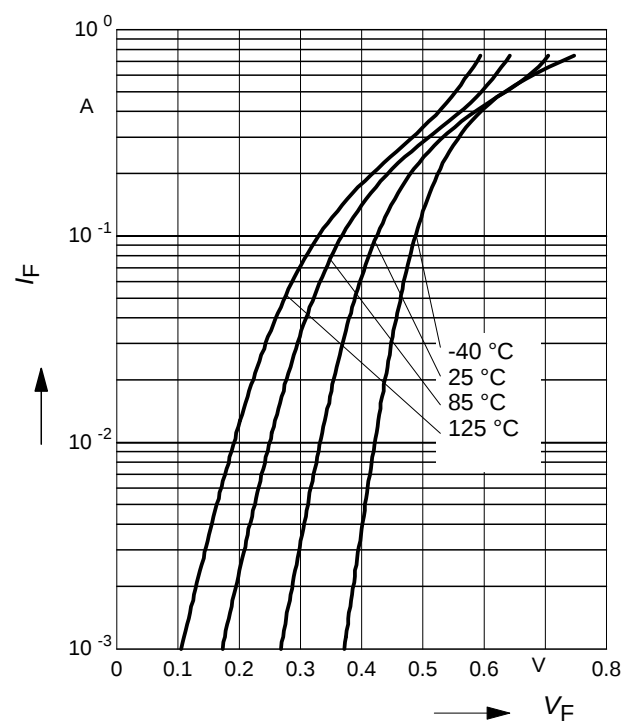
**Forward Voltage  $V_F = f(T_A)$**

$I_F$  = Parameter



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

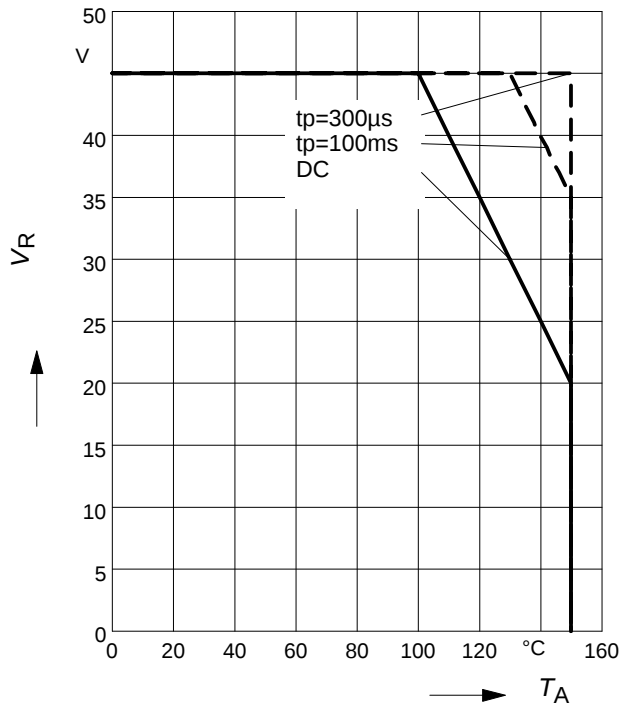
$T_A$  = Parameter



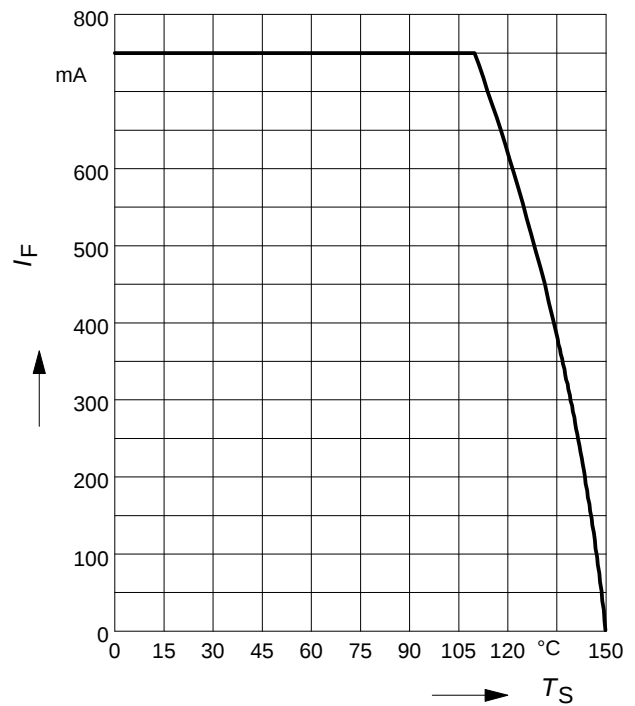
### Permissible Reverse voltage $V_R = f(T_A)$

$t_p$  = Parameter

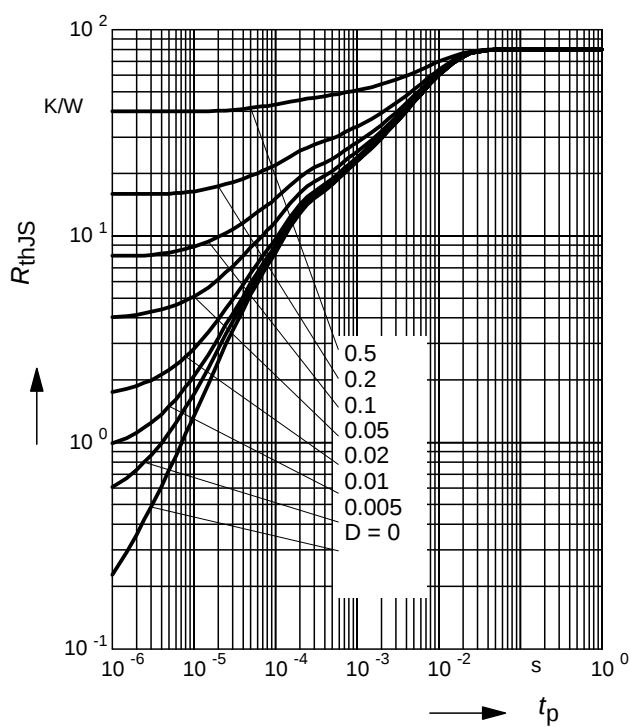
Duty cycle < 0.01



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

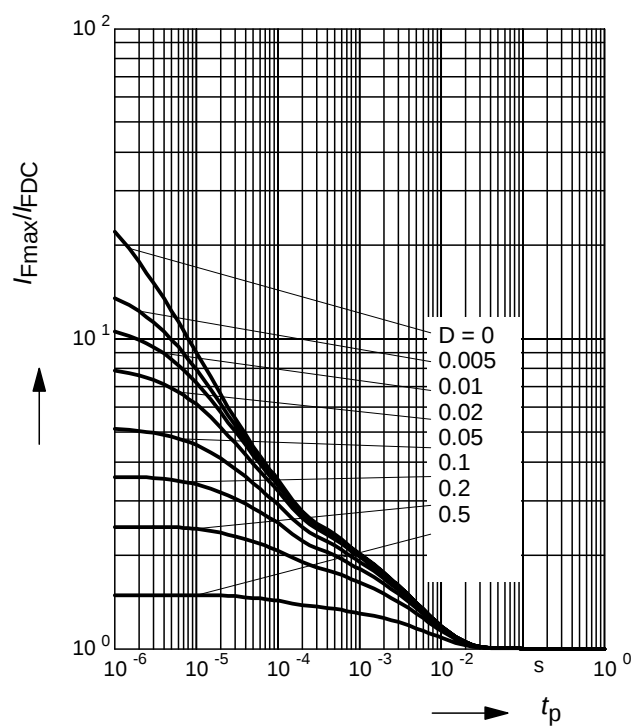


### Permissible Puls Load $R_{thJS} = f(t_p)$

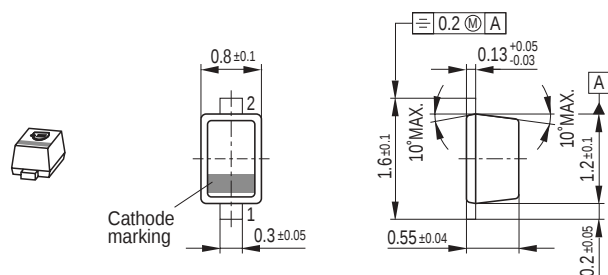


### Permissible Pulse Load

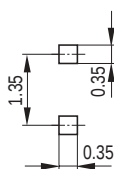
$$I_{Fmax}/I_{FDC} = f(t_p)$$



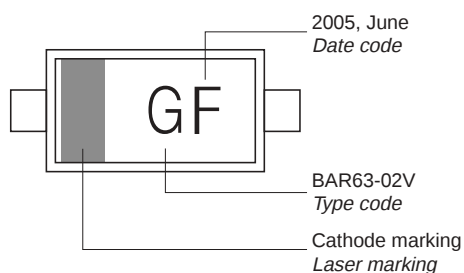
## Package Outline



## Foot Print

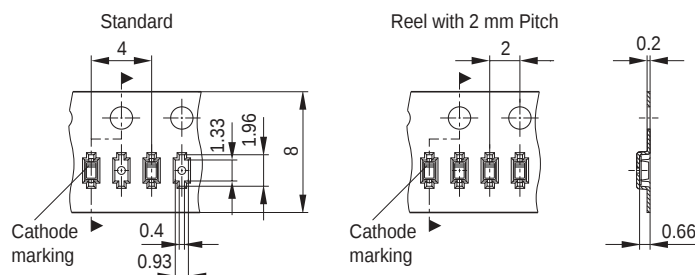


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q    | B    | Q    | b    | q    | B    | Q    | b    | q    | B    | Q    |
| 03    | c    | r    | C    | R    | c    | r    | C    | R    | c    | r    | C    | R    |
| 04    | d    | s    | D    | S    | d    | s    | D    | S    | d    | s    | D    | S    |
| 05    | e    | t    | E    | T    | e    | t    | E    | T    | e    | t    | E    | T    |
| 06    | f    | u    | F    | U    | f    | u    | F    | U    | f    | u    | F    | U    |
| 07    | g    | v    | G    | V    | g    | v    | G    | V    | g    | v    | G    | V    |
| 08    | h    | x    | H    | X    | h    | x    | H    | X    | h    | x    | H    | X    |
| 09    | j    | y    | J    | Y    | j    | y    | J    | Y    | j    | y    | J    | Y    |
| 10    | k    | z    | K    | Z    | k    | z    | K    | Z    | k    | z    | K    | Z    |
| 11    | l    | 2    | L    | 4    | l    | 2    | L    | 4    | l    | 2    | L    | 4    |
| 12    | n    | 3    | N    | 5    | n    | 3    | N    | 5    | n    | 3    | N    | 5    |

1) New Marking Layout for SC75, implemented at October 2005.

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