**Medium Power AF Schottky Diode**

- Forward current: 0.5 A

- Reverse voltage: 30 V

- Low capacitance, low reverse current

- For high efficiency DC/DC conversion, fast switching, protecting and clamping applications

- Pb-free (RoHS compliant) package[1]

- Qualified according AEC Q101

**AEC** Qualified  **RoHS**
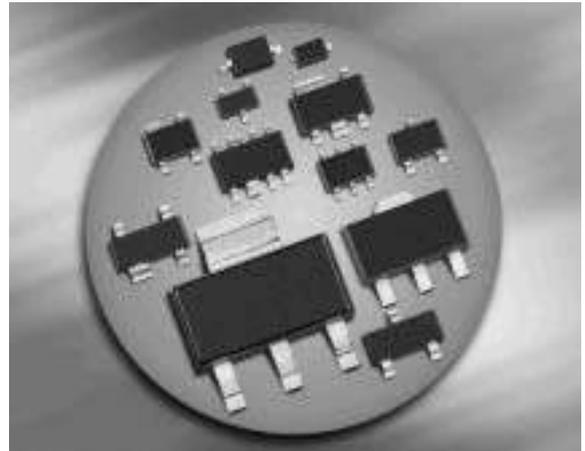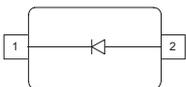
**BAS3005B-02V**

| Type | Package | Configuration | Marking |
|------|---------|---------------|---------|
| BAS3005B-02V | SC79 | single | 3 |

**Maximum Ratings** at $T_A$ = 25°C, unless otherwise specified

| Parameter | Symbol | Value | Unit |
|-----------|--------|-------|------|
| Diode reverse voltage[2] | $V_R$ | 30 | V |
| Forward current[2] | $I_F$ | 500 | mA |
| Average rectified forward current (50/60Hz, sinus) | $I_{FAV}$ | 500 | mA |
| Repetitive peak forward current ($t_p \leq 1$ ms, $D \leq 0.25$) | $I_{FRM}$ | 3.5 | A |
| Non-repetitive peak surge forward current ($t \leq 10$ms) | $I_{FSM}$ | 5 | |
| Junction temperature | $T_j$ | 150 | °C |
| Operating temperature range | $T_{op}$ | -55 ... 125 | |
| Storage temperature | $T_{stg}$ | -65 ... 150 | |

[1]Pb-containing package may be available upon special request
[2]For $T_A$ > 25°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[1] | $R_{thJS}$ | $\leq 80$ | K/W |

**Electrical Characteristics** at $T_A = 25°C$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|---|---|---|---|---|---|
| | | min. | typ. | max. | |
| **DC Characteristics** | | | | | |
| Reverse current[2] | $I_R$ | | | | µA |
| $V_R = 5$ V | | - | 1 | 5 | |
| $V_R = 10$ V | | - | 2 | 10 | |
| $V_R = 30$ V | | - | 5 | 25 | |
| Forward voltage[2] | $V_F$ | | | | mV |
| $I_F = 1$ mA | | - | 200 | 250 | |
| $I_F = 10$ mA | | - | 260 | 310 | |
| $I_F = 100$ mA | | - | 360 | 410 | |
| $I_F = 200$ mA | | - | 410 | 470 | |
| $I_F = 500$ mA | | - | 550 | 620 | |
| **AC Characteristics** | | | | | |
| Diode capacitance | $C_T$ | - | 6 | 10 | pF |
| $V_R = 5$ V, $f = 1$ MHz | | | | | |

[1]For calculation of $R_{thJA}$ please refer to Application Note Thermal Resistance

[2]Pulsed test: $t_p = 300$ µs; D = 0.01

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

$f = 1\text{MHz}$
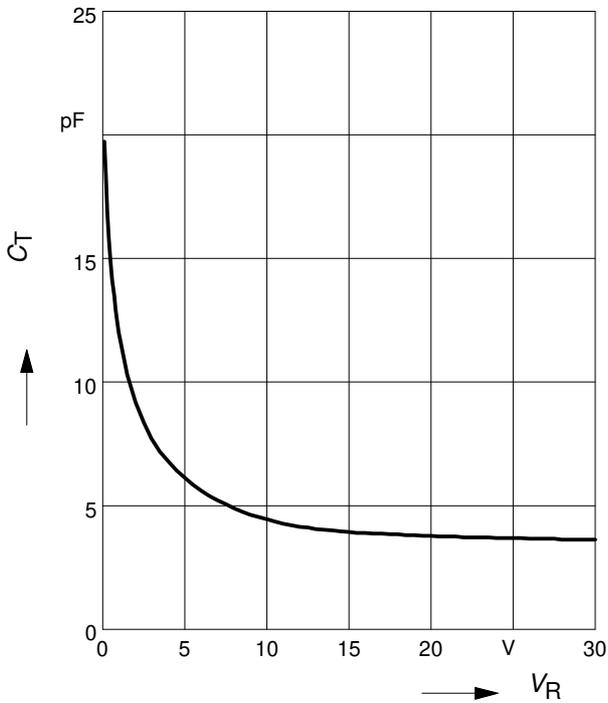


**Reverse current** $I_R = f(T_A)$

$V_R = \text{Parameter}$
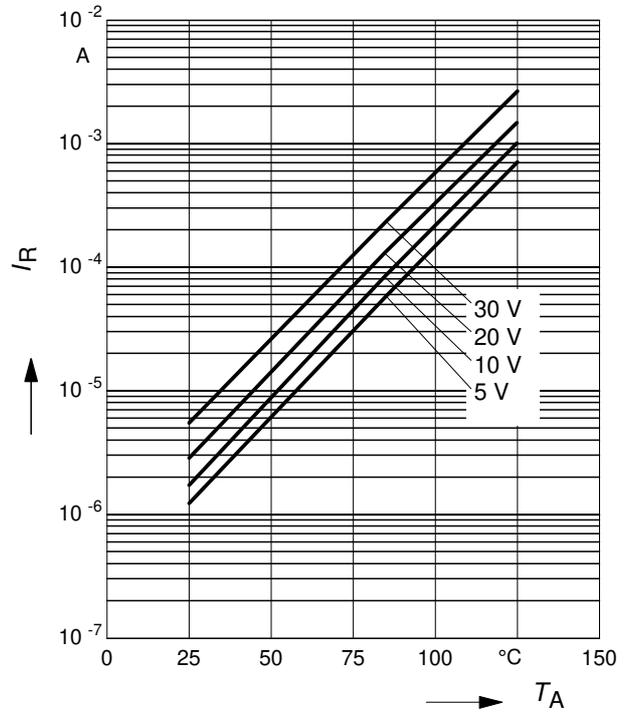


**Reverse current** $I_R = f(V_R)$

$T_A = \text{Parameter}$
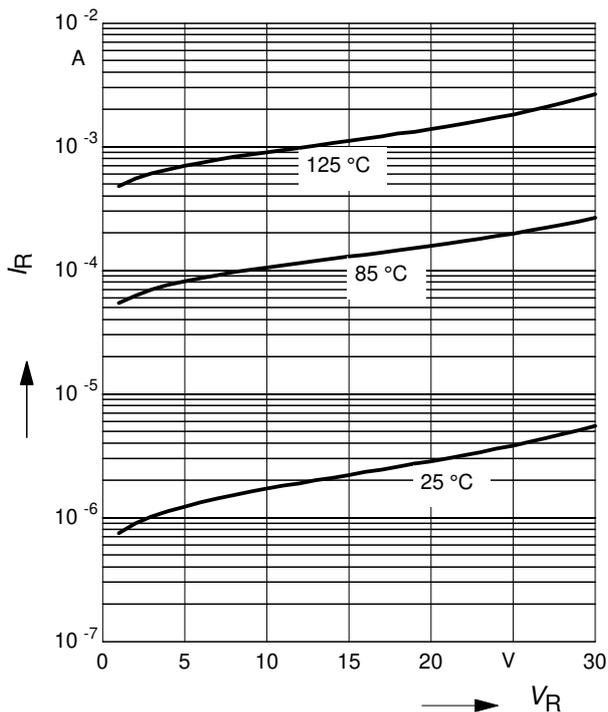


**Forward Voltage** $V_F = f(T_A)$

$I_F = \text{Parameter}$

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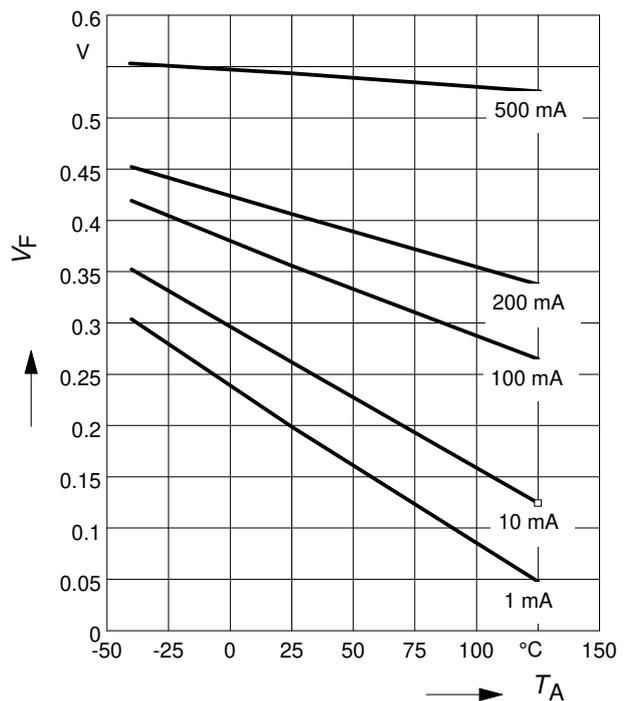
**Forward current** $I_F = f(V_F)$

$T_A$ = Parameter
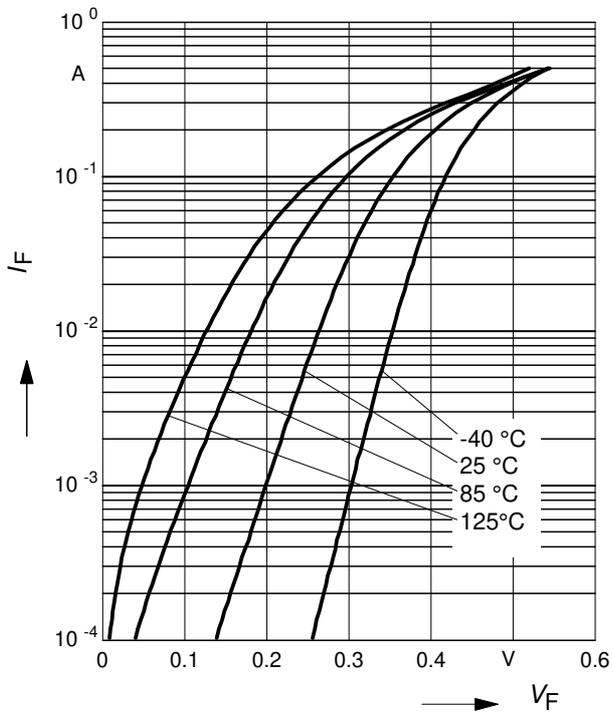


**Permissible Reverse voltage** $V_R = f(T_A)$

$t_p$ = Parameter, Duty cycle < 0.01

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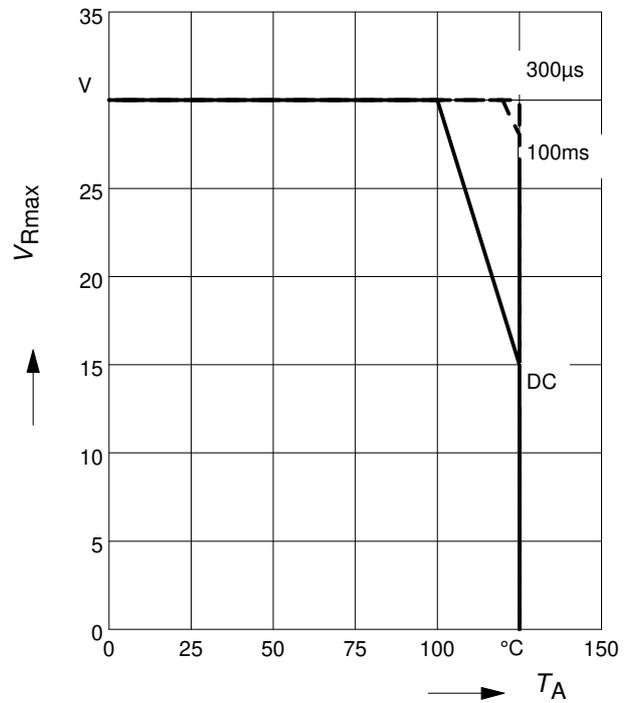


**Forward current** $I_F = f(T_S)$

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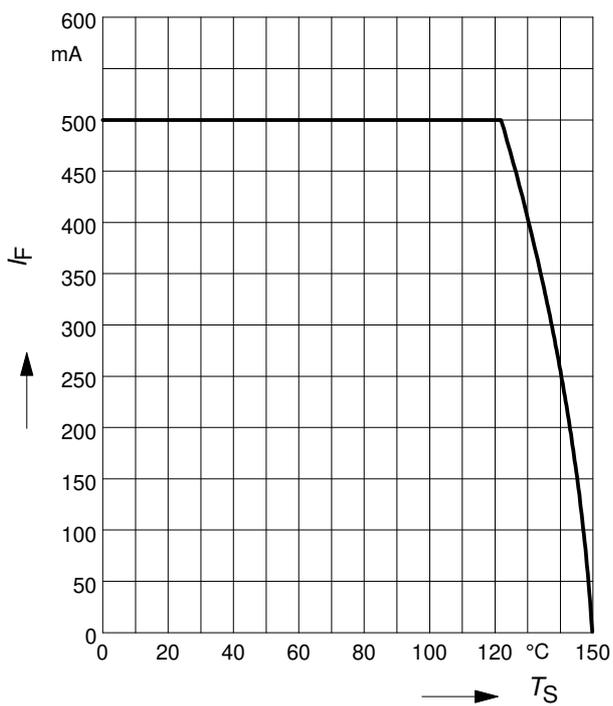
## Package Outline
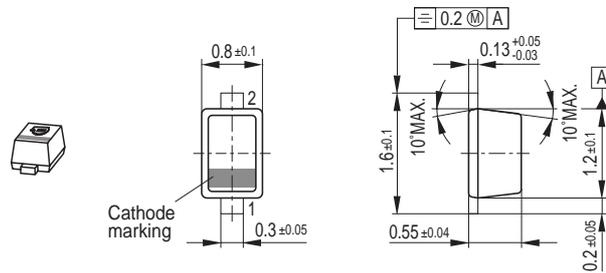


## Foot Print



## Marking Layout (Example)



2005, June
*Date code*

BAR63-02V
*Type code*
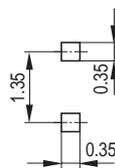
Cathode marking
*Laser marking*
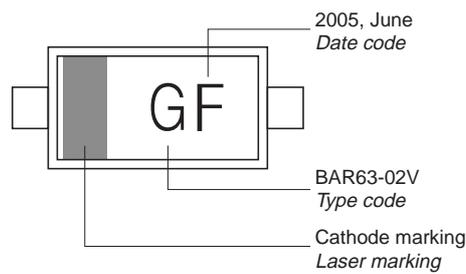
## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)
Reel ø330 mm = 10.000 Pieces/Reel
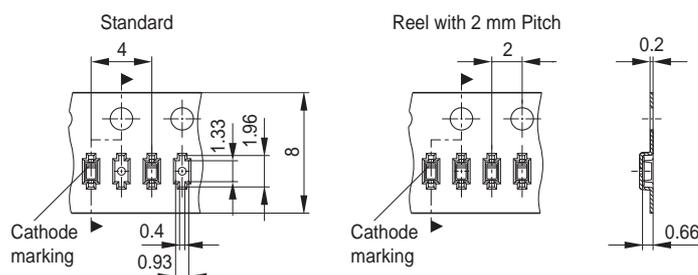
## Date Code marking for discrete packages with one digit (SCD80, SC79, SC75[1]) CES-Code

| 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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