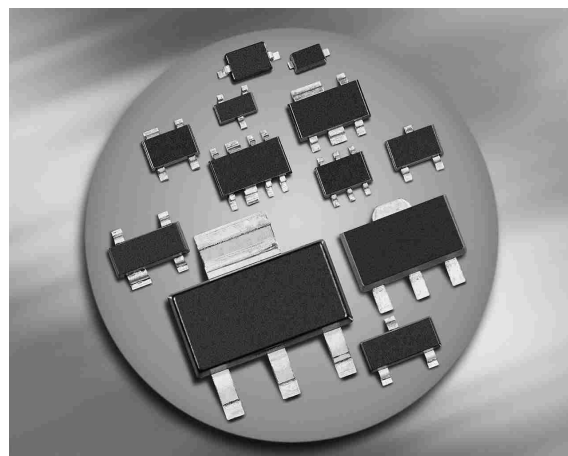
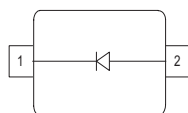


## Silicon Schottky Diode

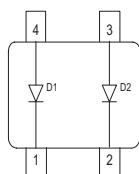
- Low barrier diode for detectors up to GHz frequencies
- For high-speed applications
- Zero bias detector diode
- Pb-free (RoHS compliant) package



### BAT63-02V



### BAT63-07W



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

| Type      | Package | Configuration | $L_S$ (nH) | Marking |
|-----------|---------|---------------|------------|---------|
| BAT63-02V | SC79    | single        | 0.6        | d       |
| BAT63-07W | SOT343  | parallel pair | 1.6        | 63s     |

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

| Parameter                                | Symbol           | Value       | Unit             |
|------------------------------------------|------------------|-------------|------------------|
| Diode reverse voltage                    | $V_R$            | 3           | V                |
| Forward current                          | $I_F$            | 100         | mA               |
| Total power dissipation                  | $P_{\text{tot}}$ |             | mW               |
| $T_S \leq 120^\circ\text{C}$ , BAT63-02V |                  | 100         |                  |
| $T_S \leq 114^\circ\text{C}$ , BAT63-07W |                  | 100         |                  |
| Junction temperature                     | $T_j$            | 150         | $^\circ\text{C}$ |
| Storage temperature                      | $T_{\text{stg}}$ | -55 ... 150 |                  |

### Thermal Resistance

| Parameter                                | Symbol            | Value      | Unit |
|------------------------------------------|-------------------|------------|------|
| Junction - soldering point <sup>1)</sup> | $R_{\text{thJS}}$ |            | K/W  |
| BAT63-02V                                |                   | $\leq 295$ |      |
| BAT63-07W                                |                   | $\leq 355$ |      |

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

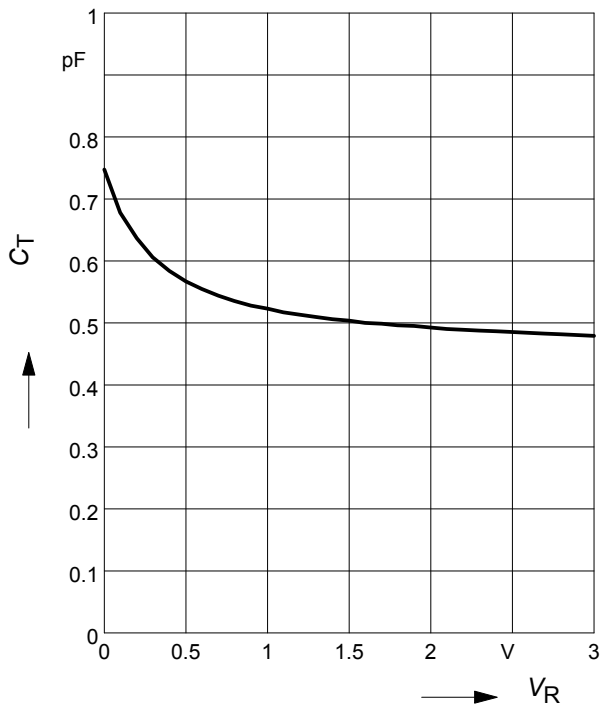
| Parameter                                                     | Symbol       | Values |      |      | Unit          |
|---------------------------------------------------------------|--------------|--------|------|------|---------------|
|                                                               |              | min.   | typ. | max. |               |
| DC Characteristics                                            |              |        |      |      |               |
| Reverse current<br>$V_R = 3\text{ V}$                         | $I_R$        | -      | -    | 10   | $\mu\text{A}$ |
| Forward voltage<br>$I_F = 1\text{ mA}$                        | $V_F$        | -      | 190  | 300  | mV            |
| Forward voltage matching <sup>2)</sup><br>$I_F = 1\text{ mA}$ | $\Delta V_F$ | -      | -    | 20   |               |
| AC Characteristics                                            |              |        |      |      |               |
| Diode capacitance<br>$V_R = 0.2\text{ V}, f = 1\text{ MHz}$   | $C_T$        | -      | 0.65 | 0.85 | pF            |
| Differential resistance<br>$V_R = 0, f = 10\text{ kHz}$       | $R_0$        | -      | 30   | -    | k $\Omega$    |

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

<sup>2</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

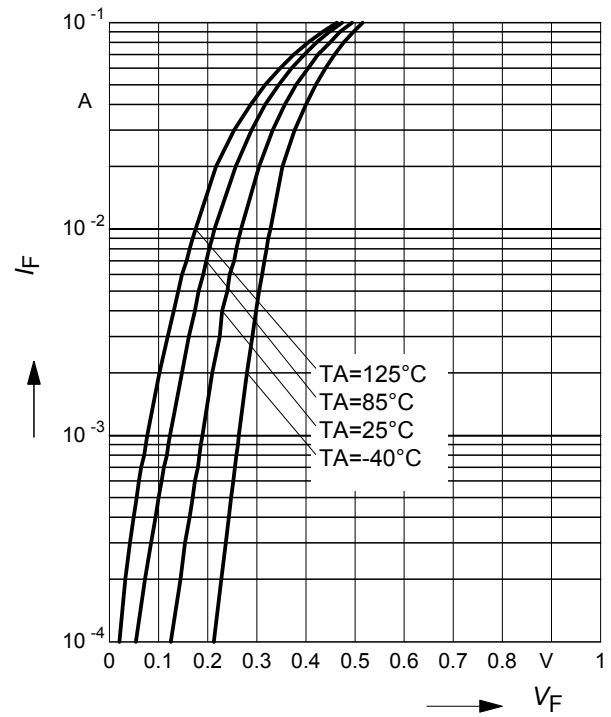
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



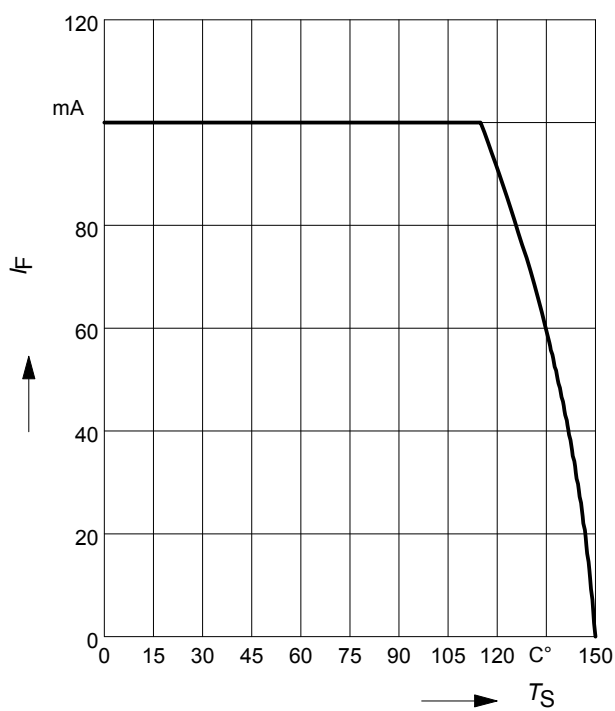
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



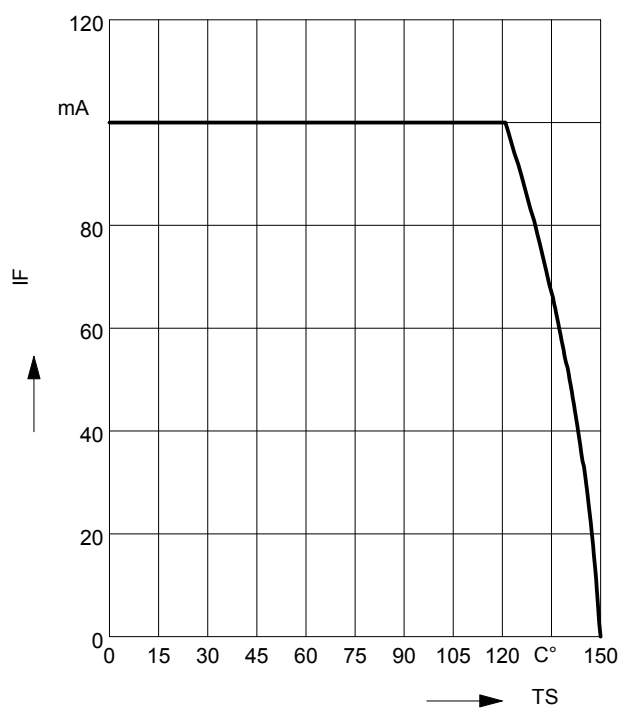
**Forward current  $I_F = f(T_S)$**

BAT63-07W



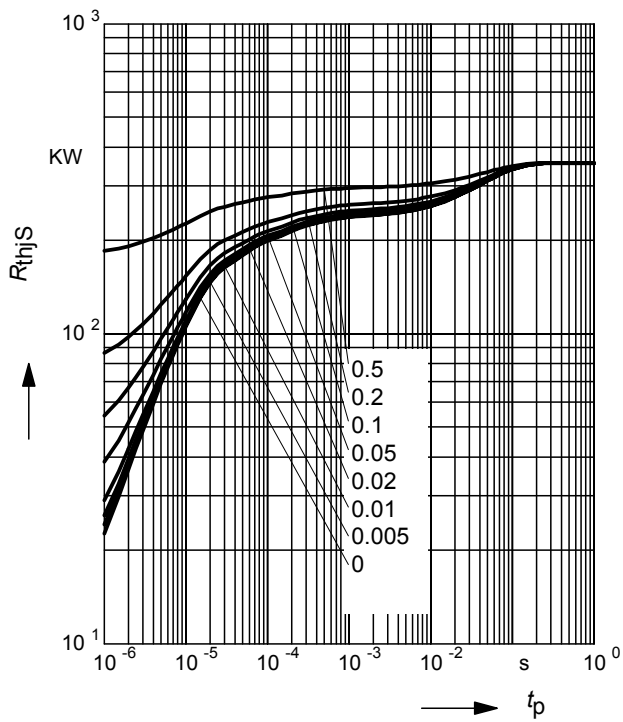
**Forward current  $I_F = f(T_S)$**

BAT63-02V



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

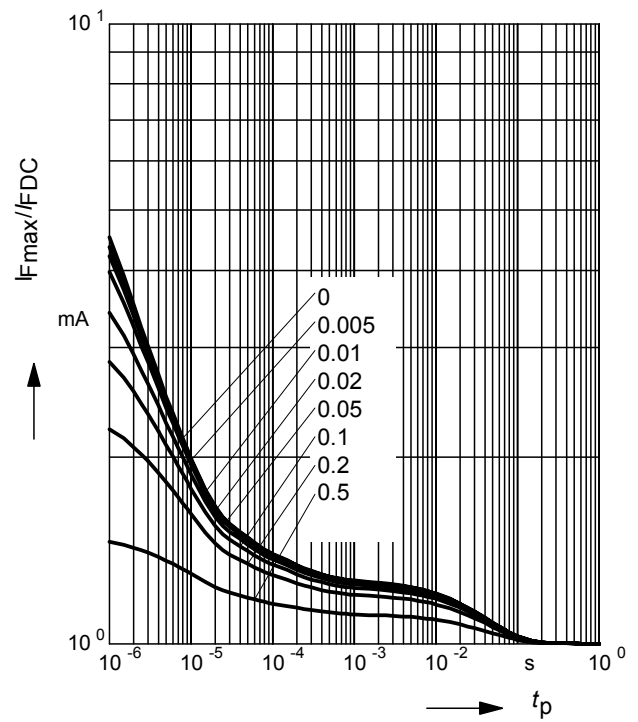
BAT63-07W



### Permissible Pulse Load

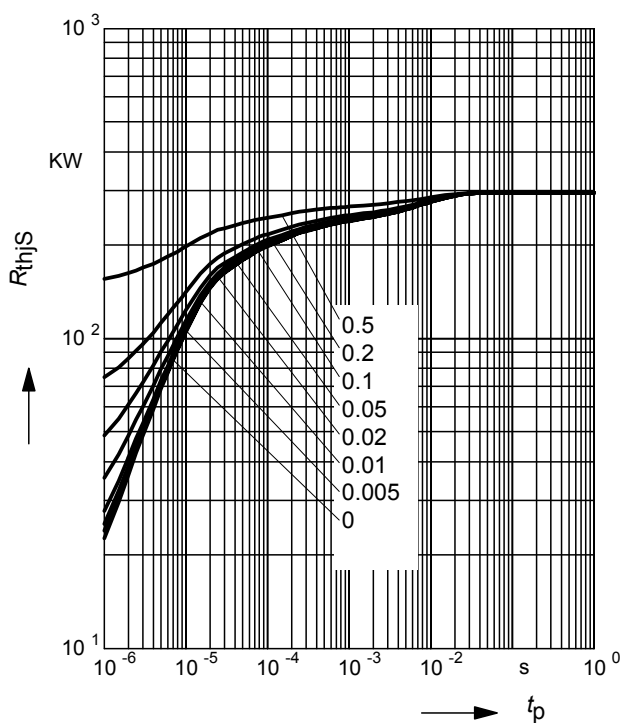
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT63-07W



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

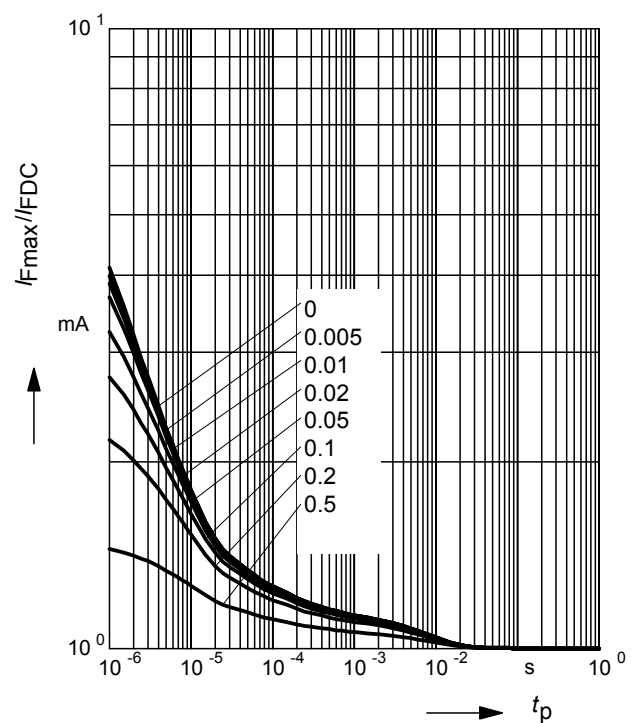
BAT63-02V



### Permissible Pulse Load

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

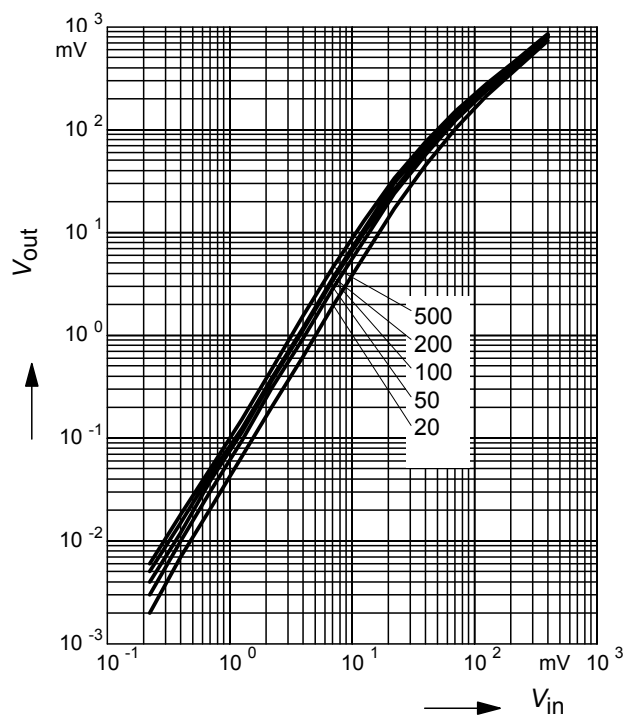
BAT63-02V



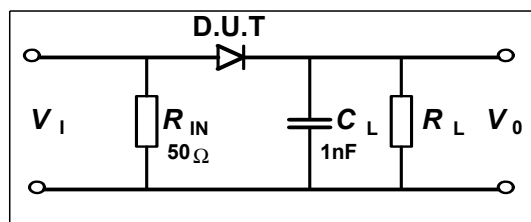
**Rectifier voltage**  $V_{\text{out}} = f(V_{\text{in}})$

$f = 2.4\text{GHz}$

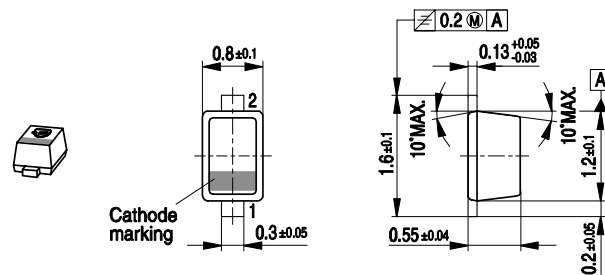
$R_L$  = Parameter in  $\text{k}\Omega$



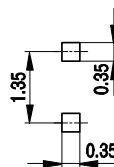
Testcircuit



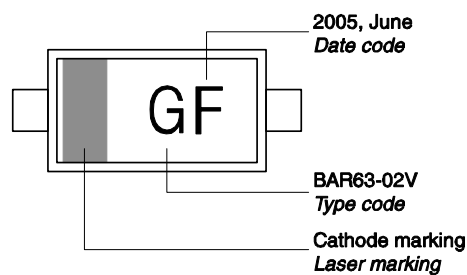
## Package Outline



## Foot Print

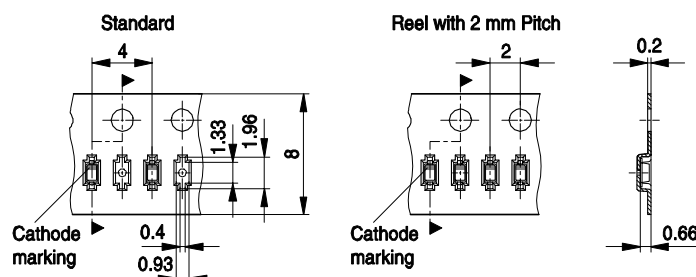


## Marking Layout (Example)



## 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

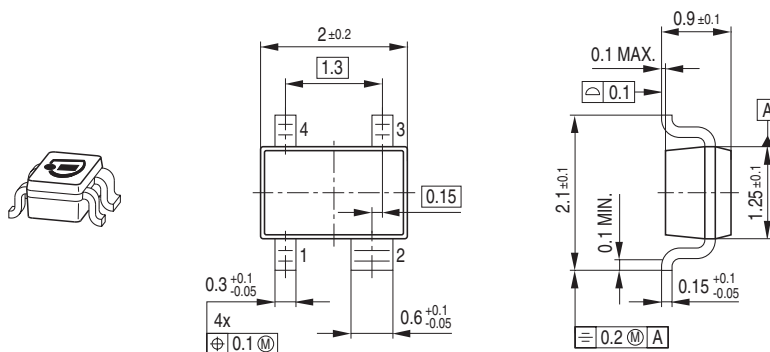


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

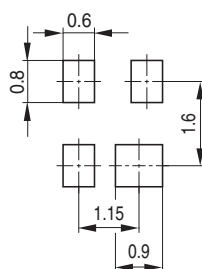
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q    | 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.

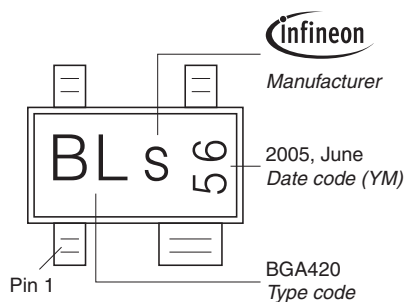
## Package Outline



## Foot Print

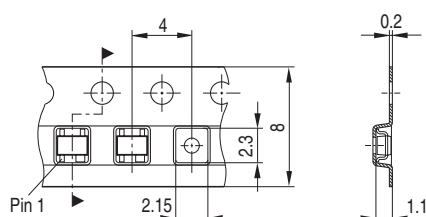


## Marking Layout (Example)



## Standard Packing

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





**Edition 2009-11-16**

**Published by  
Infineon Technologies AG  
81726 Munich, Germany**

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