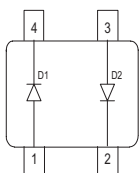


## Silicon Schottky Diode

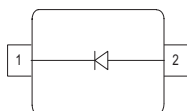
- Low barrier diode for detectors up to GHz frequencies
- Pb-free (RoHS compliant) package



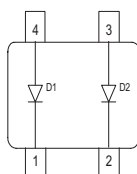
### BAT62



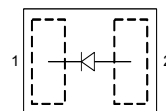
### BAT62-02W BAT62-03W



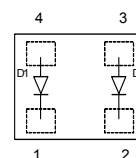
### BAT62-07W



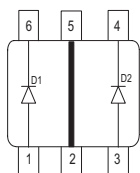
### BAT62-02L BAT62-02LS



### BAT62-07L4



### BAT62-09s



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

| Type        | Package   | Configuration                 | $L_S$ (nH) | Marking |
|-------------|-----------|-------------------------------|------------|---------|
| BAT62       | SOT143    | anti-parallel pair            | 2          | 62s     |
| BAT62-02L   | TSLP-2-1  | single, leadless              | 0.4        | L       |
| BAT62-02LS* | TSSLP-2-1 | single, leadless              | 0.2        | U       |
| BAT62-02W   | SCD80     | single                        | 0.6        | 62      |
| BAT62-03W   | SOD323    | single                        | 1.8        | white L |
| BAT62-07L4  | TSLP-4-4  | parallel pair, leadless       | 0.4        | 62      |
| BAT62-07W   | SOT343    | parallel pair                 | 1.8        | 62s     |
| BAT62-09s   | SOT363    | parallel high, high isolation | 1.6        | 69s     |

\* Preliminary Data

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

| Parameter                                            | Symbol           | Value       | Unit             |
|------------------------------------------------------|------------------|-------------|------------------|
| Diode reverse voltage                                | $V_R$            | 40          | V                |
| Forward current                                      | $I_F$            | 20          | mA               |
| Total power dissipation                              | $P_{\text{tot}}$ |             | mW               |
| BAT62, $T_S \leq 85^\circ\text{C}$                   |                  | 100         |                  |
| BAT62-02L, -07L4, -03W, $T_S \leq 108^\circ\text{C}$ |                  | 100         |                  |
| BAT62-02W, $T_S \leq 109^\circ\text{C}$              |                  | 100         |                  |
| BAT62-07W, $T_S \leq 103^\circ\text{C}$              |                  | 100         |                  |
| BAT62-09S, $T_S \leq 105^\circ\text{C}$              |                  | 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  |
| BAT62                                    |                   | $\leq 650$        |      |
| BAT62-02L, -07L4, -03W                   |                   | $\leq 420$        |      |
| BAT62-02W                                |                   | $\leq 410$        |      |
| BAT62-07W                                |                   | $\leq 470$        |      |
| BAT62-09S                                |                   | $\leq \text{tdb}$ |      |

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

| Parameter                              | Symbol       | Values |      |      | Unit          |
|----------------------------------------|--------------|--------|------|------|---------------|
|                                        |              | min.   | typ. | max. |               |
| Reverse current                        | $I_R$        | -      | -    | 10   | $\mu\text{A}$ |
| $V_R = 40\text{ V}$                    |              |        |      |      |               |
| Forward voltage                        | $V_F$        | -      | 0.58 | 1    | V             |
| $I_F = 2\text{ mA}$                    |              |        |      |      |               |
| Forward voltage matching <sup>2)</sup> | $\Delta V_F$ | -      | -    | 20   | mV            |
| $I_F = 2\text{ mA}$                    |              |        |      |      |               |

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

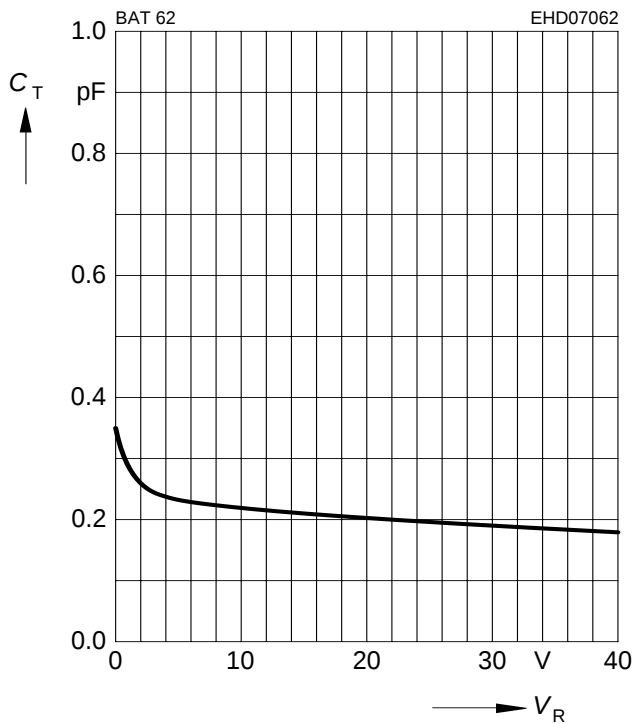
<sup>2)</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

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

| Parameter                                                        | Symbol | Values |      |      | Unit |
|------------------------------------------------------------------|--------|--------|------|------|------|
|                                                                  |        | min.   | typ. | max. |      |
| AC Characteristics                                               |        |        |      |      |      |
| Diode capacitance<br>$V_R = 0\text{ V}, f = 1\text{ MHz}$        | $C_T$  | -      | 0.35 | 0.6  | pF   |
| Differential resistance<br>$V_R = 0\text{ V}, f = 10\text{ kHz}$ | $R_0$  | -      | 225  | -    | kΩ   |

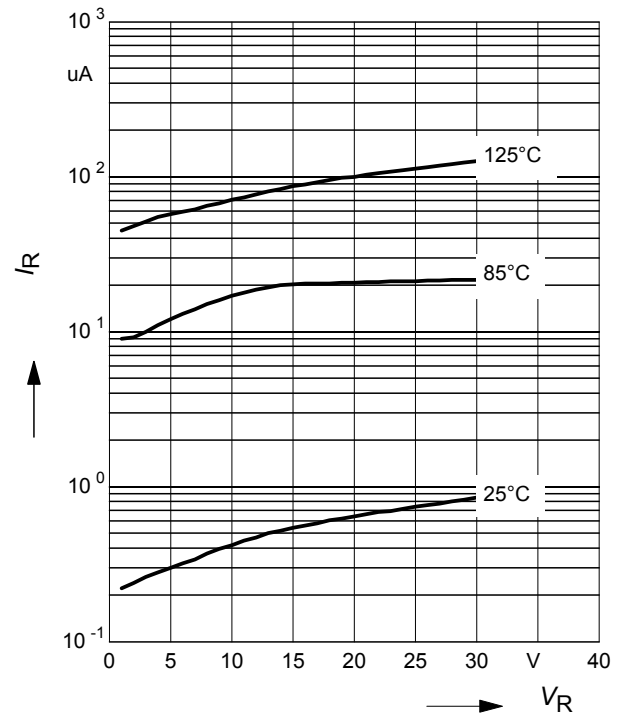
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



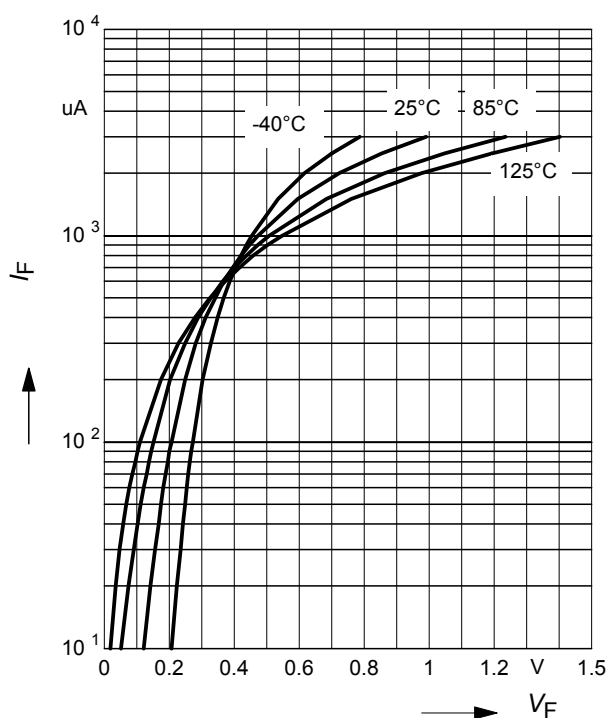
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



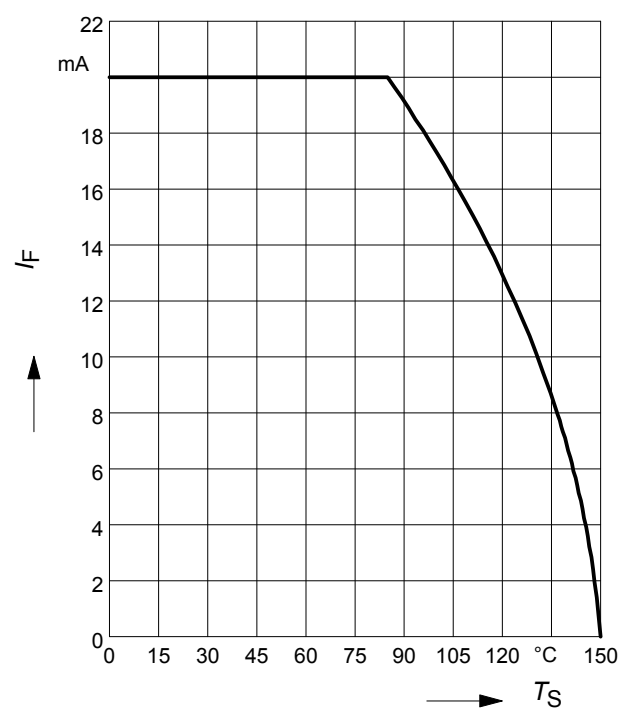
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



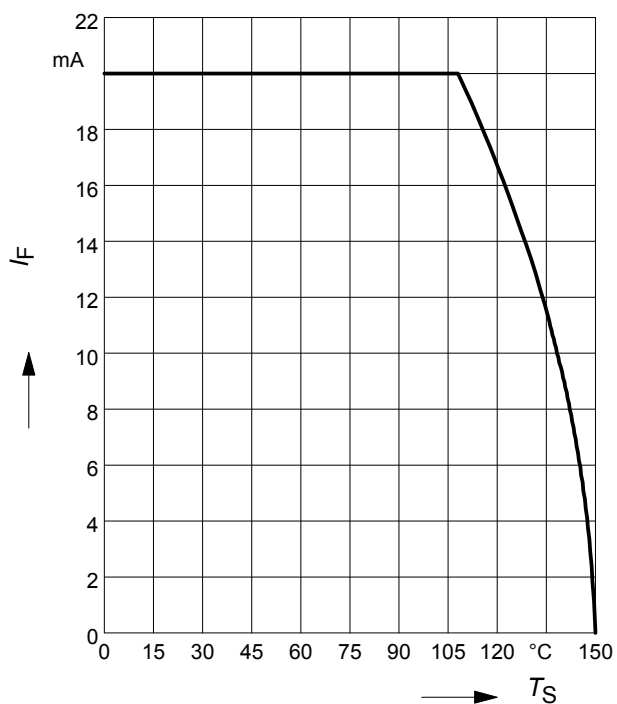
**Forward current  $I_F = f(T_S)$**

BAT62



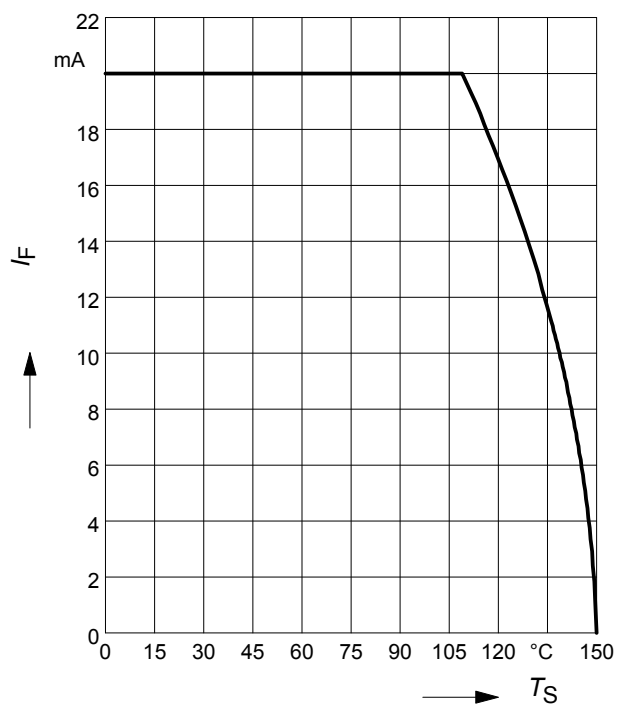
**Forward current  $I_F = f(T_S)$**

BAT62-02L, -07L4



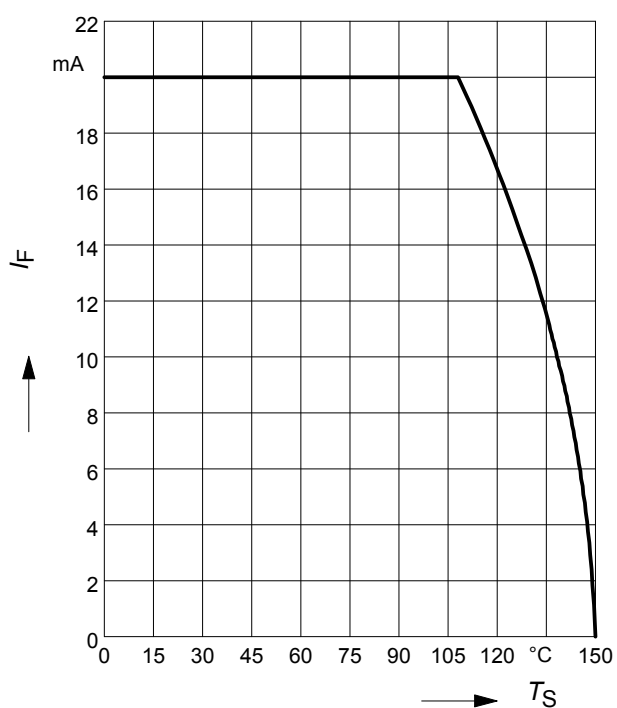
**Forward current  $I_F = f(T_S)$**

BAT62-02W



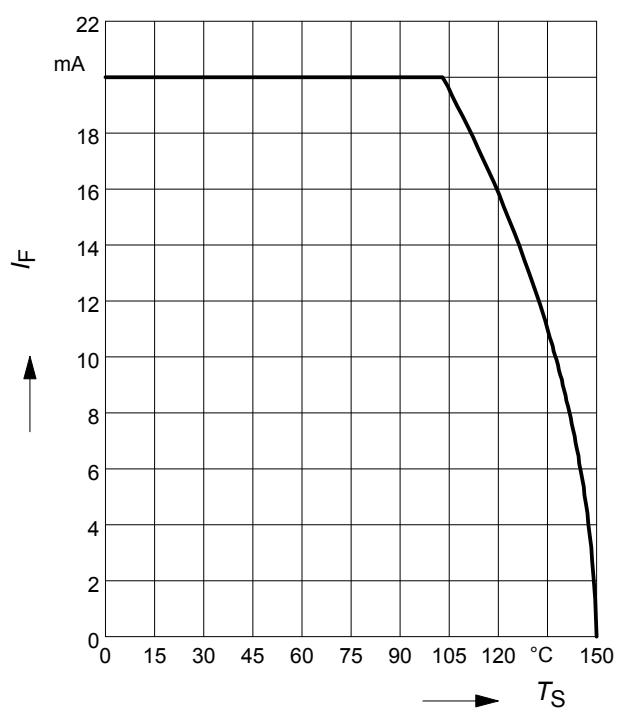
**Forward current  $I_F = f(T_S)$**

BAT62-03W



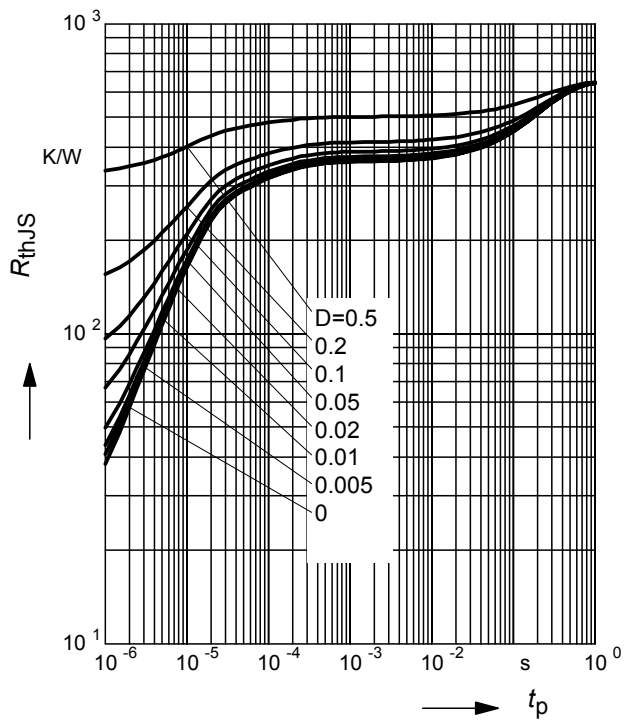
**Forward current  $I_F = f(T_S)$**

BAT62-07W



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

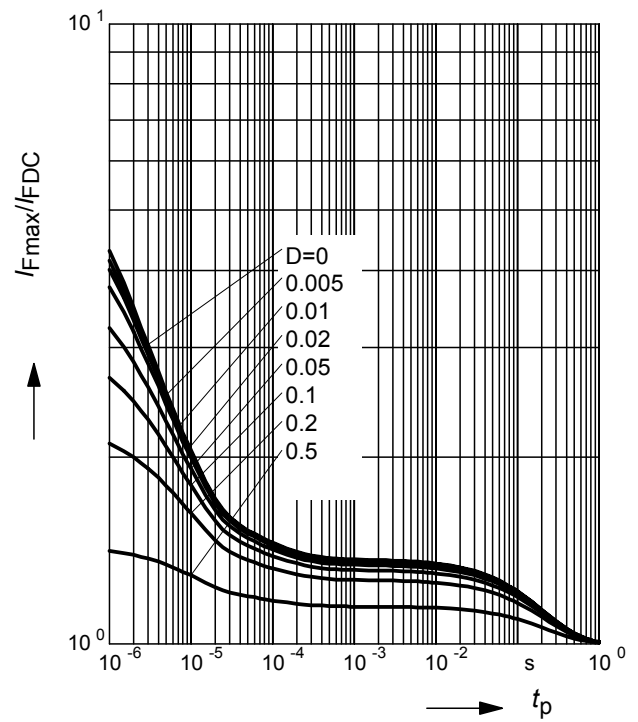
BAT62



### Permissible Pulse Load

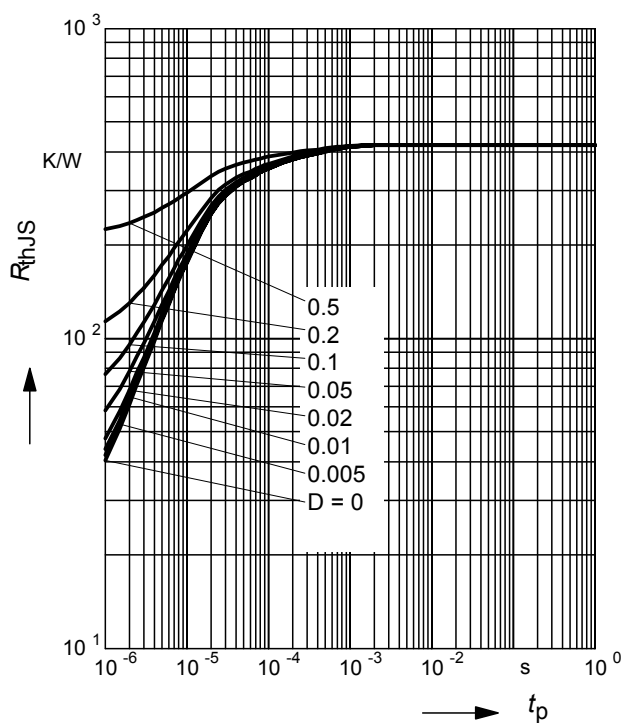
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62



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

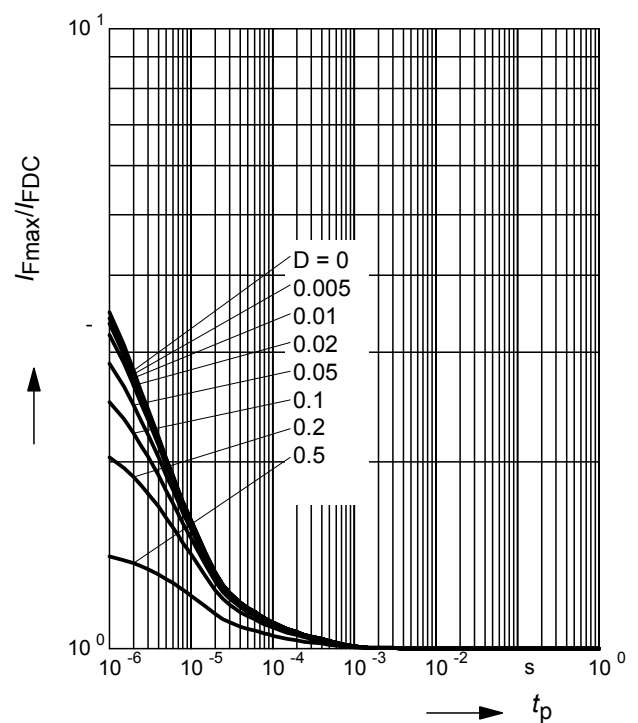
BAT62-02L, -07L4



### Permissible Pulse Load

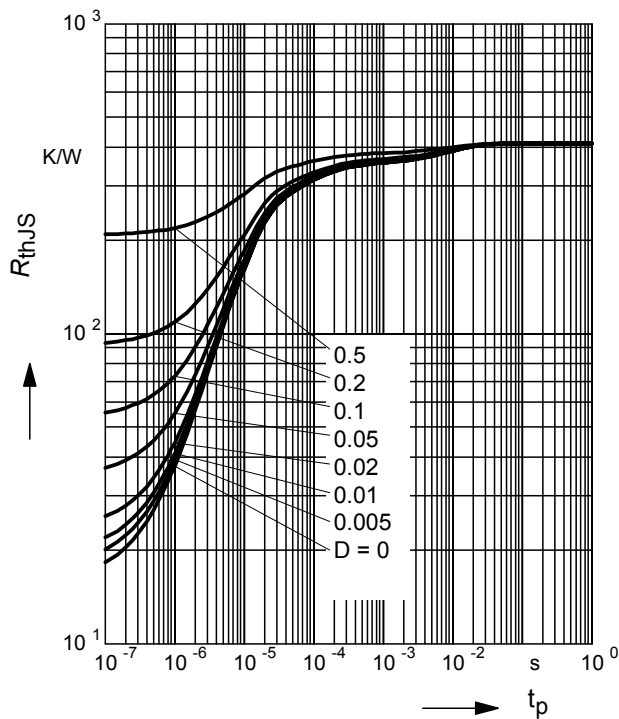
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-02L, -07L4



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

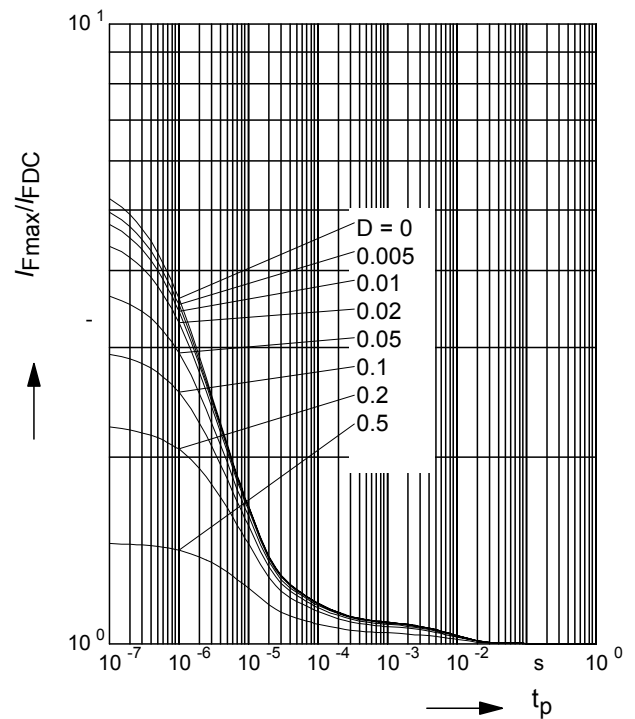
BAT62-02W



### Permissible Pulse Load

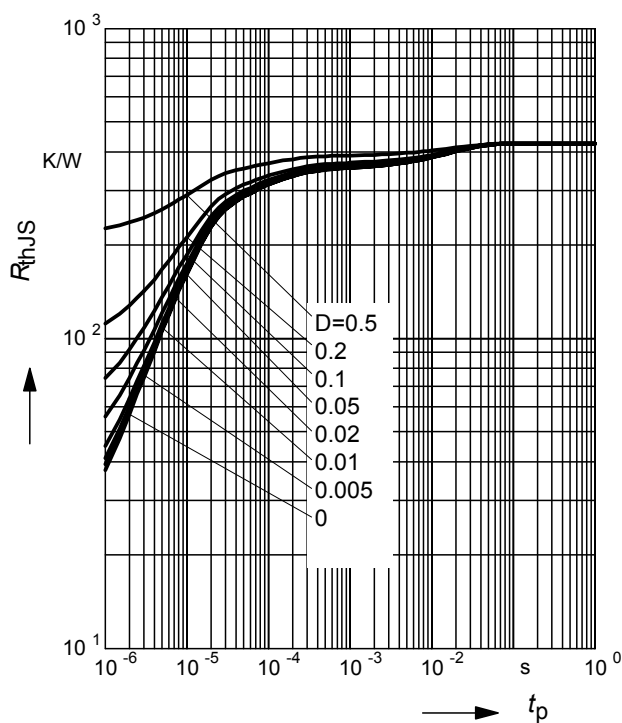
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-02W



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

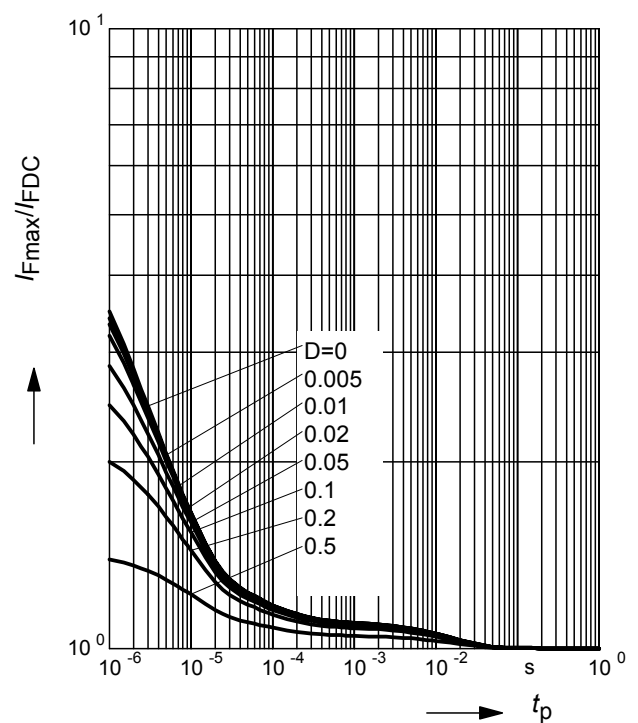
BAT62-03W



### Permissible Pulse Load

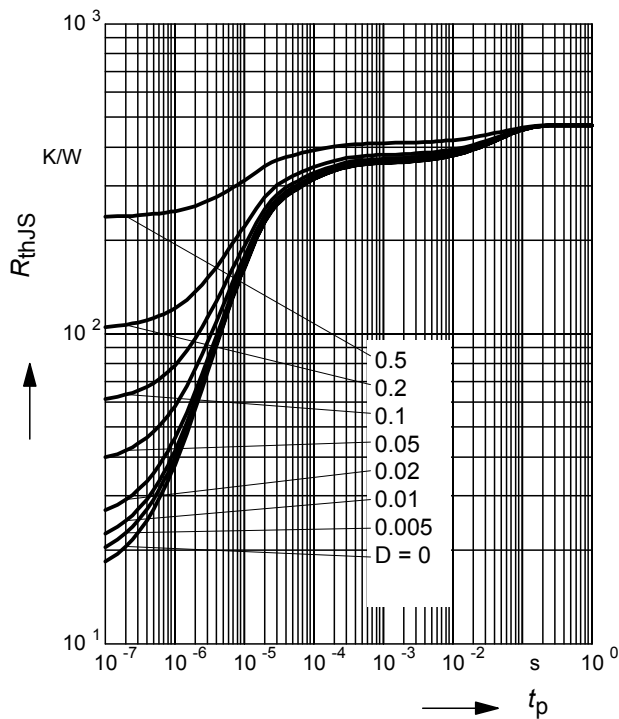
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-03W



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

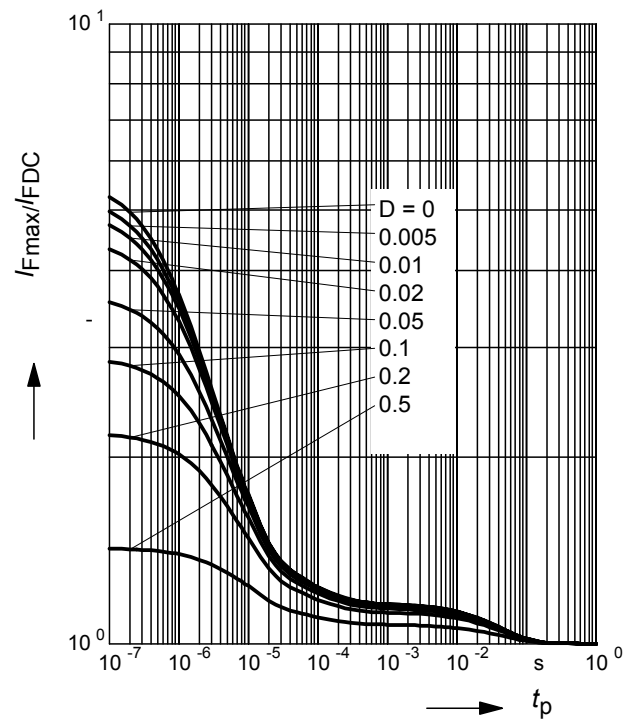
BAT62-07W



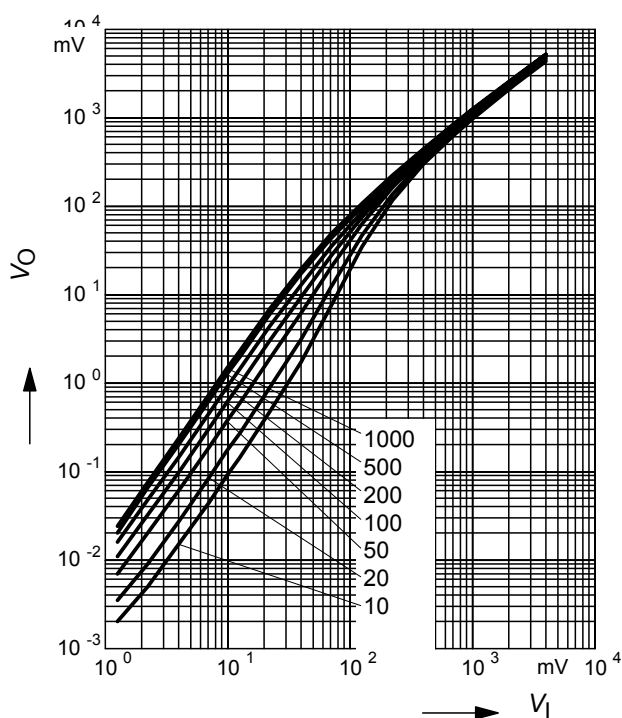
### Permissible Pulse Load

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

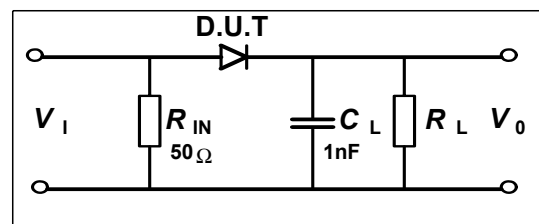
BAT62-07W



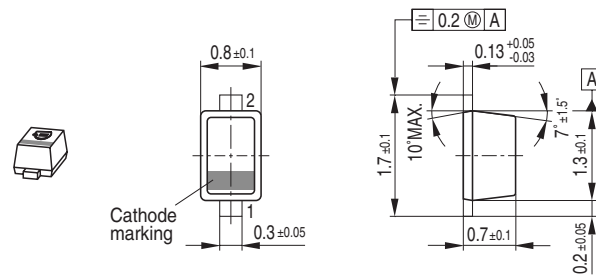
### Rectifier voltage $V_{out} = f(V_{in})$

 $f = 900\text{MHz}$ 
 $R_L = \text{Parameter in k}\Omega$ 


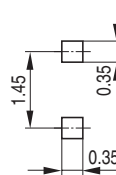
### Testcircuit



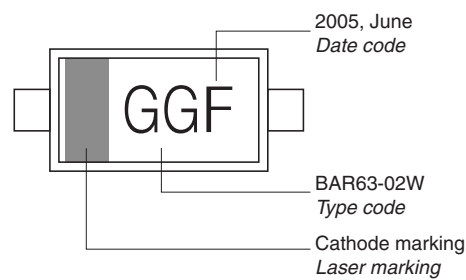
## Package Outline



## Foot Print

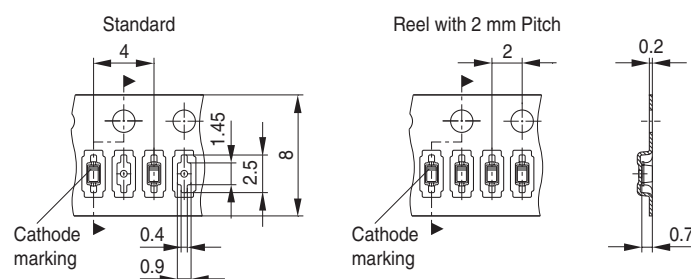


## Marking Layout (Example)



## 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

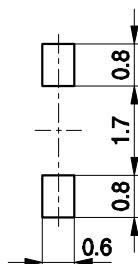
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q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

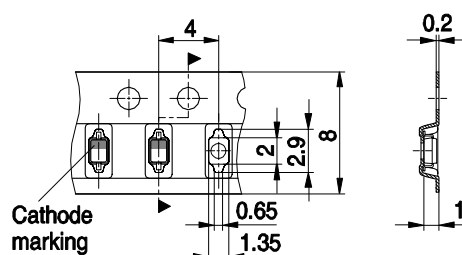


## Marking Layout (Example)

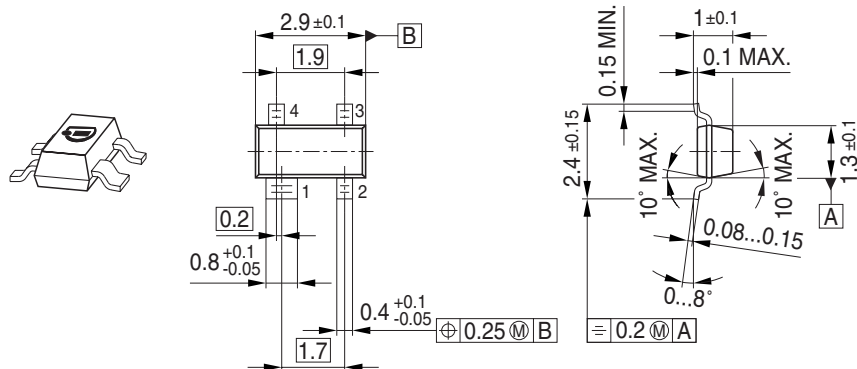


## Standard Packing

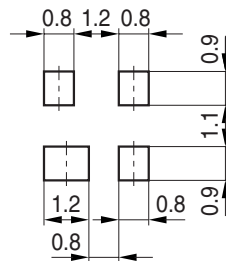
Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



## Package Outline



## Foot Print

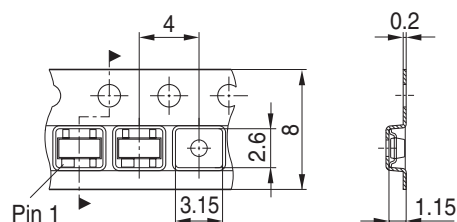


## Marking Layout (Example)

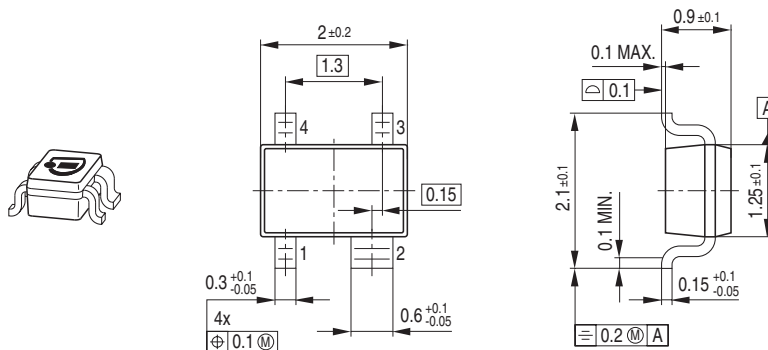


## Standard Packing

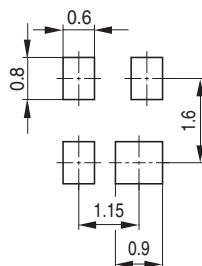
Reel  $\phi 180$  mm = 3.000 Pieces/Reel  
 Reel  $\phi 330$  mm = 10.000 Pieces/Reel



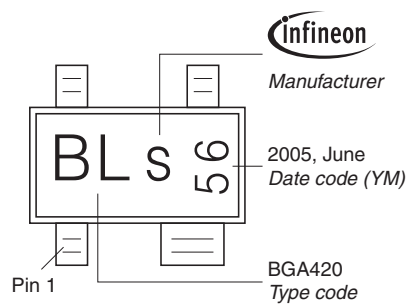
## Package Outline



## Foot Print

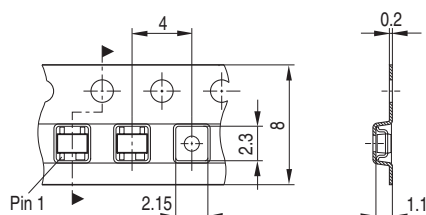


## Marking Layout (Example)

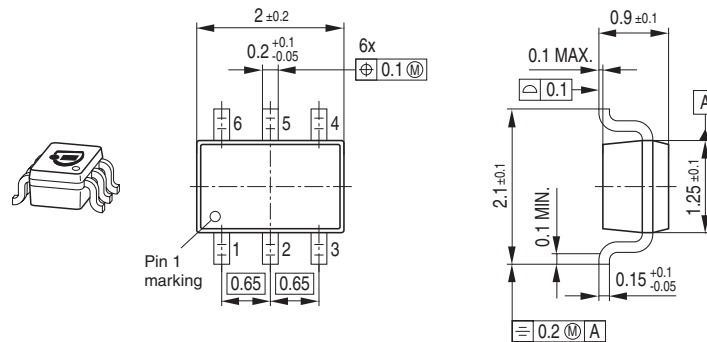


## Standard Packing

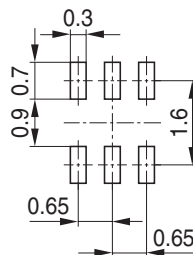
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø330 mm = 10.000 Pieces/Reel



## Package Outline

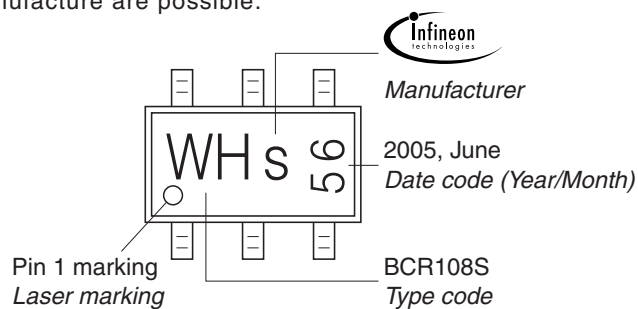


## Foot Print



## Marking Layout (Example)

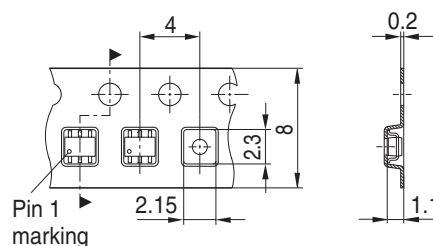
Small variations in positioning of Date code, Type code and Manufacture are possible.



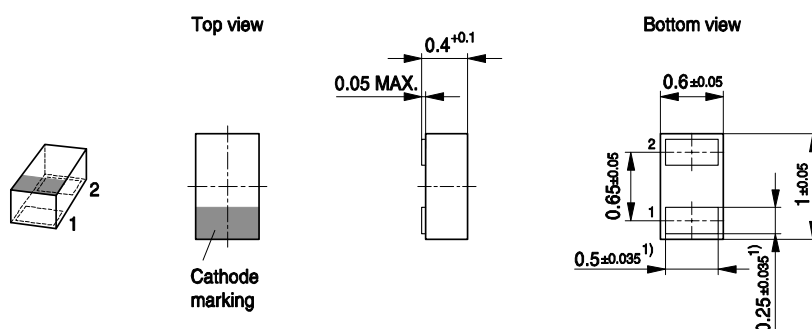
## Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.



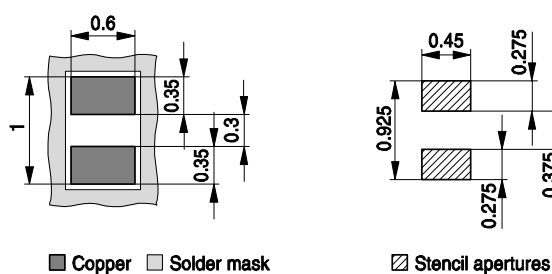
## Package Outline



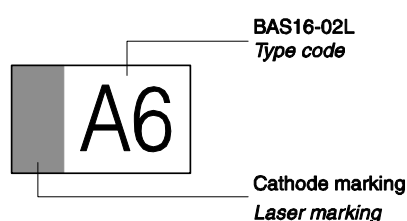
1) Dimension applies to plated terminal

## Foot Print

For board assembly information please refer to Infineon website "Packages"



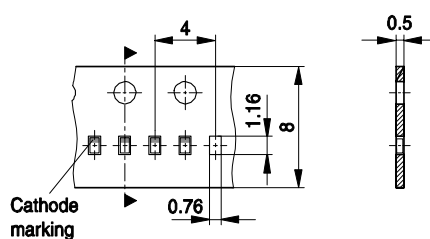
## Marking Layout (Example)



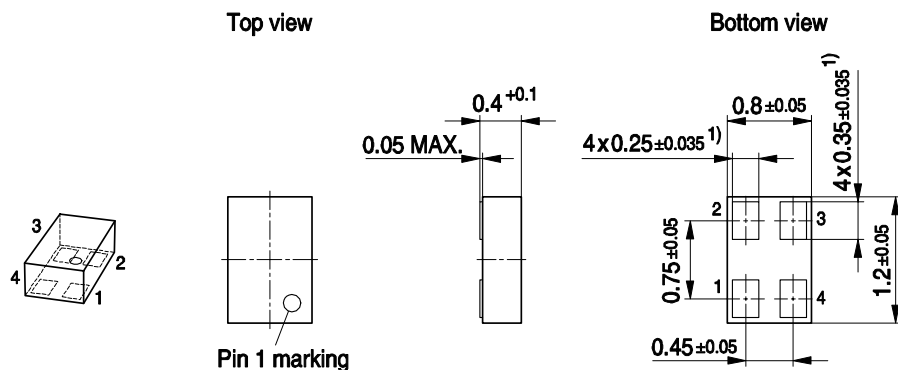
## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)



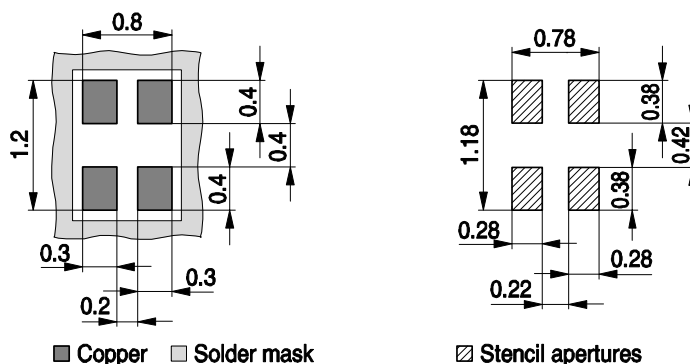
## Package Outline



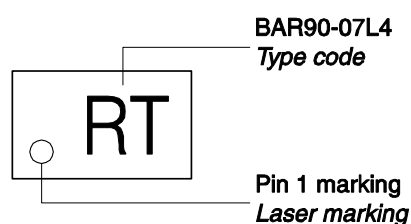
1) Dimension applies to plated terminal

## Foot Print

For board assembly information please refer to Infineon website "Packages"

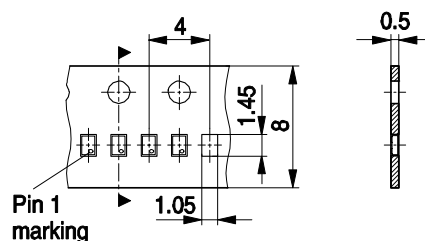


## Marking Layout (Example)

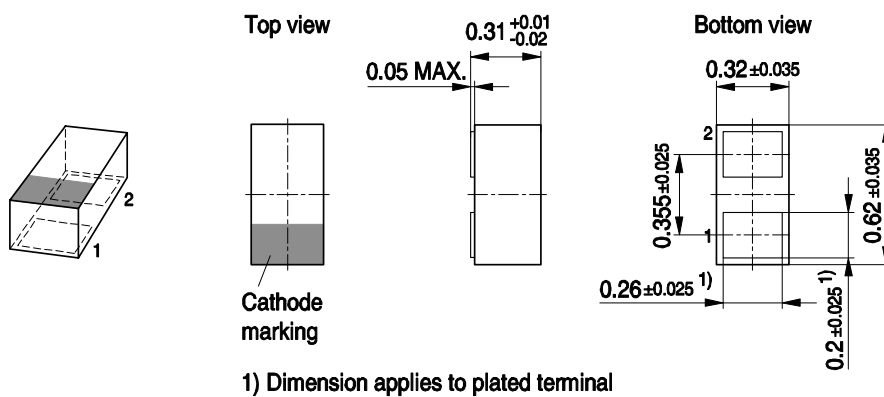


## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

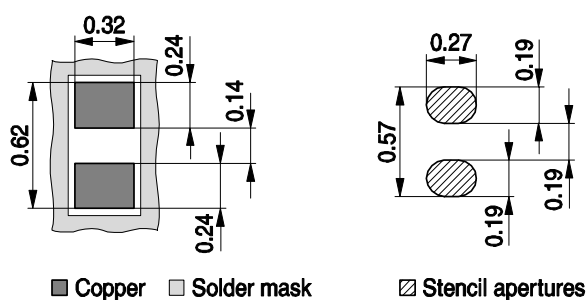


## Package Outline

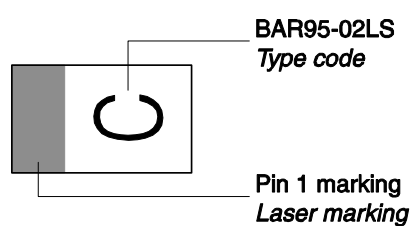


## Foot Print

For board assembly information please refer to Infineon website "Packages"

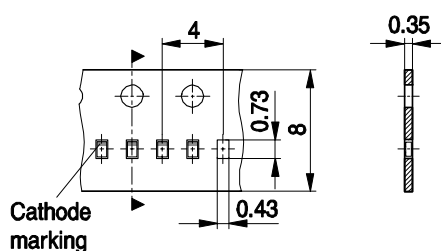


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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## **Warnings**

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office.

Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.