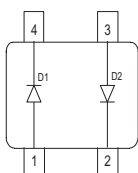


## Silicon Schottky Diode

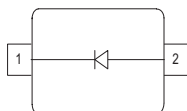
- Low barrier diode for detectors up to GHz frequencies
- Pb-free (RoHS compliant) package



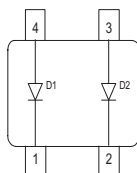
### BAT62



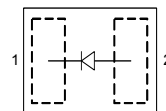
### BAT62-03W BAT62-02V BAT62-02W



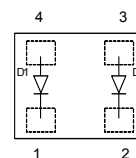
### BAT62-07W



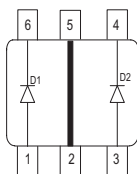
### BAT62-02L BAT62-02LS



### BAT62-07L4



### BAT62-09S



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

| Type        | Package   | Configuration                 | $L_S$ (nH) | Marking |
|-------------|-----------|-------------------------------|------------|---------|
| BAT62-02W** | SCD80     | single                        | 0.6        | 62      |
| 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       |
| BAT62-02V   | SC79      | single                        | 0.6        | k       |
| 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

\*\* Not for new design

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

| Parameter                                                                                                                                                                                                                                | Symbol           | Value                           | Unit |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------|------|
| Diode reverse voltage                                                                                                                                                                                                                    | $V_R$            | 40                              | V    |
| Forward current                                                                                                                                                                                                                          | $I_F$            | 20                              | mA   |
| Total power dissipation<br>BAT62, $T_S \leq 85\text{ °C}$<br>BAT62-02L, -07L4, -03W, $T_S \leq 108\text{ °C}$<br>BAT62-02W, -02V, $T_S \leq 109\text{ °C}$<br>BAT62-07W, $T_S \leq 103\text{ °C}$<br>BAT62-09S, $T_S \leq 105\text{ °C}$ | $P_{\text{tot}}$ | 100<br>100<br>100<br>100<br>100 |      |
| Junction temperature                                                                                                                                                                                                                     | $T_j$            | 150                             | °C   |
| Storage temperature                                                                                                                                                                                                                      | $T_{\text{stg}}$ | -55 ... 150                     |      |

**Thermal Resistance**

| Parameter                                                                                                               | Symbol            | Value                                                                    | Unit |
|-------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------|------|
| Junction - soldering point <sup>1)</sup><br>BAT62<br>BAT62-02L, -07L4, -03W<br>BAT62-02W, 02V<br>BAT62-07W<br>BAT62-09S | $R_{\text{thJS}}$ | $\leq 650$<br>$\leq 420$<br>$\leq 410$<br>$\leq 470$<br>$\leq \text{td}$ |      |

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

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

<sup>1)</sup>For calculation of  $R_{\text{thJA}}$  please refer to Application Note AN077 (Thermal Resistance Calculation)

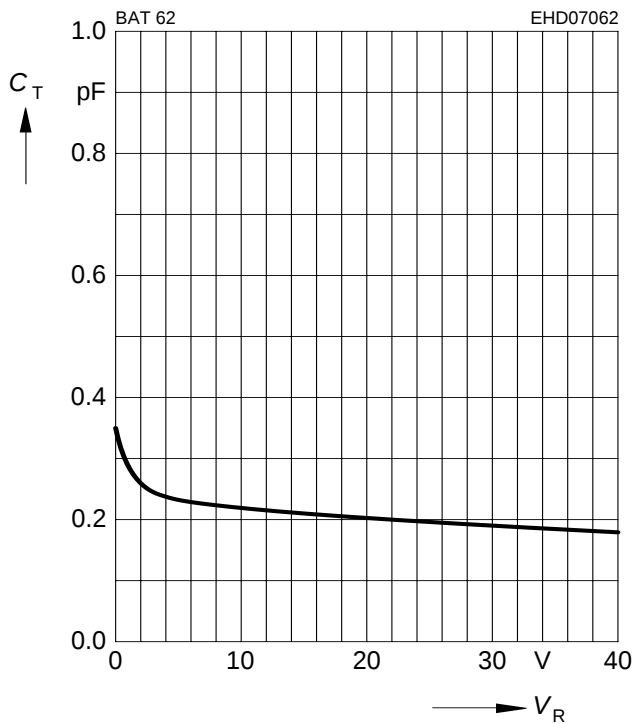
<sup>2)</sup> $\Delta V_F$  is the difference between lowest and highest  $V_F$  in a multiple diode component.

**Electrical Characteristics** at  $T_A = 25\text{ °C}$ , 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   |

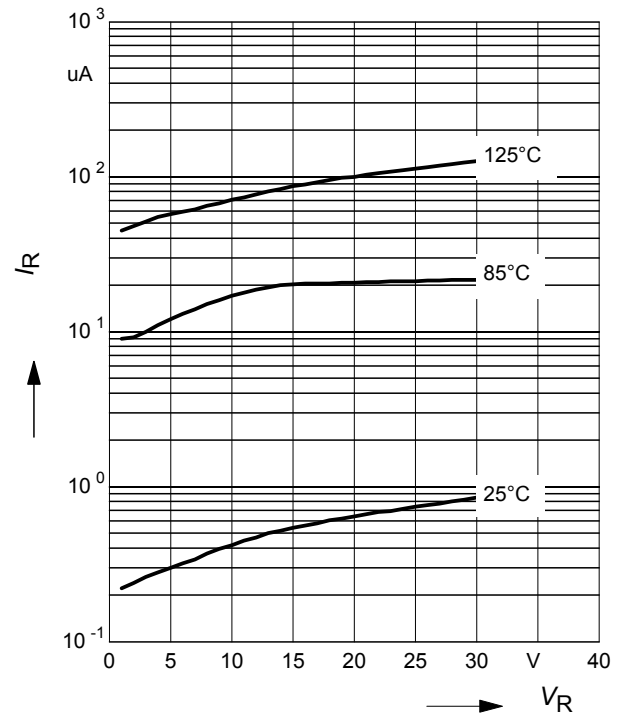
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



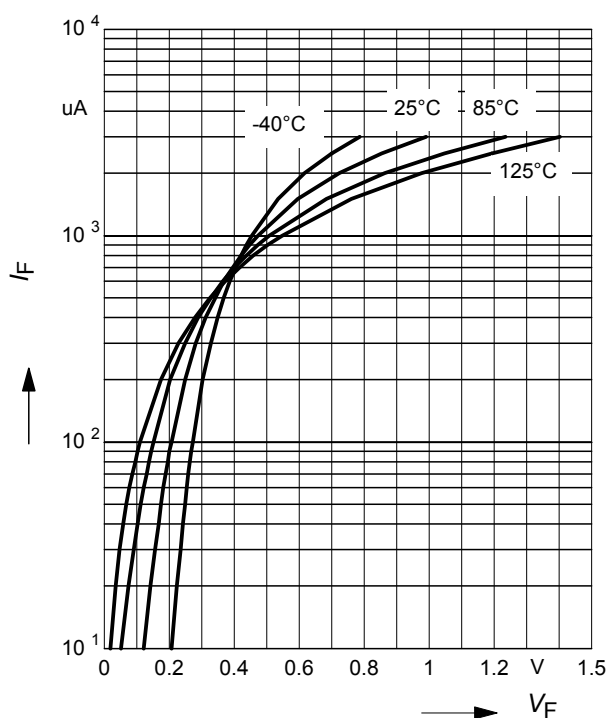
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



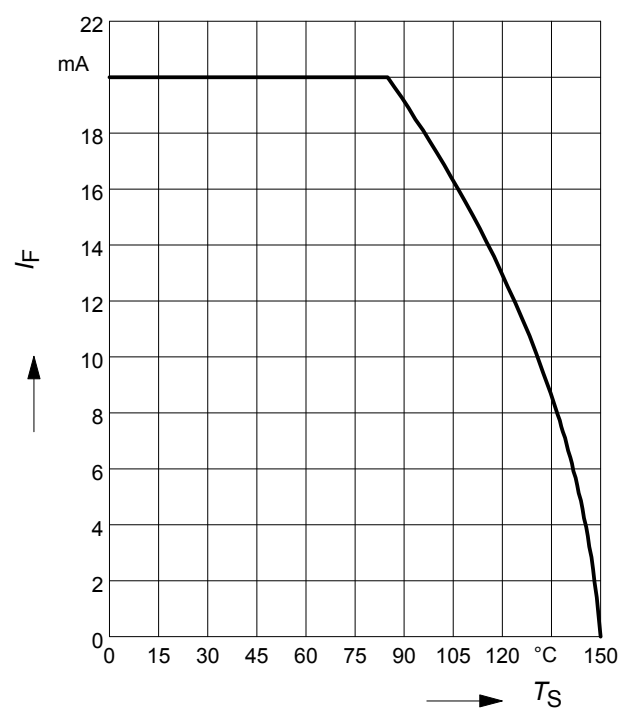
**Forward current  $I_F = f(V_F)$**

$T_A = \text{Parameter}$



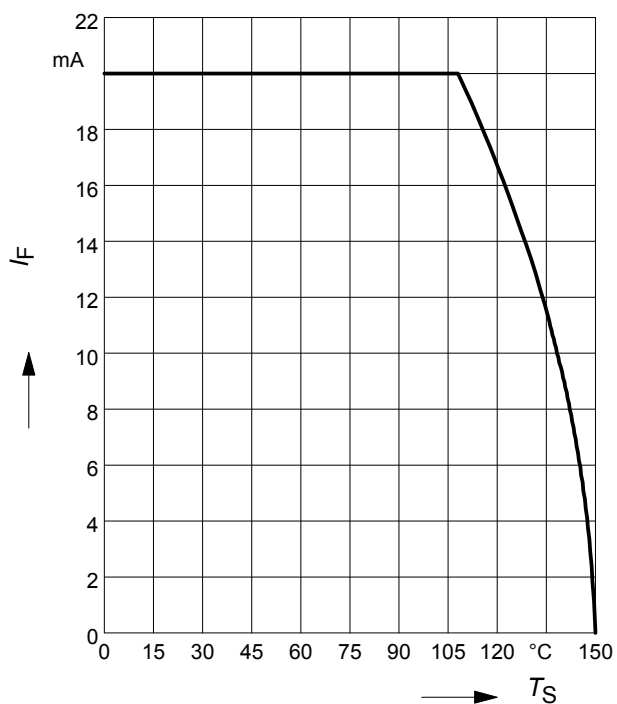
**Forward current  $I_F = f(T_S)$**

BAT62



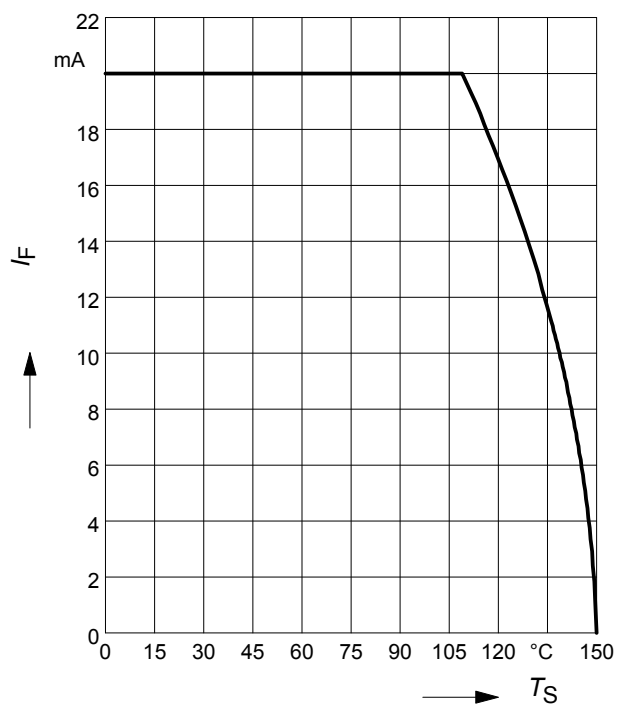
**Forward current  $I_F = f(T_S)$**

BAT62-02L, -07L4



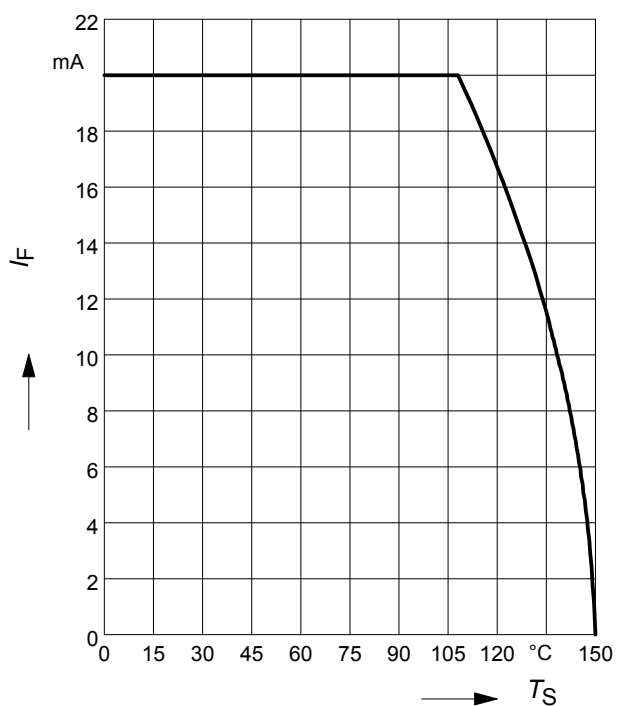
**Forward current  $I_F = f(T_S)$**

BAT62-02W, -02V



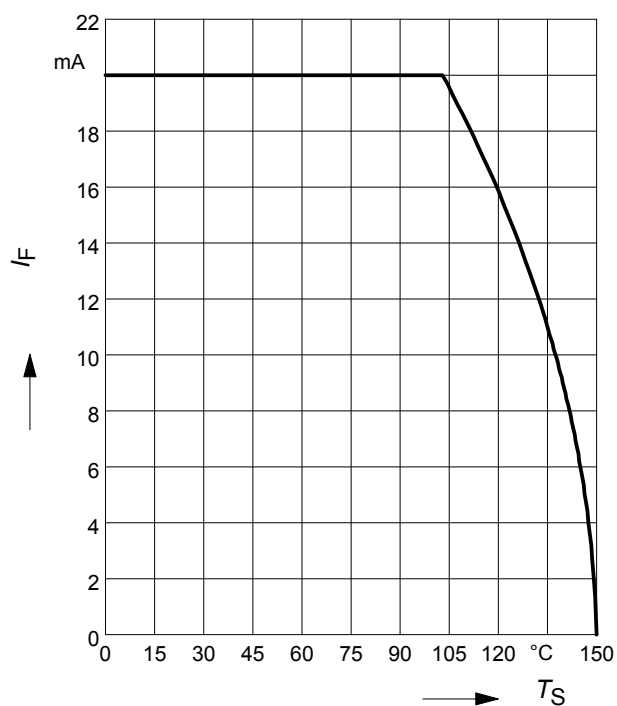
**Forward current  $I_F = f(T_S)$**

BAT62-03W



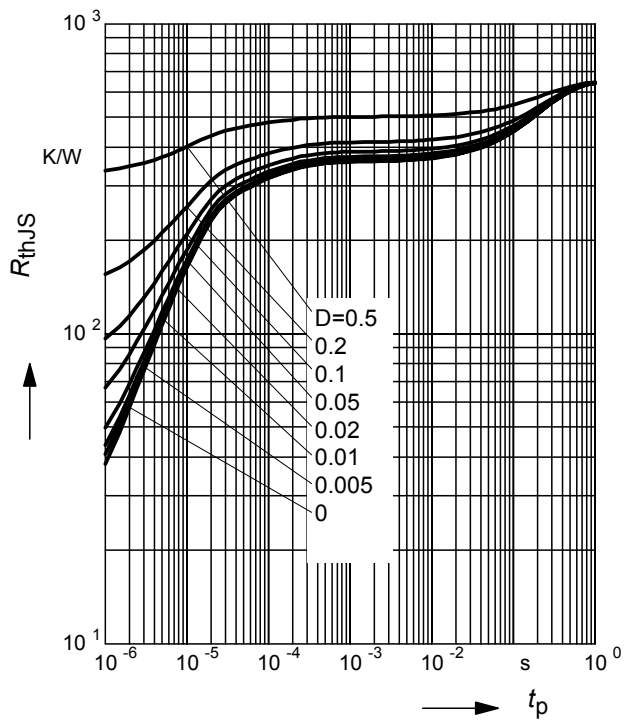
**Forward current  $I_F = f(T_S)$**

BAT62-07W



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

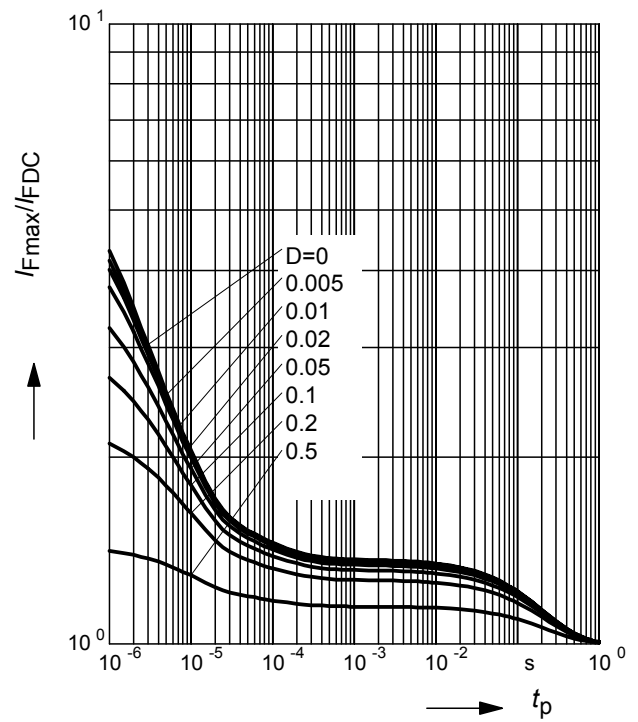
BAT62



### Permissible Pulse Load

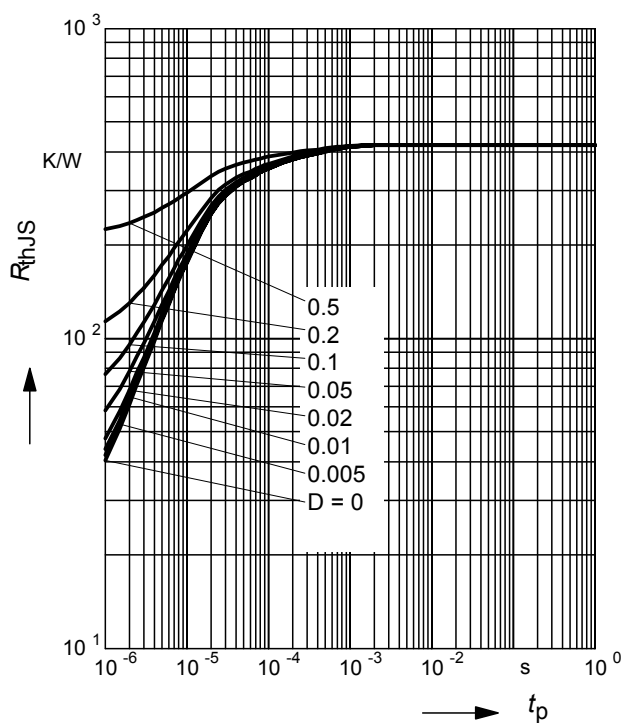
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62



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

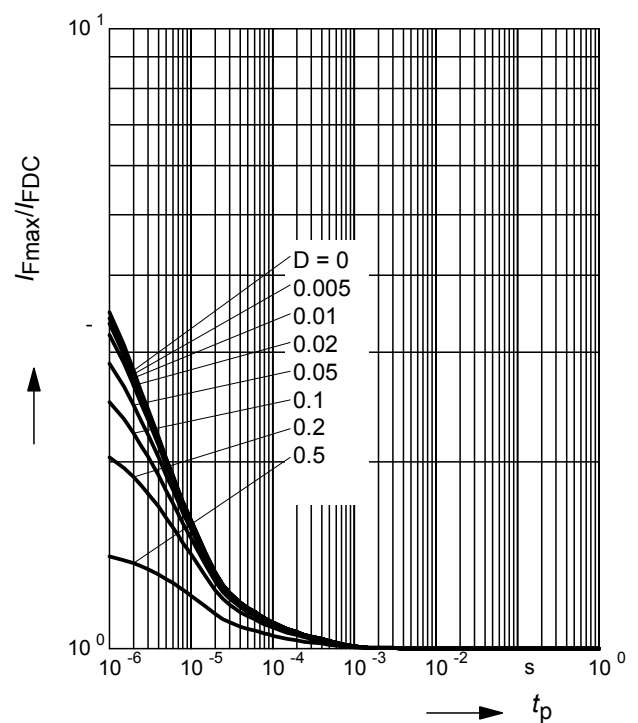
BAT62-02L, -07L4



### Permissible Pulse Load

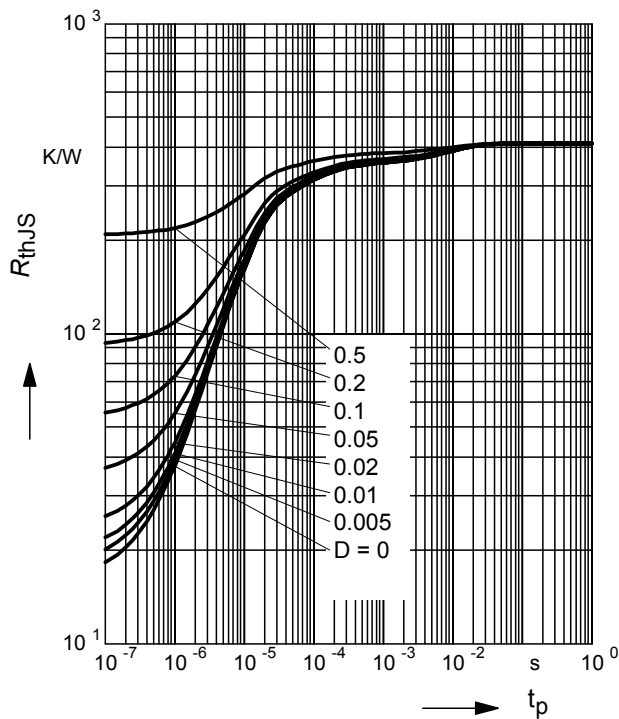
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-02L, -07L4



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

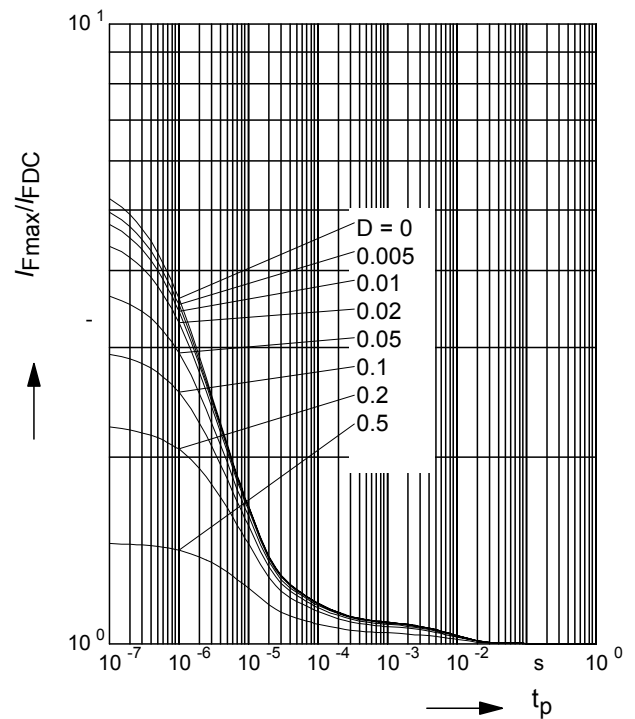
BAT62-02W, 02V



### Permissible Pulse Load

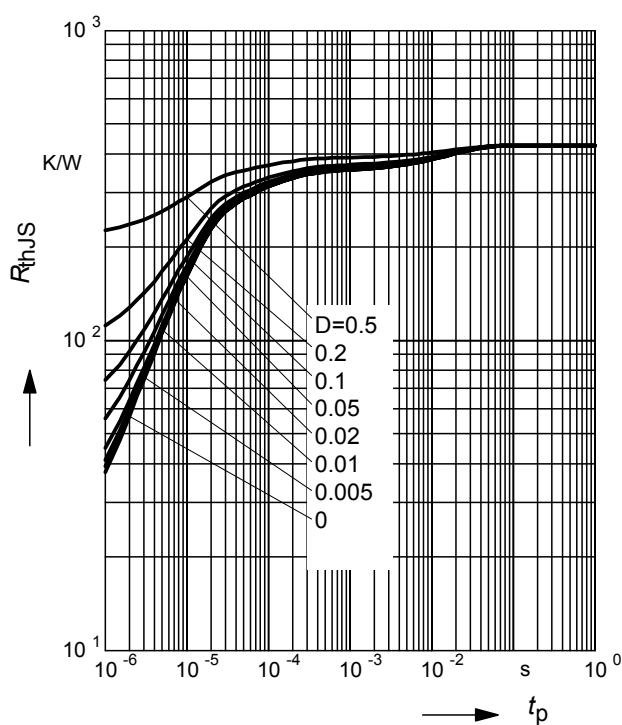
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-02W, -02V



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

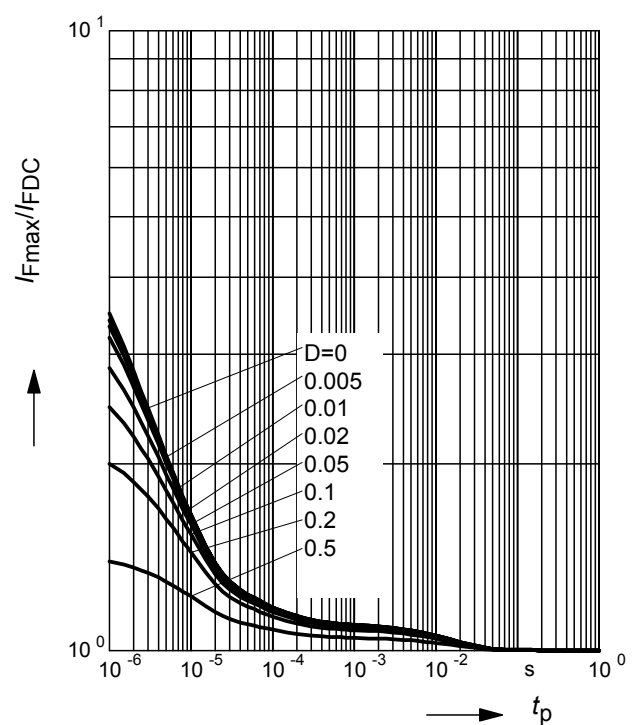
BAT62-03W



### Permissible Pulse Load

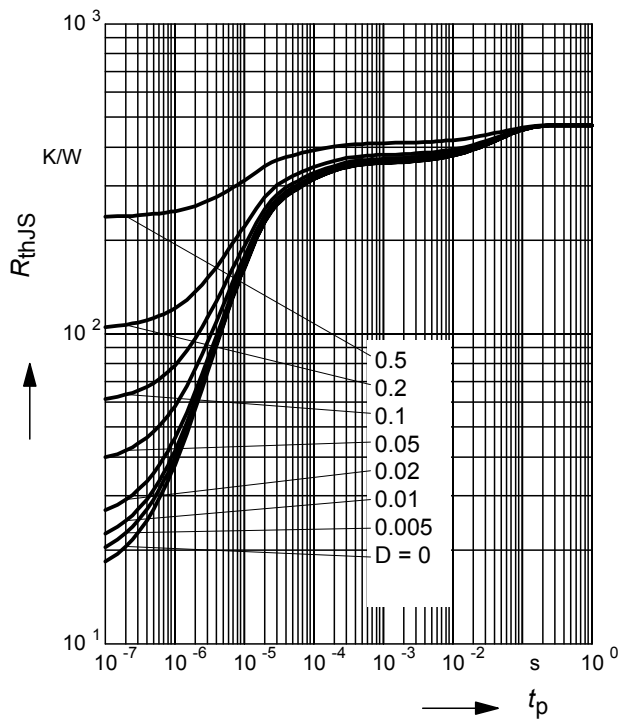
$$I_{Fmax}/I_{FDC} = f(t_p)$$

BAT62-03W



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

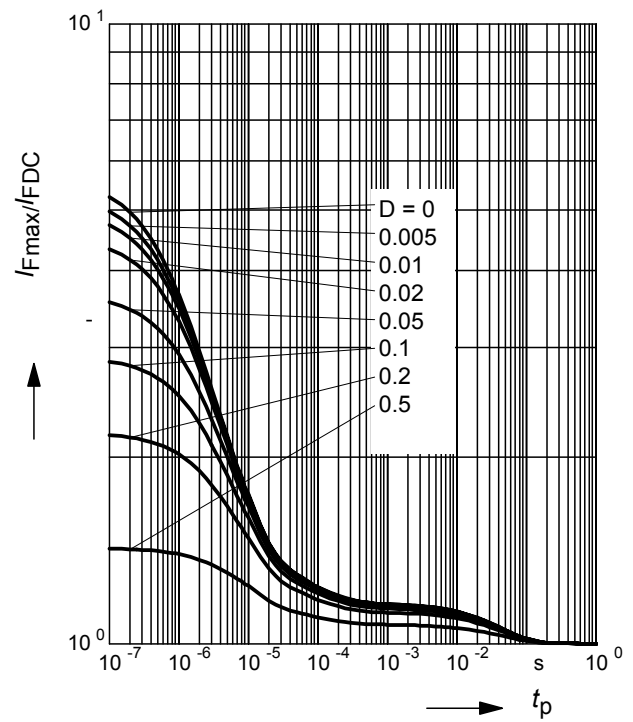
BAT62-07W



### Permissible Pulse Load

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

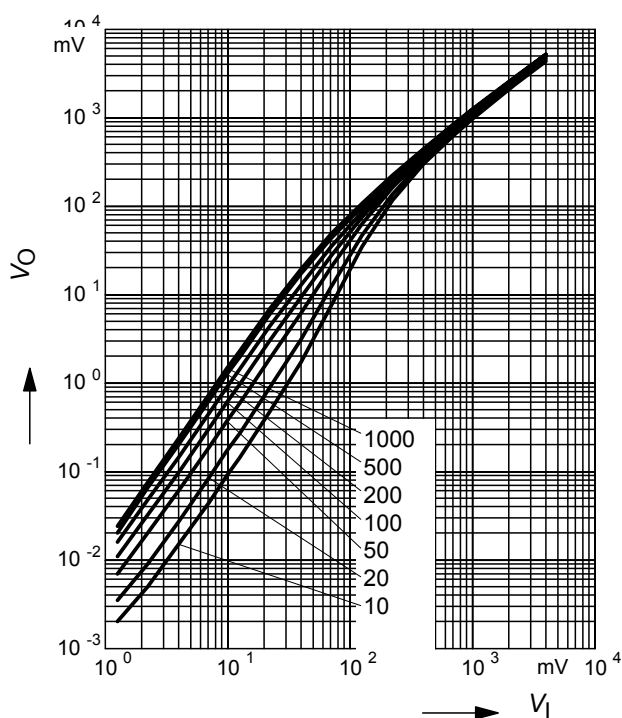
BAT62-07W



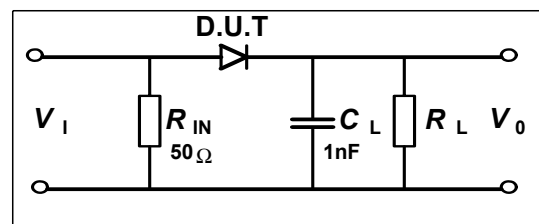
### Rectifier voltage $V_{out} = f(V_{in})$

$f = 900\text{MHz}$

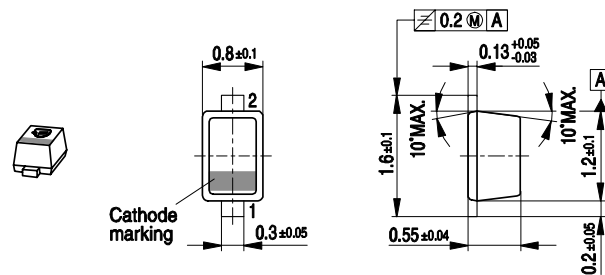
$R_L = \text{Parameter in k}\Omega$



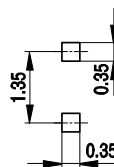
### Testcircuit



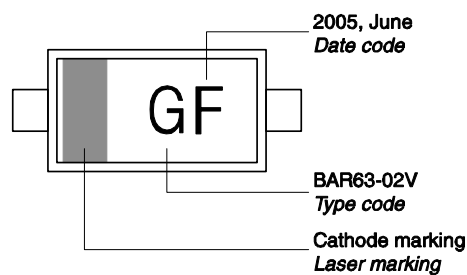
## Package Outline



## Foot Print

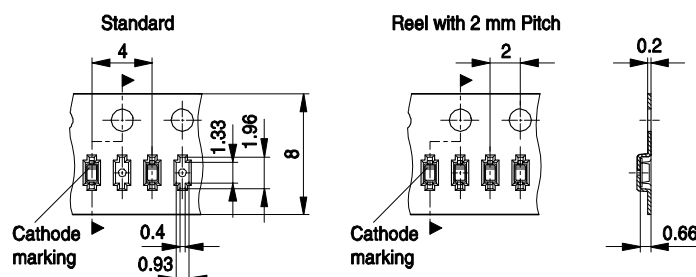


## Marking Layout (Example)



## Standard Packing

Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 180 \text{ mm}$  = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



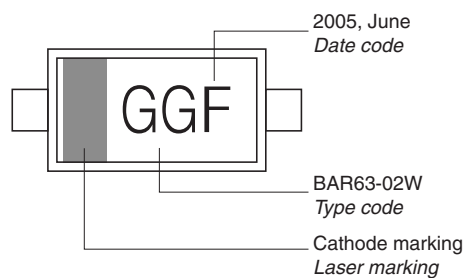
## Package Outline



## 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

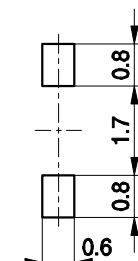
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q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

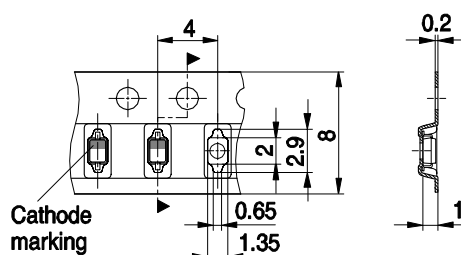


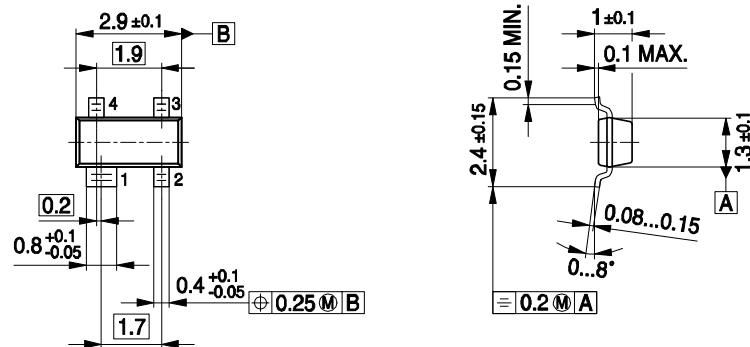
## Marking Layout (Example)



## Standard Packing

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

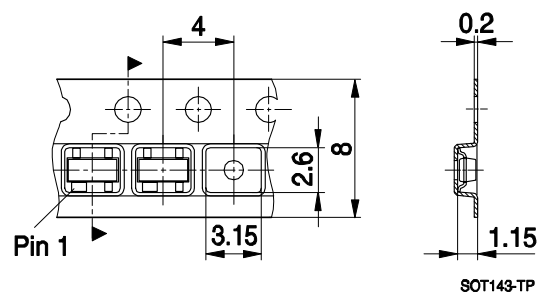




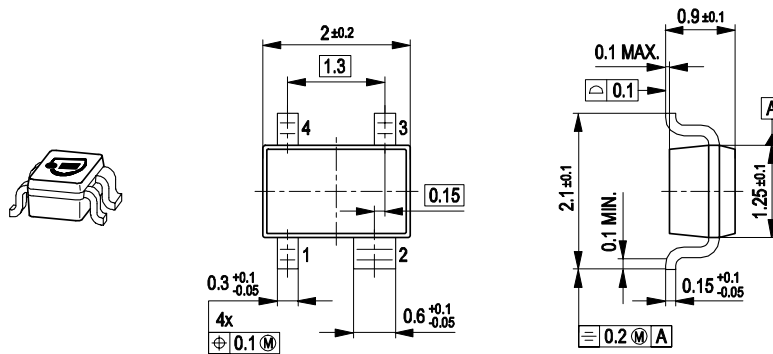
SOT143-PO V09

SOT143-FPR V09

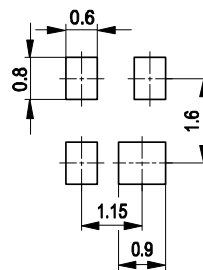
Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



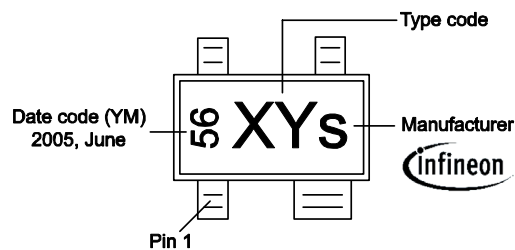
## Package Outline



## Foot Print

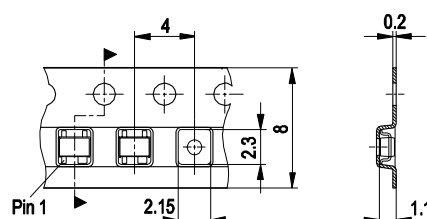


## Marking Layout (Example)

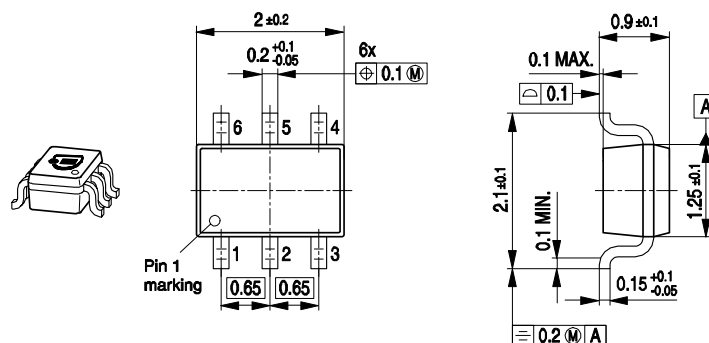


## Standard Packing

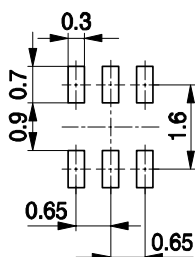
Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel  
 Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



## Package Outline

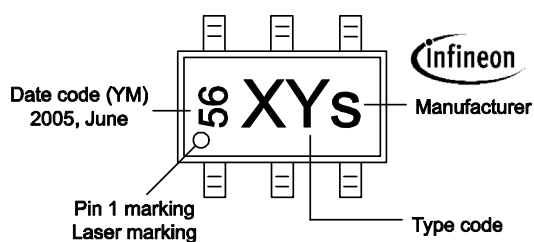


## Foot Print



## Marking Layout (Example)

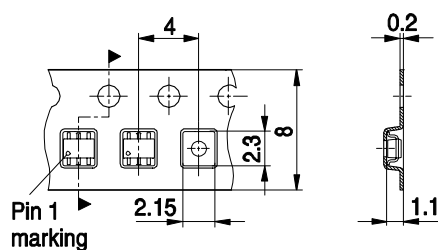
Small variations in positioning of  
Date code, Type code and Manufacturer are possible.



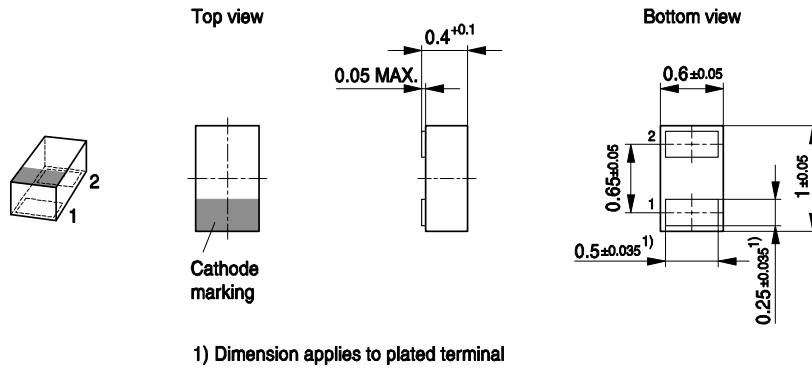
## Standard Packing

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

For symmetric types no defined Pin 1 orientation in reel.

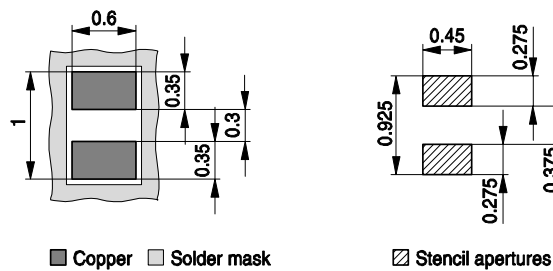


## Package Outline

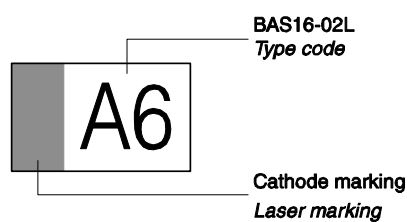


## Foot Print

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

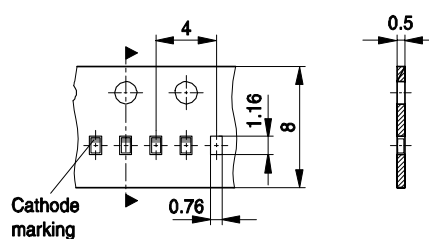


## Marking Layout (Example)

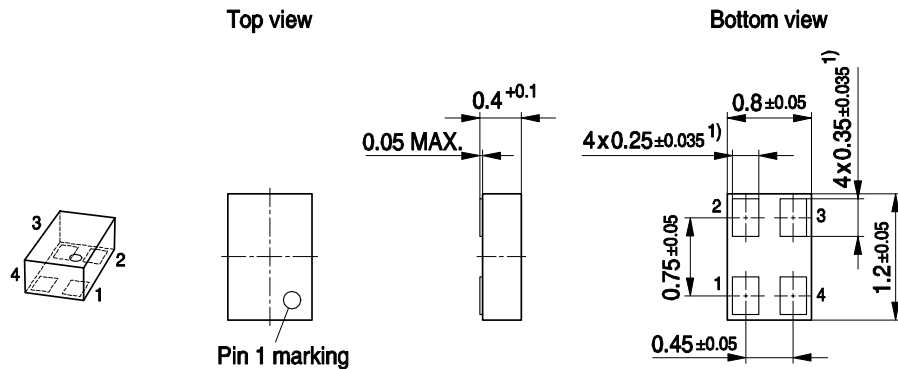


## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel  
Reel ø330 mm = 50.000 Pieces/Reel (optional)



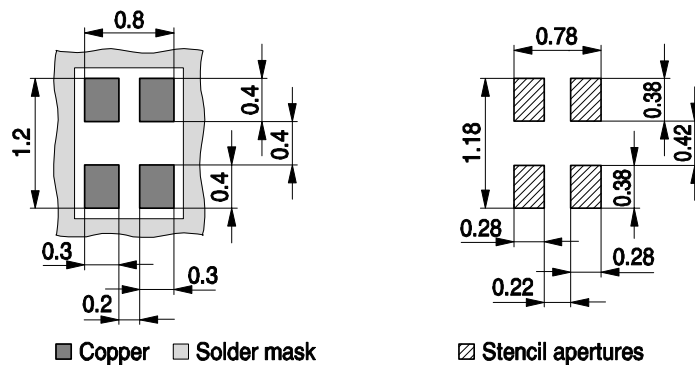
## Package Outline



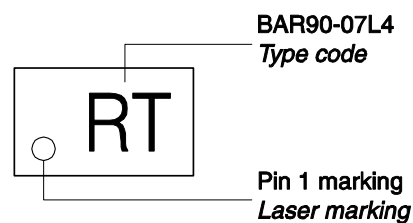
1) Dimension applies to plated terminal

## Foot Print

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

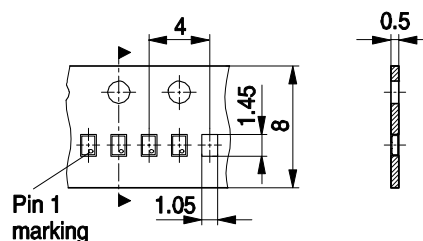


## Marking Layout (Example)

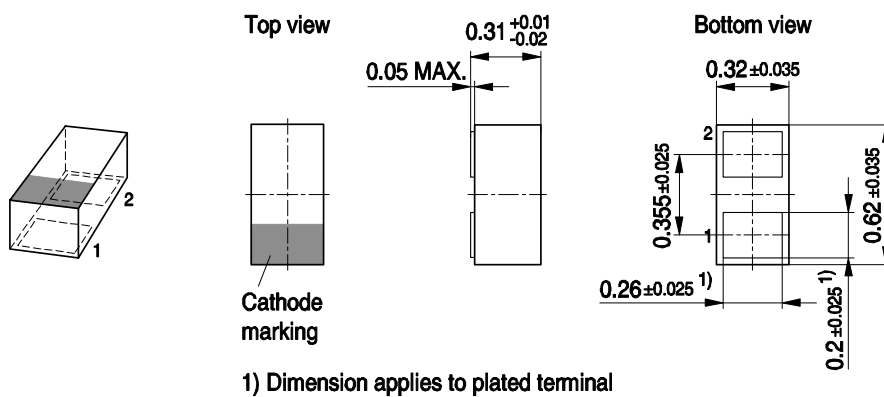


## Standard Packing

Reel  $\varnothing 180 \text{ mm}$  = 15.000 Pieces/Reel

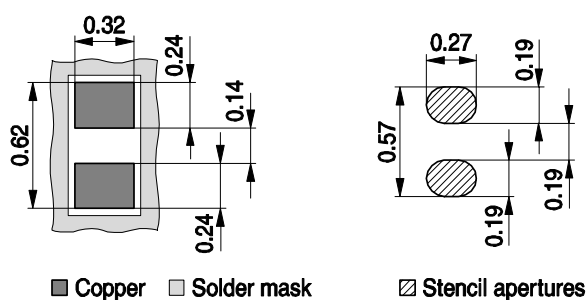


## Package Outline

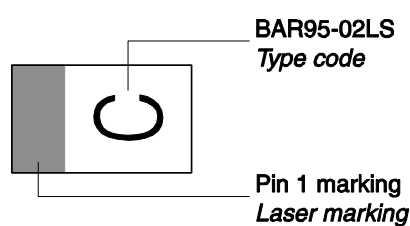


## Foot Print

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

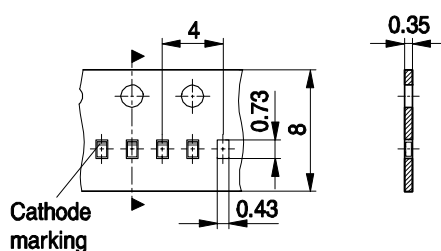


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel



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