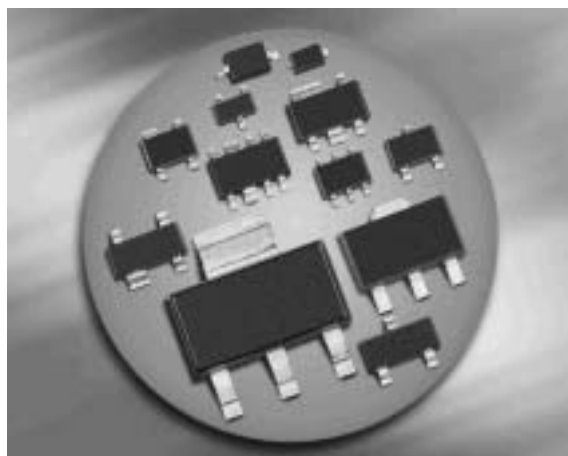
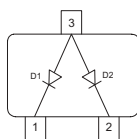
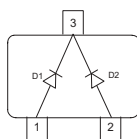
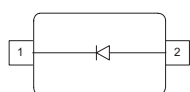


## Silicon Tuning Diodes

- Excellent linearity
- High Q hyperabrupt tuning diode
- Low series resistance
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- For low frequency control elements such as TCXOs and VCXOs
- Very low capacitance spread
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101


**BBY58-02L/V**
**BBY58-05W**
**BBY58-06W**
**BBY58-02W**
**BBY58-03W**


| Type      | Package  | Configuration    | $L_S$ (nH) | Marking |
|-----------|----------|------------------|------------|---------|
| BBY58-02L | TSLP-2-1 | single, leadless | 0.4        | 88      |
| BBY58-02V | SC79     | single           | 0.6        | 8       |
| BBY58-02W | SCD80    | single           | 0.6        | 88      |
| BBY58-03W | SOD323   | single           | 0.6        | 8 yel.  |
| BBY58-05W | SOT323   | common cathode   | 1.4        | B5s     |
| BBY58-06W | SOT323   | common anode     | 1.4        | B6s     |

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

| Parameter                   | Symbol    | Value       | Unit             |
|-----------------------------|-----------|-------------|------------------|
| Diode reverse voltage       | $V_R$     | 10          | V                |
| Forward current             | $I_F$     | 20          | mA               |
| Operating temperature range | $T_{op}$  | -55 ... 150 | $^\circ\text{C}$ |
| Storage temperature         | $T_{stg}$ | -55 ... 150 |                  |

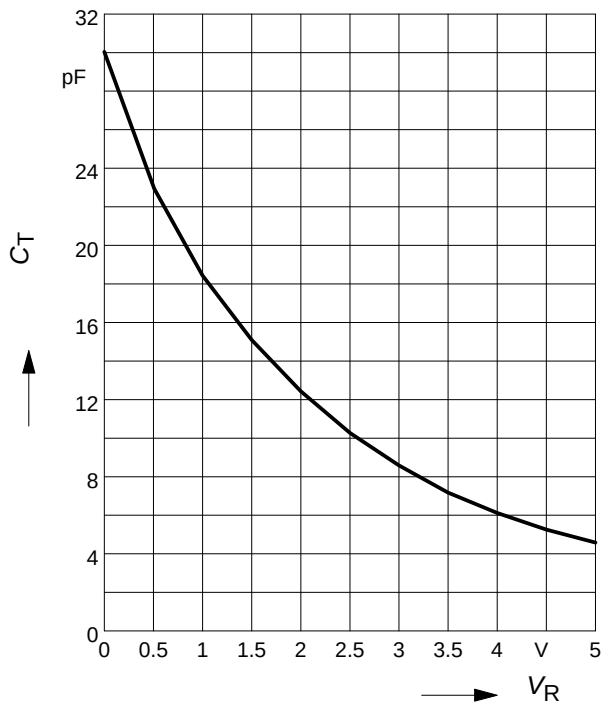
<sup>1)</sup>Pb-containing package may be available upon special request

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

| Parameter                                                              | Symbol          | Values |       |      | Unit     |
|------------------------------------------------------------------------|-----------------|--------|-------|------|----------|
|                                                                        |                 | min.   | typ.  | max. |          |
| DC Characteristics                                                     |                 |        |       |      |          |
| Reverse current                                                        | $I_R$           |        |       |      | nA       |
| $V_R = 8\text{ V}$                                                     |                 | -      | -     | 10   |          |
| $V_R = 8\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$                   |                 | -      | -     | 100  |          |
| AC Characteristics                                                     |                 |        |       |      |          |
| Diode capacitance                                                      | $C_T$           |        |       |      | pF       |
| $V_R = 1\text{ V}, f = 1\text{ MHz}$                                   |                 | 17.5   | 18.3  | 19.3 |          |
| $V_R = 2\text{ V}, f = 1\text{ MHz}$                                   |                 | 11.4   | 12.35 | 13.3 |          |
| $V_R = 3\text{ V}, f = 1\text{ MHz}$                                   |                 | 7.8    | 8.6   | 9.3  |          |
| $V_R = 4\text{ V}, f = 1\text{ MHz}$                                   |                 | 5.5    | 6     | 6.6  |          |
| $V_R = 6\text{ V}, f = 1\text{ MHz}$                                   |                 | 3.8    | 4.7   | 5.5  |          |
| Capacitance ratio                                                      | $C_{T1}/C_{T3}$ | 1.9    | 2.15  | 2.4  | -        |
| $V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$                 |                 |        |       |      |          |
| Capacitance ratio                                                      | $C_{T1}/C_{T4}$ | 2.7    | 3.05  | 3.5  |          |
| $V_R = 1\text{ V}, V_R = 4\text{ V}, f = 1\text{ MHz}$                 |                 |        |       |      |          |
| Capacitance ratio                                                      | $C_{T4}/C_{T6}$ | 1.15   | 1.3   | 1.45 |          |
| $V_R = 4\text{ V}, V_R = 6\text{ V}, f = 1\text{ MHz}$                 |                 |        |       |      |          |
| Series resistance                                                      | $r_S$           |        |       |      | $\Omega$ |
| $V_R = 1\text{ V}, f = 470\text{ MHz}, \text{BBY58-02L}, \text{-07L4}$ |                 | -      | 0.3   | -    |          |
| $V_R = 1\text{ V}, f = 470\text{ MHz}, \text{all other}$               |                 | -      | 0.25  | -    |          |

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

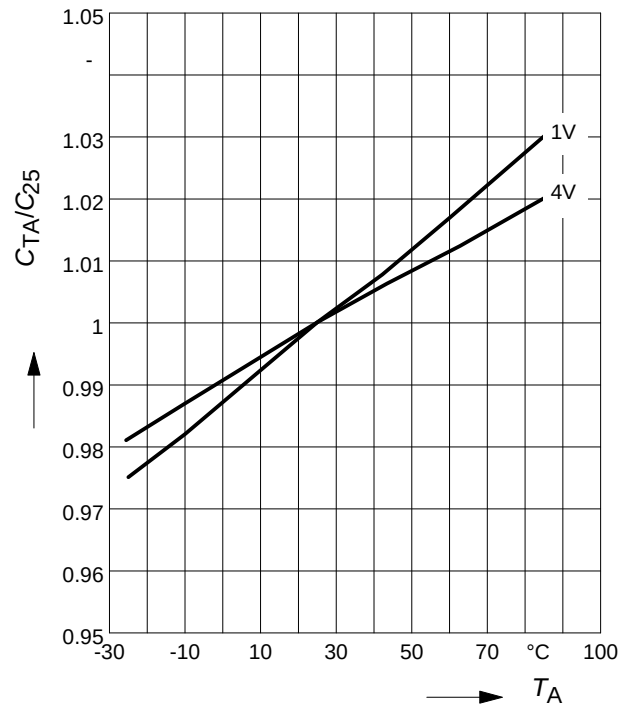
$f = 1\text{MHz}$



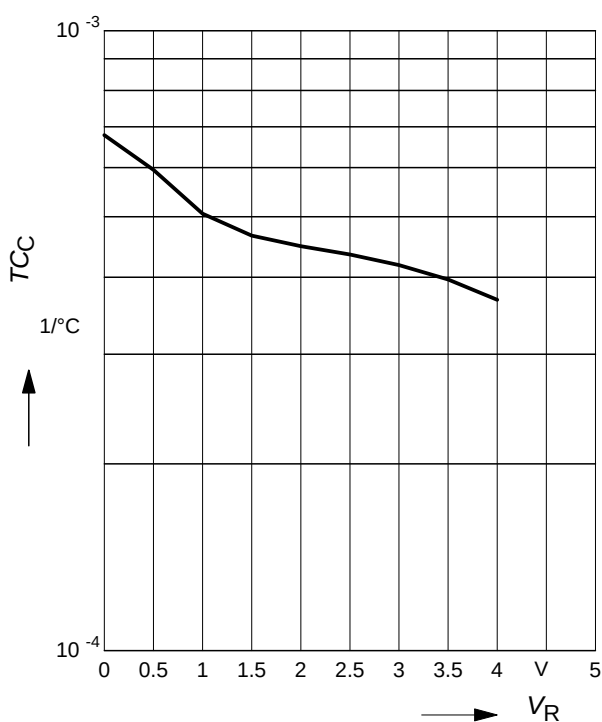
### Normalized diode capacitance

$$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A)$$

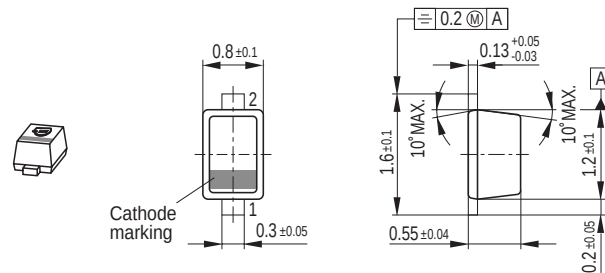
$f = 1\text{MHz}$ ,  $V_R = \text{Parameter}$



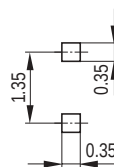
### Temperature coefficient of the diode capacitance $T_{CC} = f(V_R)$



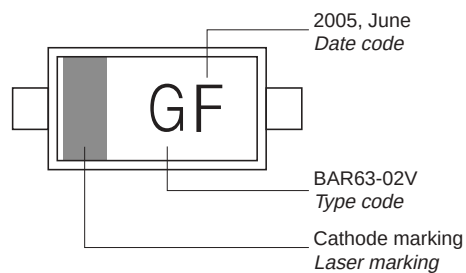
## Package Outline



## Foot Print

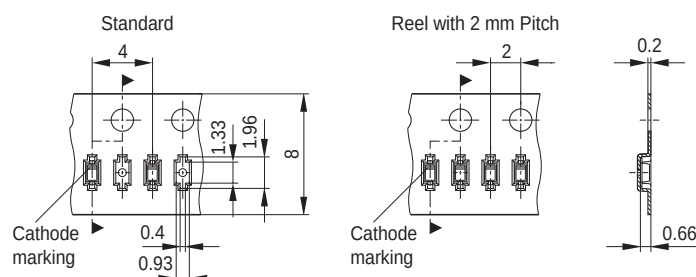


## Marking Layout (Example)

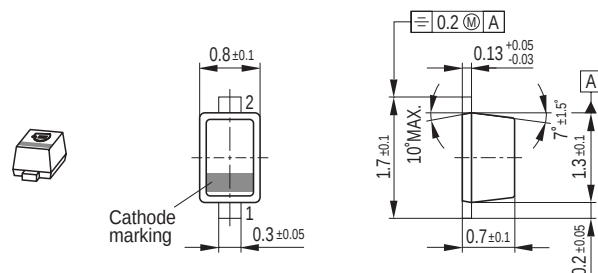


## Standard Packing

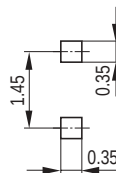
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



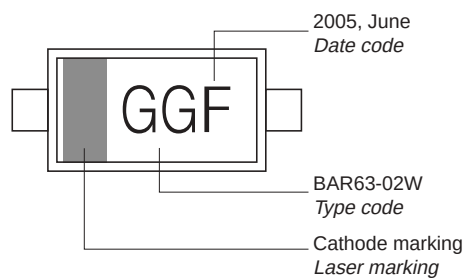
## Package Outline



## Foot Print

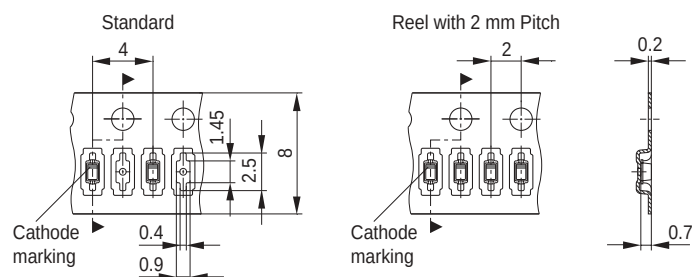


## Marking Layout (Example)



## 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

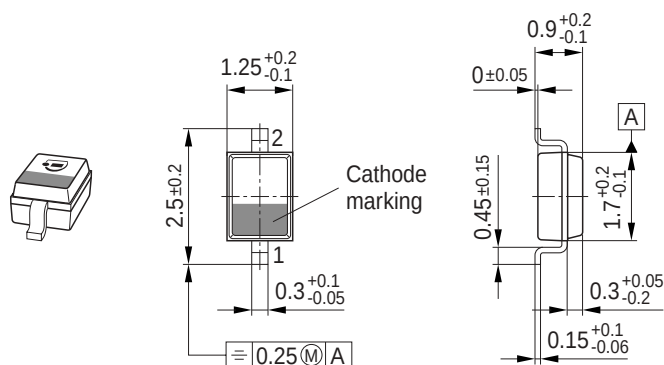


# Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

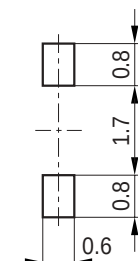
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q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

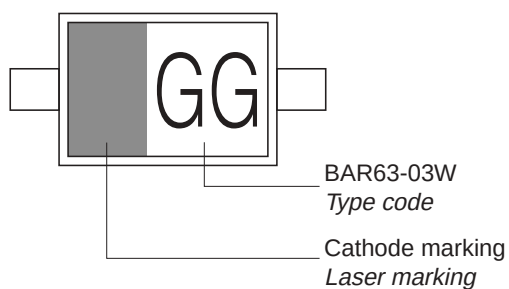
## Package Outline



## Foot Print

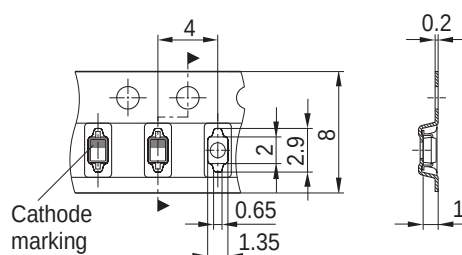


## Marking Layout (Example)

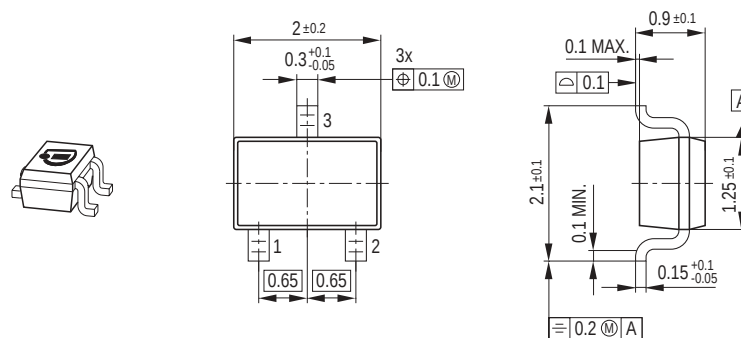


## Standard Packing

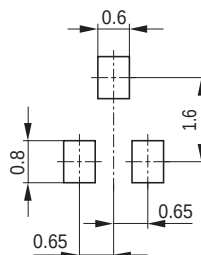
Reel  $\varnothing 180$  mm = 3.000 Pieces/Reel  
 Reel  $\varnothing 330$  mm = 10.000 Pieces/Reel



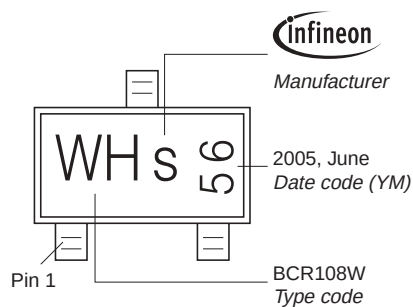
## Package Outline



## Foot Print

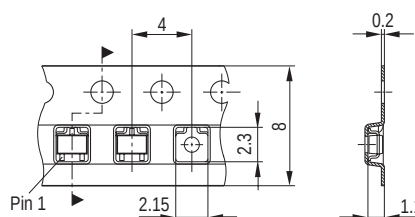


## Marking Layout (Example)



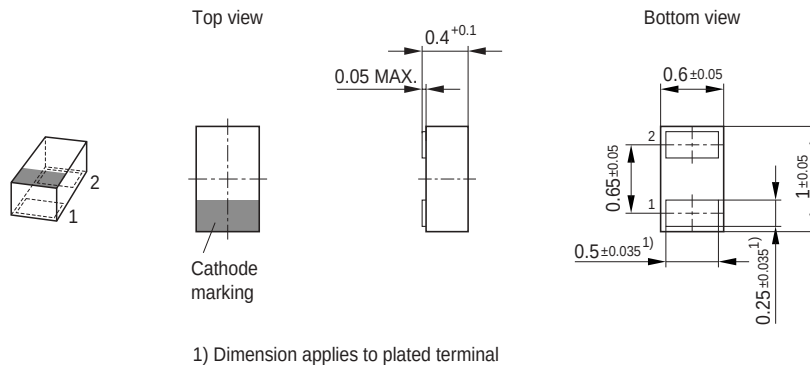
## Standard Packing

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



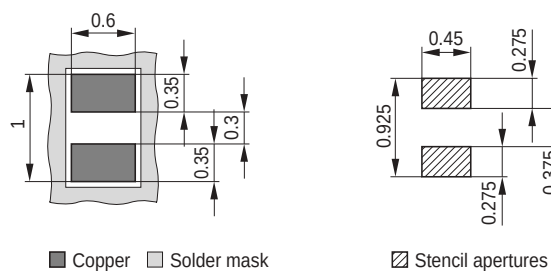


## Package Outline

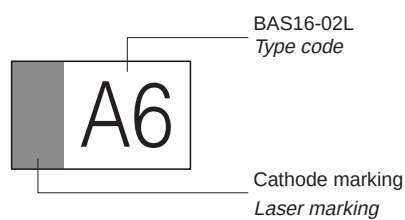


## Foot Print

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



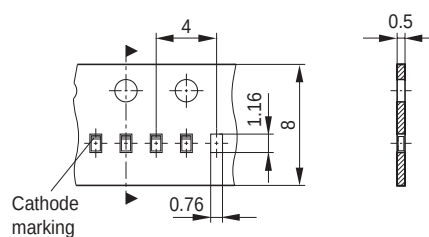
## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 15.000 Pieces/Reel

Reel ø330 mm = 50.000 Pieces/Reel (optional)



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

© Infineon Technologies AG 2007.

All Rights Reserved.

### **Attention please!**

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

### **Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

### **Warnings**

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

Infineon Technologies Components may only be used in life-support devices or systems 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.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## Infineon:

[BBY 58-02V H6327](#) [BBY 58-02W H6327](#) [BBY 58-03W E6327](#) [BBY 58-05W H6327](#) [BBY 58-06W H6327](#) [BBY 58-02V E6327](#) [BBY 58-06W E6327](#) [BBY 58-02L E6327](#) [BBY 58-02W E6327](#) [BBY 58-02W E6127](#) [BBY 58-05W E6327](#)  
[BBY5802VH6327XTSA1](#)