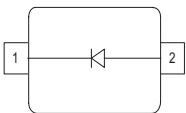
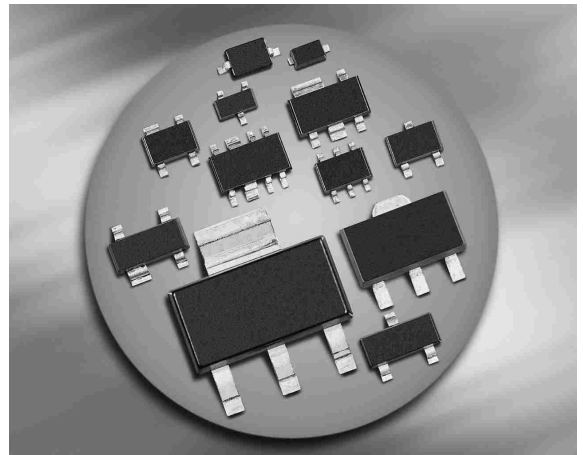


**Silicon Tuning Diode**

- For SAT tuners
- High capacitance ratio
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure
- Pb-free (RoHS compliant) package


**BB837**
**BB857**
**BB857-02V**


| Type      | Package | Configuration | Marking |
|-----------|---------|---------------|---------|
| BB837     | SOD323  | single        | white M |
| BB857*    | SCD80   | single        | OO      |
| BB857-02V | SC79    | single        | P       |

\* Not for new design

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

| Parameter                                 | Symbol    | Value       | Unit |
|---|-----------|-------------|------|
| Diode reverse voltage                     | $V_R$     | 30          | V    |
| Peak reverse voltage<br>$R \geq 5k\Omega$ | $V_{RM}$  | 35          |      |
| Forward current                           | $I_F$     | 20          | mA   |
| Operating temperature range               | $T_{op}$  | -55 ... 150 | °C   |
| Storage temperature                       | $T_{Stg}$ | -55 ... 150 |      |

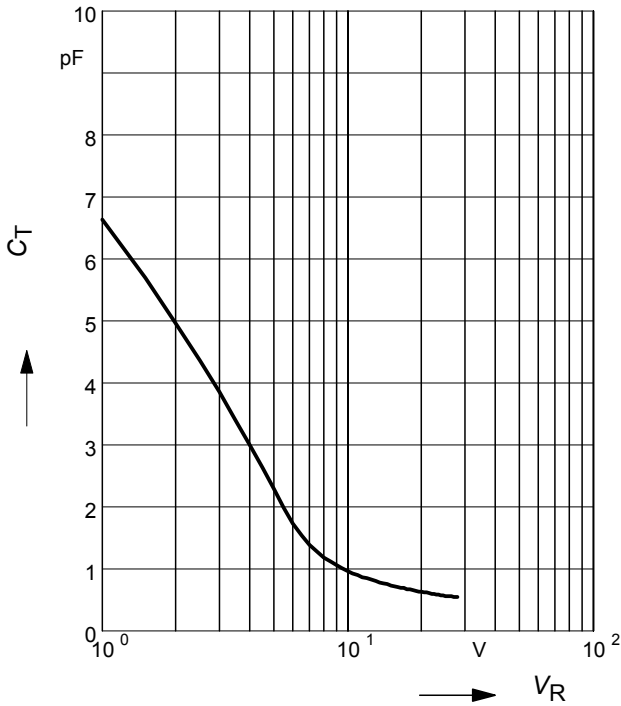
**Electrical Characteristics at  $T_A = 25\text{ °C}$ , unless otherwise specified**

| Parameter   | Symbol           | Values |      |      | Unit     |
|---|------------------|--------|------|------|----------|
|   |                  | min.   | typ. | max. |          |
| <b>DC Characteristics</b>   |                  |        |      |      |          |
| Reverse current<br>$V_R = 30\text{ V}$<br>$V_R = 30\text{ V}, T_A = 85\text{ °C}$   | $I_R$            | -      | -    | 10   | nA       |
|   |                  | -      | -    | 200  |          |
| <b>AC Characteristics</b>   |                  |        |      |      |          |
| Diode capacitance<br>$V_R = 1\text{ V}, f = 1\text{ MHz}$<br>$V_R = 25\text{ V}, f = 1\text{ MHz}$<br>$V_R = 28\text{ V}, f = 1\text{ MHz}$ | $C_T$            | 6      | 6.6  | 7.2  | pF       |
|   |                  | 0.5    | 0.55 | 0.65 |          |
|   |                  | 0.45   | 0.52 | -    |          |
| Capacitance ratio<br>$V_R = 1\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$  | $C_{T1}/C_{T25}$ | 10.2   | 12   | -    | -        |
| Capacitance ratio<br>$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$  | $C_{T1}/C_{T28}$ | 9.7    | 12.7 | -    |          |
| Capacitance matching <sup>1)</sup><br>$V_R = 1\text{ V} \dots 28\text{ V}, f = 1\text{ MHz}, 7\text{ diodes sequence}$                      | $\Delta C_T/C_T$ | -      | -    | 5    | %        |
| Series resistance<br>$V_R = 5\text{ V}, f = 470\text{ MHz}$   | $r_S$            | -      | 1.5  | -    | $\Omega$ |

<sup>1</sup>For details please refer to Application Note 047

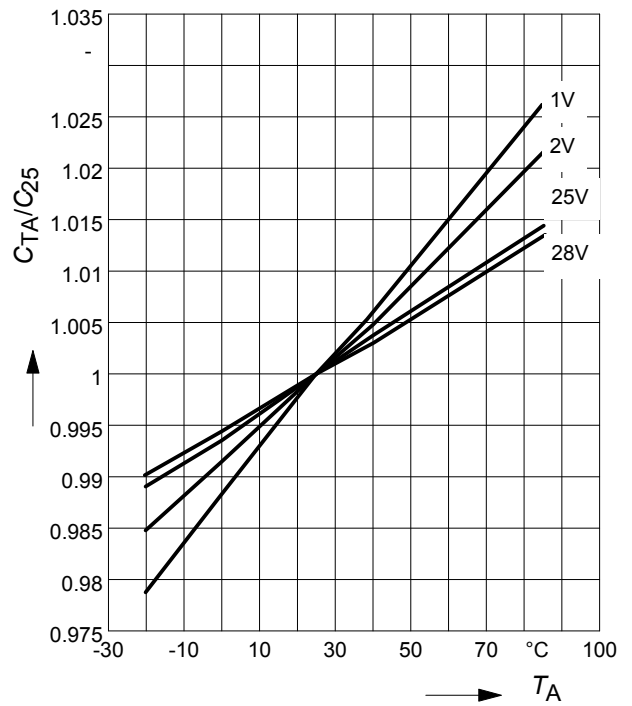
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



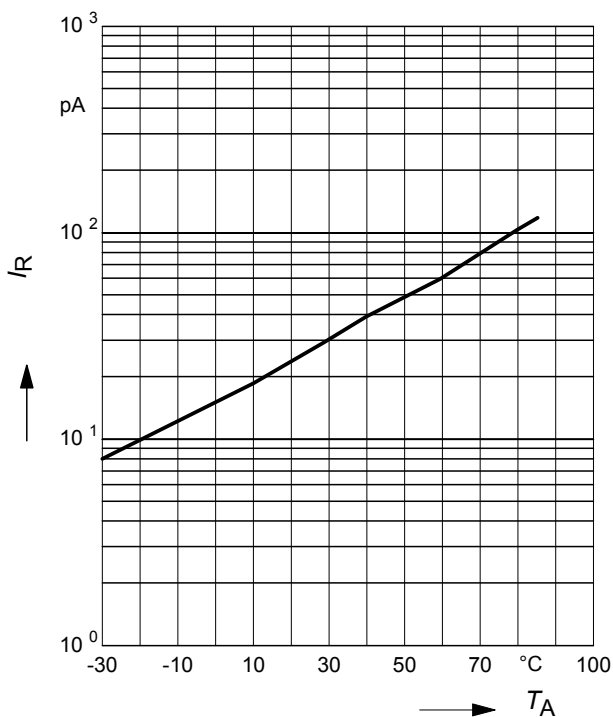
**Normalized diode capacitance**

$C_{(T_A)}/C_{(25^\circ\text{C})} = f(T_A); f = 1\text{MHz}$



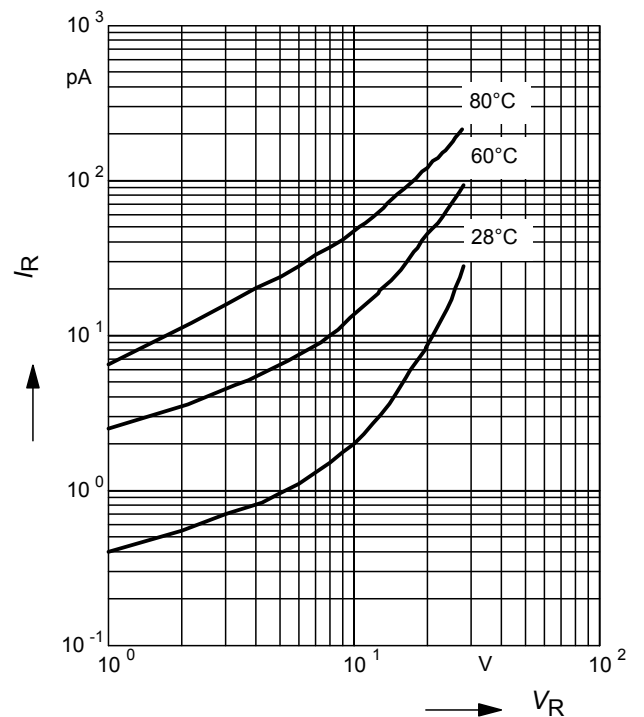
**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$

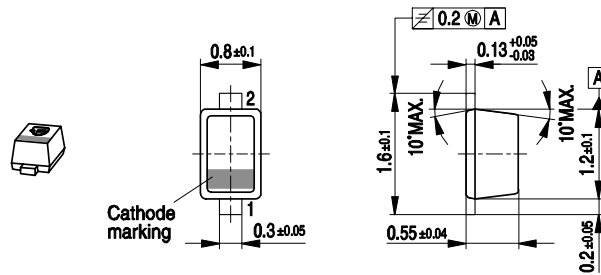


**Reverse current  $I_R = f(V_R)$**

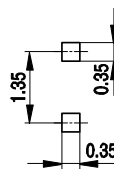
$T_A = \text{Parameter}$



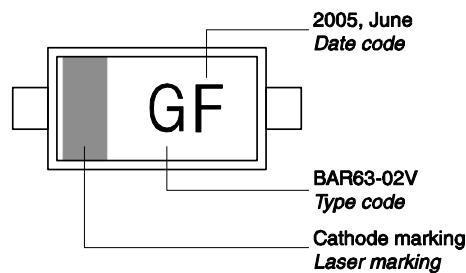
### Package Outline



### Foot Print

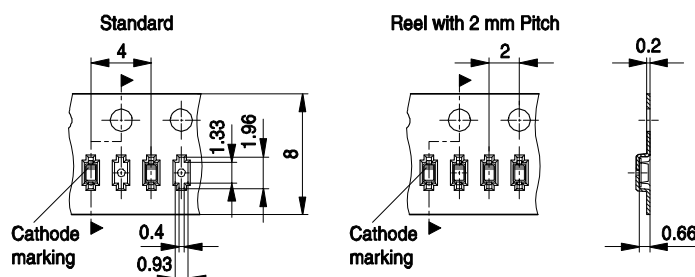


### Marking Layout (Example)

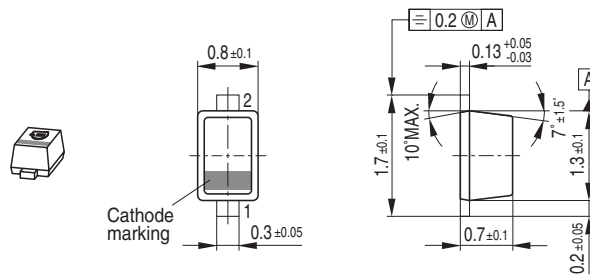


### Standard Packing

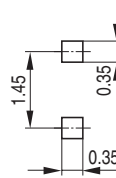
Reel ø180 mm = 3.000 Pieces/Reel  
 Reel ø180 mm = 8.000 Pieces/Reel (2 mm Pitch)  
 Reel ø330 mm = 10.000 Pieces/Reel



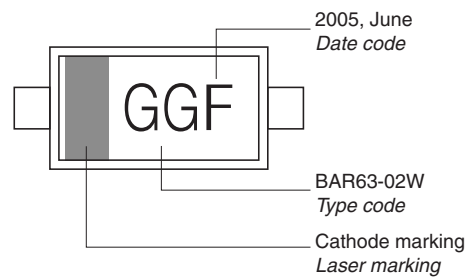
Package Outline



Foot Print

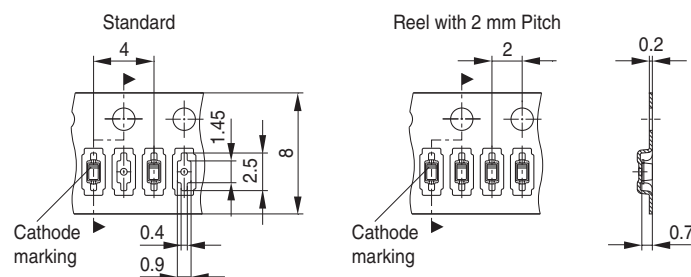


Marking Layout (Example)



Standard Packing

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

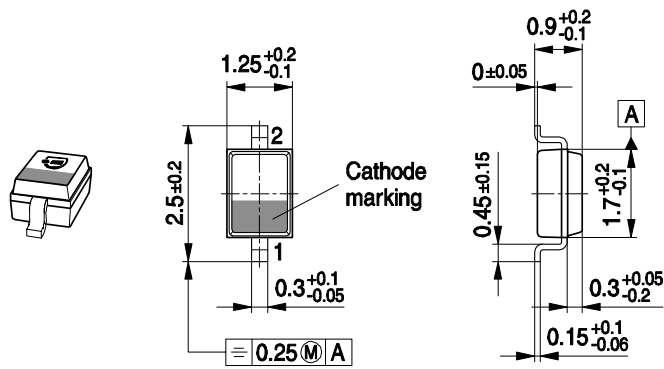


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

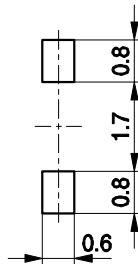
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q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

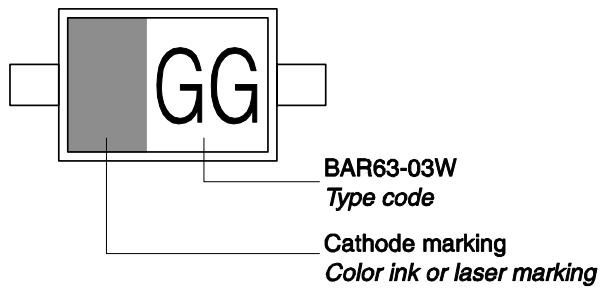
### Package Outline



### Foot Print

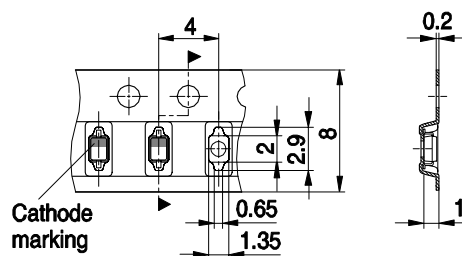


### Marking Layout (Example)



### Standard Packing

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



**Edition 2009-11-16**

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

**© 2009 Infineon Technologies AG  
All Rights Reserved.**

### **Legal Disclaimer**

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. 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 the 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 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.



# Mouser Electronics

Authorized Distributor

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

[Infineon:](#)

[BB 857 E7902](#) [BB 837 E6327](#) [BB 857 H7902](#) [BB857H7902XT](#)