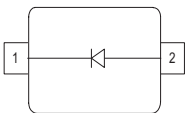
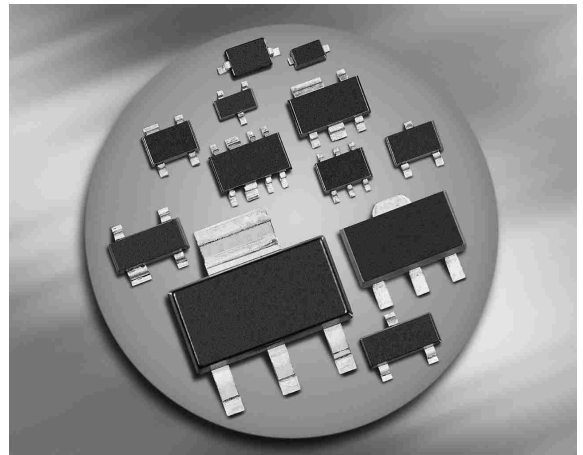


**Silicon Tuning Diode**

- 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  $T_A = 25\text{ }^\circ\text{C}$ , unless otherwise specified

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

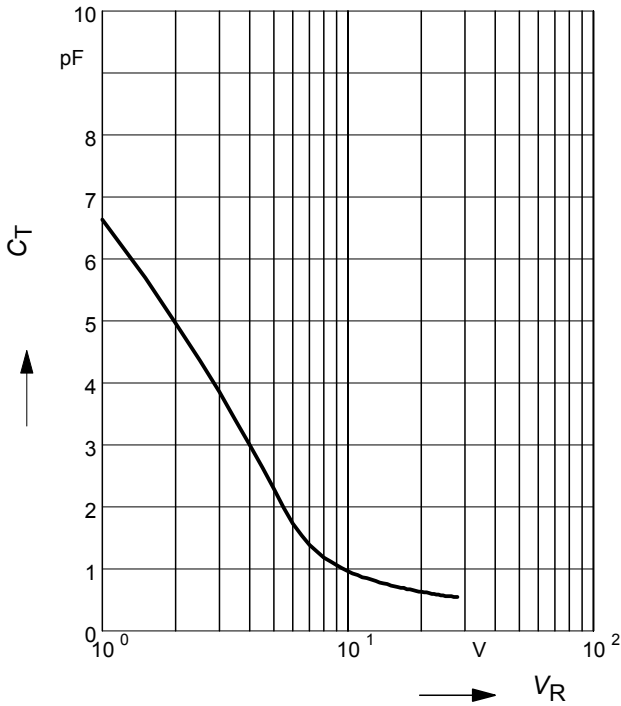
**Electrical Characteristics at  $T_A = 25\text{ °C}$ , unless otherwise specified**

| 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

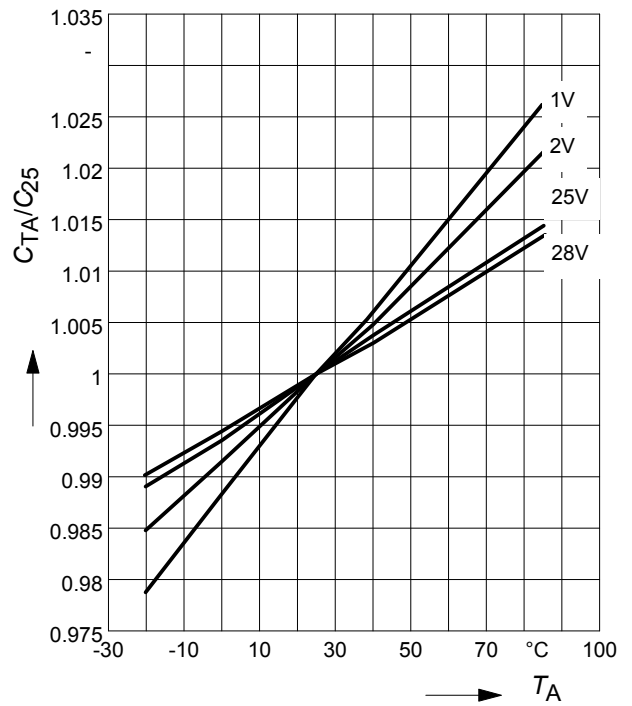
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



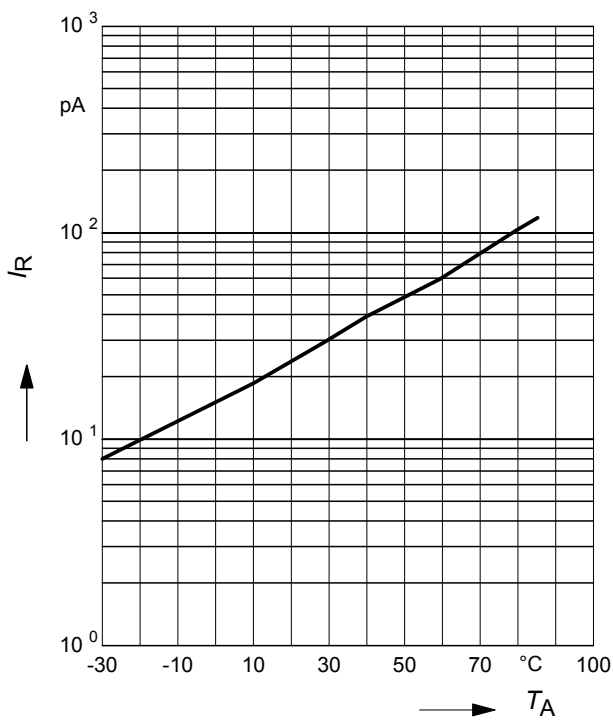
**Normalized diode capacitance**

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



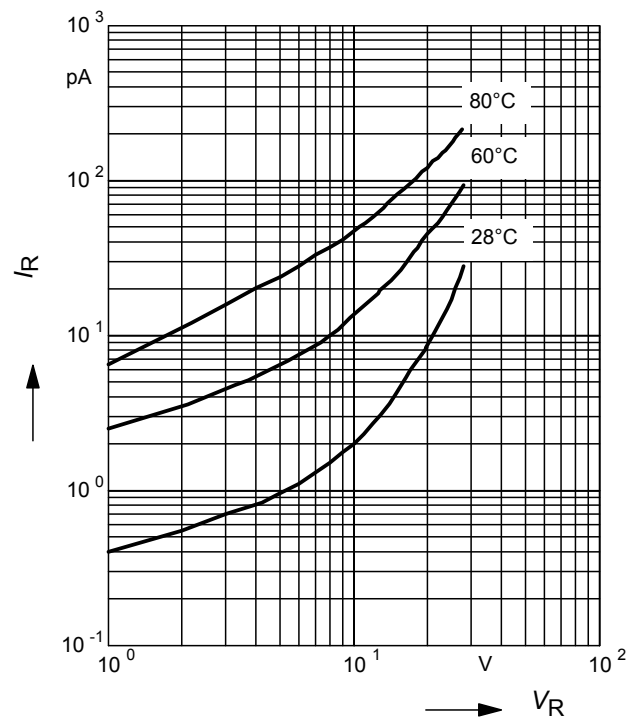
**Reverse current  $I_R = f(T_A)$**

$V_R = 28\text{V}$



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

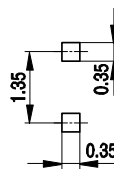
$T_A = \text{Parameter}$



### Package Outline



### Foot Print

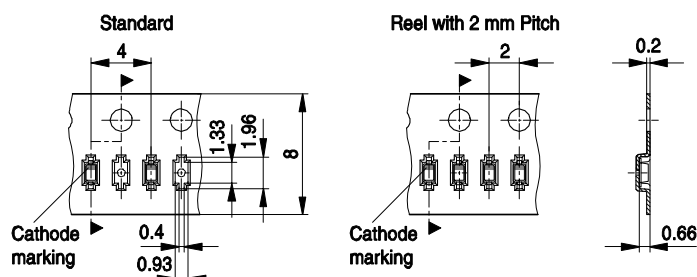


### Marking Layout (Example)

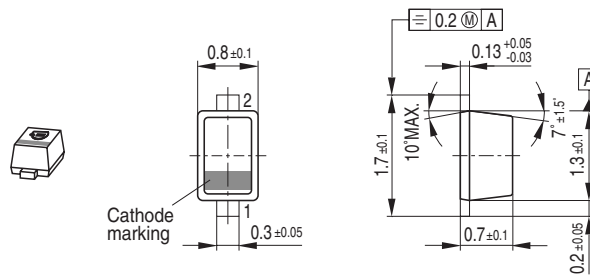


### Standard Packing

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

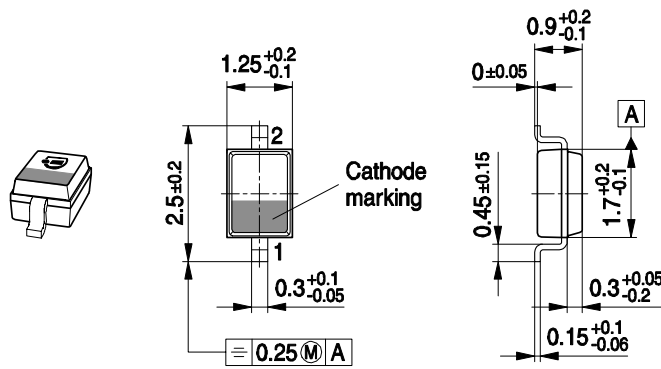


Date Code marking for discrete packages with one digit (SCD80, SC79, SC75<sup>1)</sup>) CES-Code

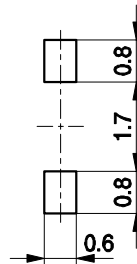
| Month | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 01    | a    | p    | A    | P    | a    | p    | A    | P    | a    | p    | A    | P    |
| 02    | b    | q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

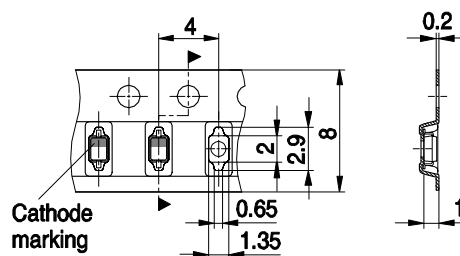


### Marking Layout (Example)



### Standard Packing

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



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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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