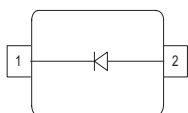


**Silicon Variable Capacitance Diodes**

- Frequency range up to 2 GHz
- Special design for use in TV-sat tuners
- Pb-free (RoHS compliant) package


**BB831**


| Type  | Package | Configuration | $L_S$ (nH) | Marking |
|-------|---------|---------------|------------|---------|
| BB831 | SOD323  | single        | 1.8        | white T |

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , 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 ... 125 | $^\circ\text{C}$ |
| Storage temperature                                  | $T_{stg}$ | -55 ... 150 |                  |

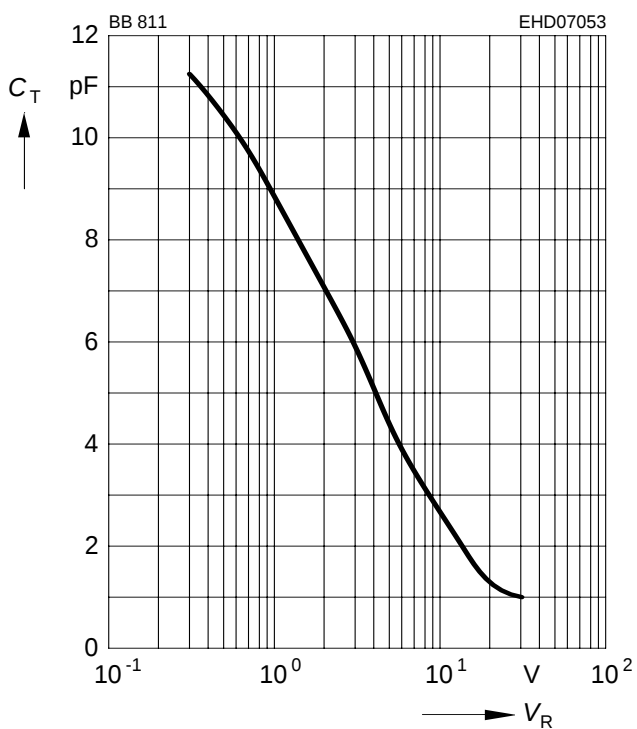
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter                                                                                          | Symbol           | Values      |             |               | Unit     |
|----------------------------------------------------------------------------------------------------|------------------|-------------|-------------|---------------|----------|
|                                                                                                    |                  | min.        | typ.        | max.          |          |
| DC Characteristics                                                                                 |                  |             |             |               |          |
| Reverse current<br>$V_R = 30\text{ V}$<br>$V_R = 30\text{ V}, T_A = 85\text{ }^{\circ}\text{C}$    | $I_R$            | -<br>-<br>- | -<br>-<br>- | 20<br><br>500 | nA       |
| AC Characteristics                                                                                 |                  |             |             |               |          |
| Diode capacitance<br>$V_R = 1\text{ V}, f = 1\text{ MHz}$<br>$V_R = 28\text{ V}, f = 1\text{ MHz}$ | $C_T$            | 7.8<br>0.85 | 8.8<br>1.02 | 9.8<br>1.2    | pF       |
| Capacitance ratio<br>$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$                       | $C_{T1}/C_{T28}$ | 7.8         | 8.6         | 9.5           |          |
| Capacitance matching <sup>1)</sup><br>$V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$      | $\Delta C_T/C_T$ | -           | -           | 3             | %        |
| Series resistance<br>$V_R = 1\text{ V}, f = 100\text{ MHz}$                                        | $r_S$            | -           | 1           | -             | $\Omega$ |

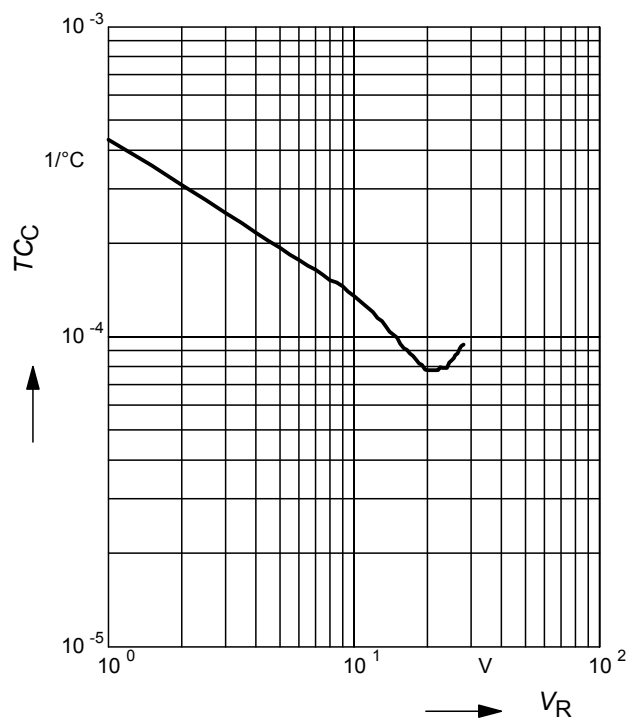
<sup>1</sup>For details please refer to Application Note 047.

Diode capacitance  $C_T = f(V_R)$

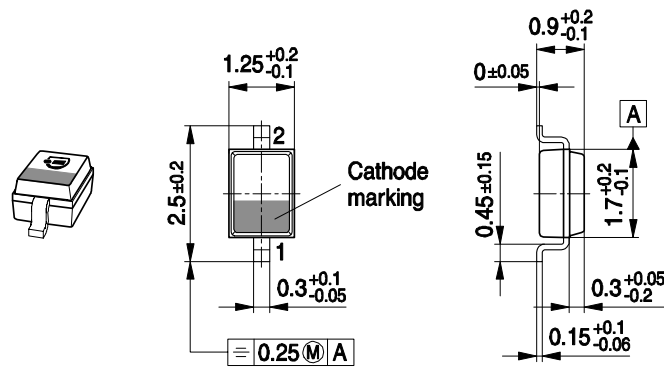
$f = 1\text{MHz}$



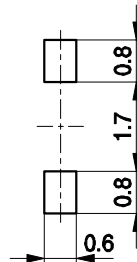
Temperature coefficient of the diode capacitance  $T_{CC} = f(V_R)$



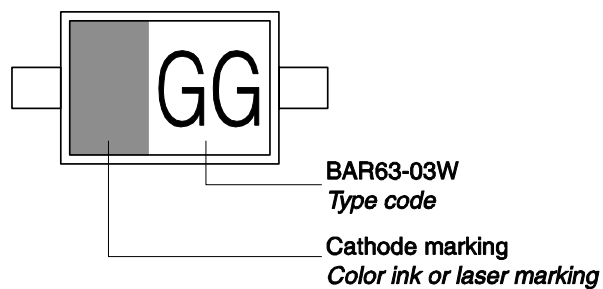
## Package Outline



## Foot Print

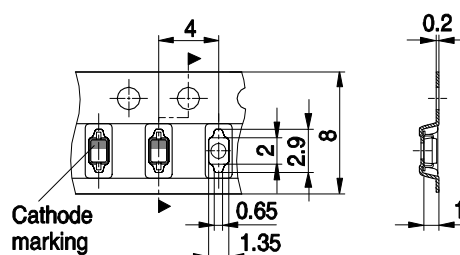


## Marking Layout (Example)



## Standard Packing

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



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