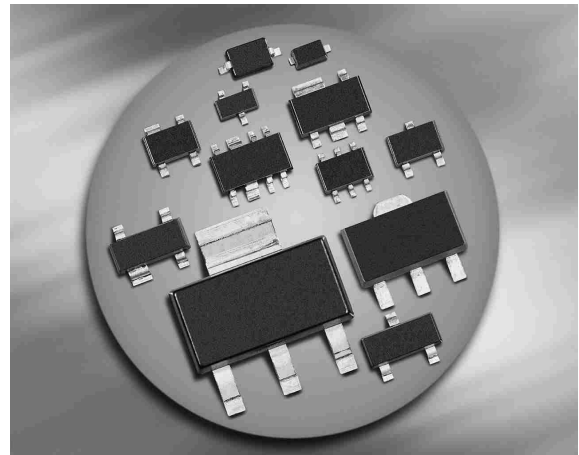
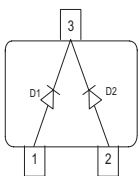


**Silicon Variable Capacitance Diode**

- For FM radio tuner with extended frequency band 77MHz to 108MHz
- Designed for application requiring back-to-back diode configuration for optimum signal distortion and detuning
- High tuning ratio at low supply voltage (car radio)
- Monolithic chip (common cathode) for perfect dual diode tracking
- Good C- V linearity
- High figure of merit
- Pb-free (RoHS compliant) package


**BB844**


| Type  | Package | Configuration  | $L_S$ (nH) | Marking |
|-------|---------|----------------|------------|---------|
| BB844 | SOT23   | common cathode | 1.8        | SNs     |

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

| Parameter                   | Symbol    | Value       | Unit             |
|-----------------------------|-----------|-------------|------------------|
| Diode reverse voltage       | $V_R$     | 18          | V                |
| Peak reverse voltage        | $V_{RM}$  | 20          |                  |
| Forward current             | $I_F$     | 50          | mA               |
| Operating temperature range | $T_{op}$  | -55 ... 150 | $^\circ\text{C}$ |
| Storage temperature         | $T_{stg}$ | -55 ... 150 |                  |

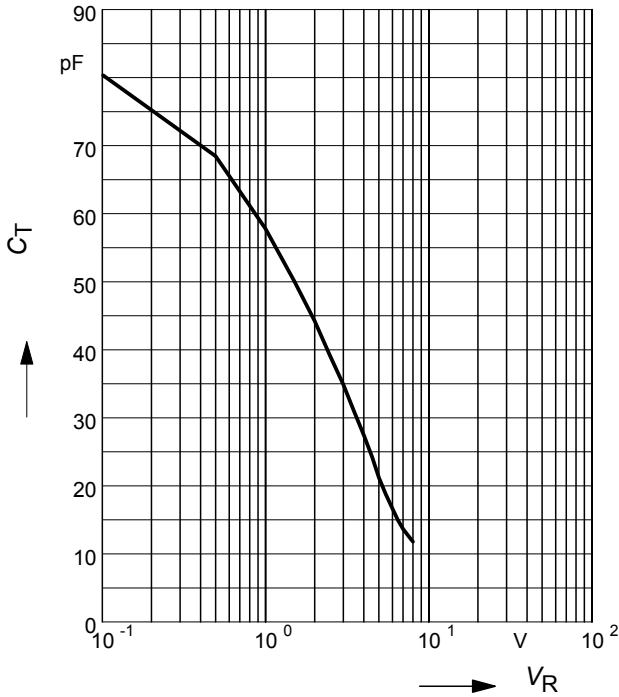
**Electrical Characteristics at  $T_A = 25^\circ\text{C}$ , unless otherwise specified**

| Parameter   | Symbol           | Values           |                     |                | Unit     |
|---|------------------|------------------|---------------------|----------------|----------|
|   |                  | min.             | typ.                | max.           |          |
| <b>DC Characteristics</b>   |                  |                  |                     |                |          |
| Reverse current<br>$V_R = 16\text{ V}$<br>$V_R = 16\text{ V}, T_A = 85^\circ\text{C}$   | $I_R$            | -<br>-           | -<br>-              | 20<br>200      | nA       |
| <b>AC Characteristics</b>   |                  |                  |                     |                |          |
| Diode capacitance<br>$V_R = 2\text{ V}, f = 1\text{ MHz}$<br>$V_R = 4\text{ V}, f = 1\text{ MHz}$<br>$V_R = 8\text{ V}, f = 1\text{ MHz}$ | $C_T$            | 42.5<br>25<br>10 | 43.75<br>27<br>11.5 | 45<br>29<br>13 | pF       |
| Capacitance ratio<br>$V_R = 2\text{ V}, V_R = 8\text{ V}, f = 1\text{ MHz}$   | $C_{T2}/C_{T8}$  | 3.2              | 3.8                 | -              |          |
| Capacitance matching <sup>1)</sup><br>$V_R = 2\text{ V to } 8\text{ V}, f = 1\text{ MHz}$   | $\Delta C_T/C_T$ | -                | -                   | 1.5            | %        |
| Series resistance<br>$V_R = 2\text{ V}, f = 100\text{ MHz}$   | $r_S$            | -                | 0.28                | -              | $\Omega$ |

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

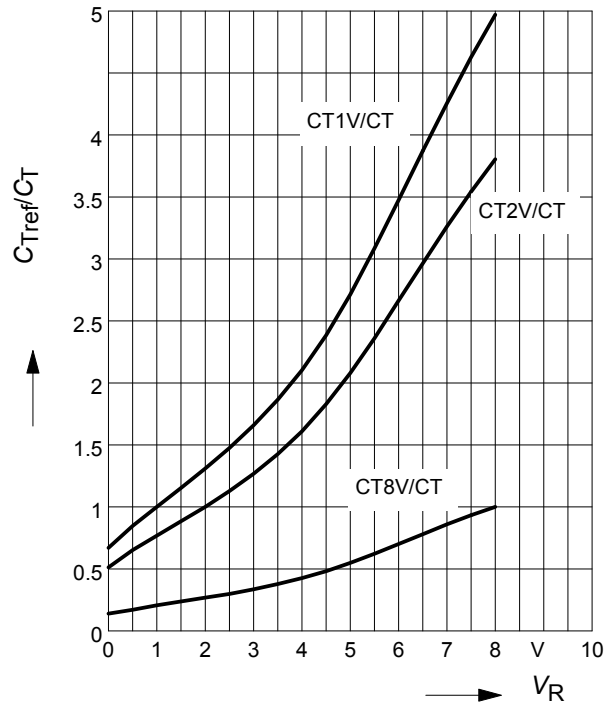
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$

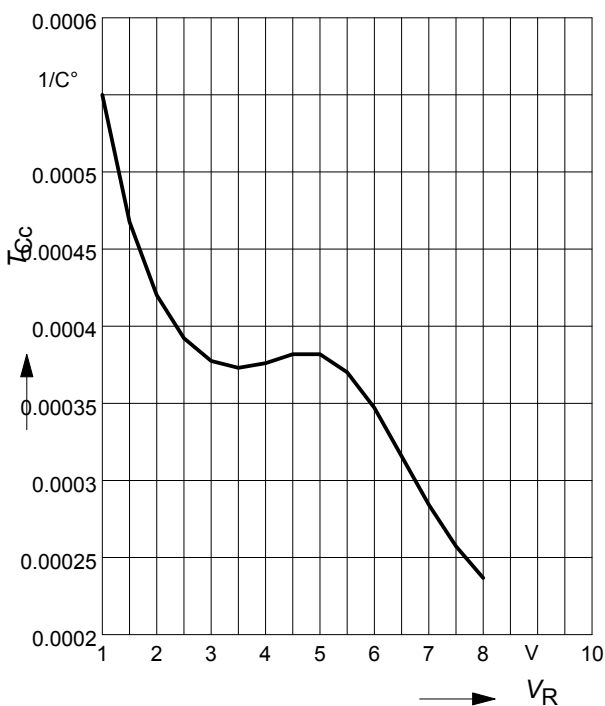


**Capacitance ratio  $C_{Tref}/C_T = f(V_R)$**

$f = 1\text{MHz}$



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



Package Outline



1) Lead width can be 0.6 max. in dambar area

Foot Print

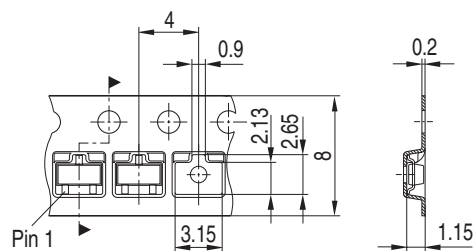


Marking Layout (Example)



Standard Packing

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



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