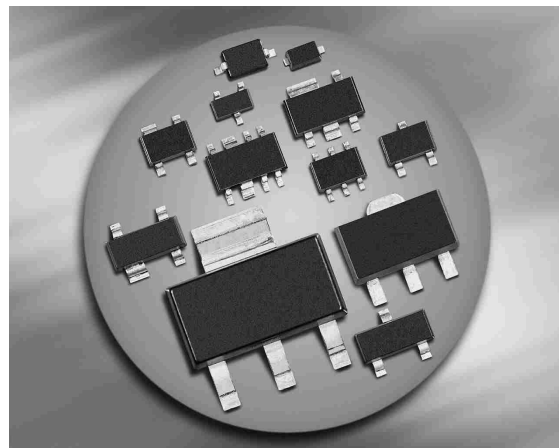
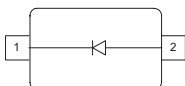


### Silicon Tuning Diode

- For SAT -indoor-units
- High capacitance ratio
- Low series resistance
- Excellent uniformity and matching due to "in-line" matching assembly procedure



**BB837**  
**BB857**



| Type  | Package | Configuration | $L_S$ (nH) | Marking |
|-------|---------|---------------|------------|---------|
| BB837 | SOD323  | single        | 1.8        | M       |
| BB857 | SCD80   | single        | 0.6        | OO      |

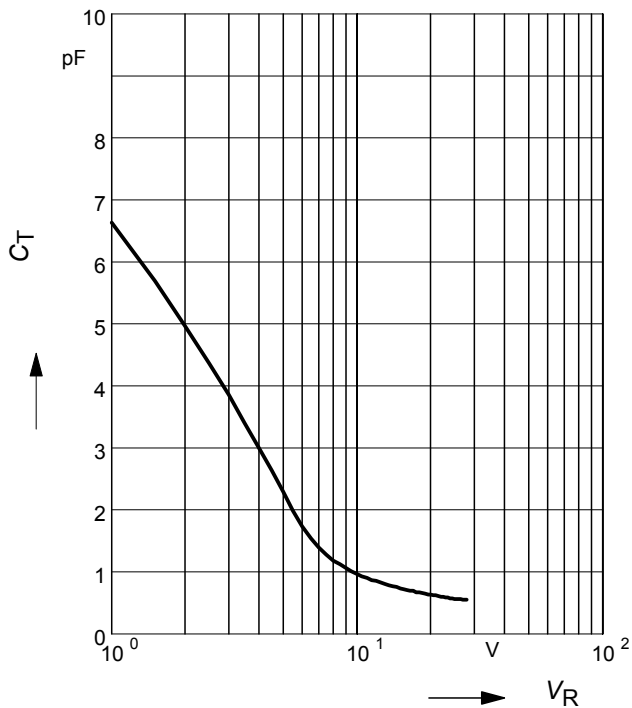
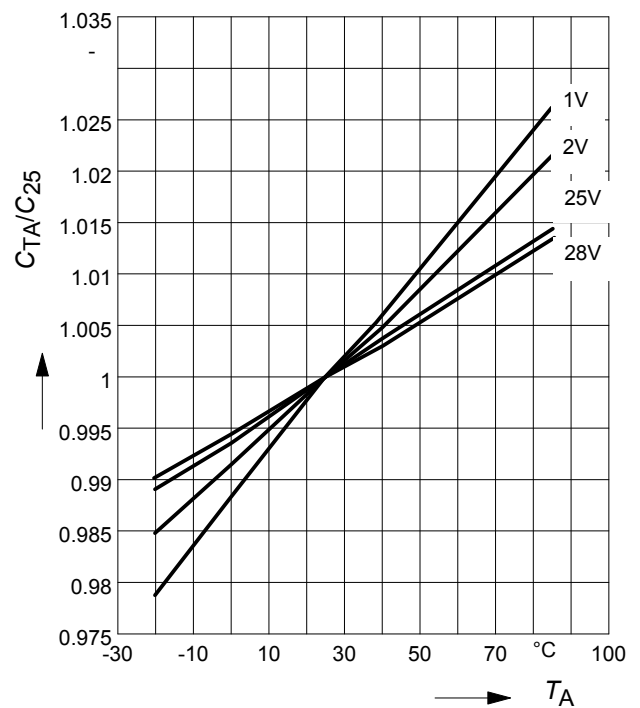
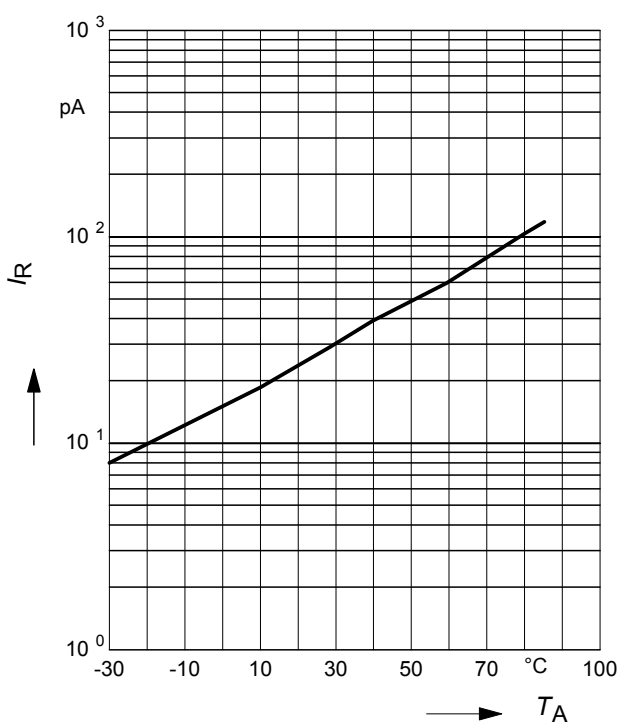
**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

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

<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  $I_R = f(V_R)$** 
 $T_A = \text{Parameter}$ 
