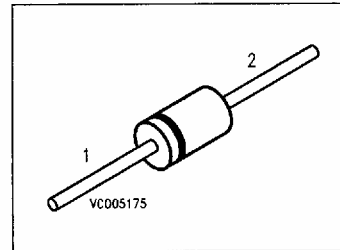


## Silicon Variable Capacitance Diodes

**BB 609 A**  
**BB 609 B**

- Especially for tuning of extended frequency bands in VHF and CATV tuners
- Not for new design



| Type     | Marking | Ordering Code | Pin Configuration | Package <sup>1)</sup> |
|----------|---------|---------------|-------------------|-----------------------|
| BB 609 A | white   | Q62702-B196   |                   | DO-35 DHD             |
| BB 609 B |         | Q62702-B197   |                   |                       |

### Maximum Ratings

| Parameter                                    | Symbol    | Values           | Unit             |
|----------------------------------------------|-----------|------------------|------------------|
| Peak reverse voltage                         | $V_{RM}$  | 30               | V                |
| Forward current, $T_A \leq 60^\circ\text{C}$ | $I_F$     | 20               | mA               |
| Operating temperature range                  | $T_{op}$  | $-55 \dots +100$ | $^\circ\text{C}$ |
| Storage temperature range                    | $T_{sig}$ | $-55 \dots +150$ |                  |

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

| Parameter                                                                                                                                           | Symbol                   | Values                     |                  |                    | Unit     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------|------------------|--------------------|----------|
|                                                                                                                                                     |                          | min.                       | typ.             | max.               |          |
| Reverse current<br>$V_R = 30\text{ V}$<br>$V_R = 30\text{ V}, T_A = 60\text{ }^{\circ}\text{C}$                                                     | $I_R$                    | —<br>—                     | —<br>—           | 20<br>200          | nA       |
| Diode capacitance, $f = 1\text{ MHz}$<br>BB 609 A: $V_R = 1\text{ V}$<br>$V_R = 28\text{ V}$<br>BB 609 B: $V_R = 1\text{ V}$<br>$V_R = 28\text{ V}$ | $C_T$                    | 32.5<br>2.5<br>33.5<br>2.8 | —<br>—<br>—<br>— | —<br>3<br>—<br>3.2 | pF       |
| Capacitance ratio<br>$V_R = 1\text{ V}, 28\text{ V}; f = 1\text{ MHz}$                                                                              | $\frac{C_{T1}}{C_{T28}}$ | 12                         | —                | 15                 | —        |
| Capacitance matching<br>$V_R = 1\text{ V} \dots 28\text{ V}, f = 1\text{ MHz}$                                                                      | $\frac{\Delta C_T}{C_T}$ | —                          | —                | 2.5                | %        |
| Series resistance<br>$C_T = 12\text{ pF}, f = 100\text{ MHz}$                                                                                       | $r_s$                    | —                          | 0.7              | 1                  | $\Omega$ |
| Series inductance                                                                                                                                   | $L_s$                    | —                          | 3                | —                  | nH       |

**Diode capacitance  $C_T = f(V_R)$**   
 $f = 1\text{ MHz}$

