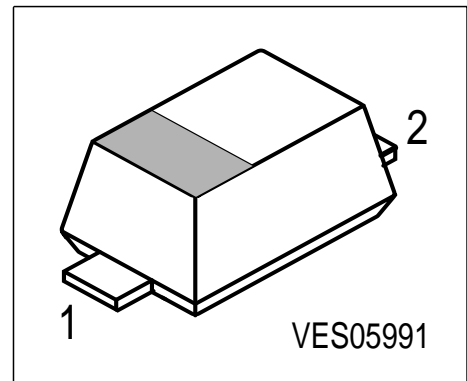


Silicon Variable Capacitance Diode

Preliminary data

- For VHF TV-tuners
- High capacitance ratio
- Low series inductance
- Low series resistance
- Extremely small plastic SMD package
- Excellent uniformity and matching due to "in-line" matching assembly procedure



| Type | Marking | Ordering Code | Pin Configuration | | Package |
|--------|---------|----------------------------------|-------------------|-----|---------|
| | | | 1=C | 2=A | |
| BB 664 | 4 | Q62702- B0909 (unmatched) | 1=C | 2=A | SCD-80 |
| BB 664 | 4 | Q62702- B0908 (in-lined matched) | | | |

Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-----------|----------------|------|
| Diode reverse voltage | V_R | 30 | V |
| Peak reverse voltage ($R \geq 5k\Omega$) | V_{RM} | 35 | |
| Forward current | I_F | 20 | mA |
| Operating temperature range | T_{op} | -55... ...+125 | °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 $V_R = 30\text{ V}$ | I_R | - | - | 10 | nA |
| Reverse current $V_R = 30\text{ V}, T_A = 85^\circ\text{C}$ | I_R | - | - | 100 | |
| AC characteristics | | | | | |
| Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 2\text{ V}, f = 1\text{ MHz}$ $V_R = 25\text{ V}, f = 1\text{ MHz}$ $V_R = 28\text{ V}, f = 1\text{ MHz}$ | C_T | 39 29.4 2.5 2.4 | 41.8 31.85 2.7 2.55 | 44.5 34.2 2.85 2.75 | pF |
| Capacitance ratio $V_R = 2\text{ V}, V_R = 25\text{ V}, f = 1\text{ MHz}$ | C_{T2}/C_{T25} | 11 | 11.8 | 12.5 | - |
| Capacitance ratio $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$ | C_{T1}/C_{T28} | 15.2 | 16.4 | 17.5 | - |
| Capacitance ratio ¹⁾ $V_R = 1\text{ V}, V_R = 28\text{ V}, f = 1\text{ MHz}$ | $\Delta C_T/C_T$ | - | - | 2 | % |
| Series resistance $V_R = 5\text{ V}, f = 470\text{ MHz}$ | r_s | - | 0.6 | 0.75 | Ω |
| Series inductance | L_s | - | 0.6 | - | nH |

1) In-line matching. For details please refer to Application Note 047

Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$

