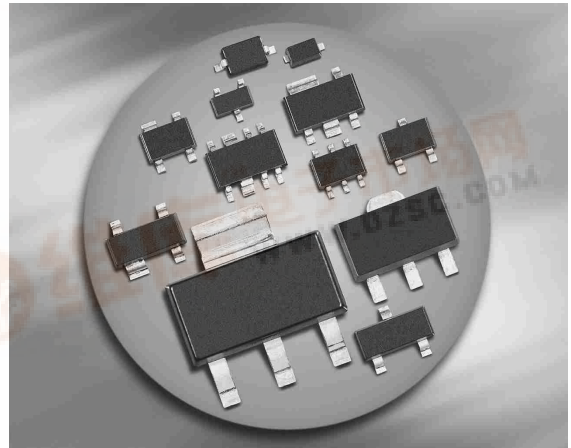




BBY53...

Silicon Tuning Diode

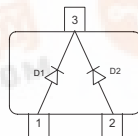
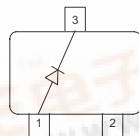
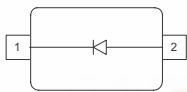
- High Q hyperabrupt tuning diode
- Designed for low tuning voltage operation for VCO's in mobile communications equipment
- High ratio at low reverse voltage



BBY53-02L
BBY53-02V
BBY53-02W
BBY53-03W

BBY53-03L

BBY53
BBY53-05W



| Type | Package | Configuration | L_S (nH) | Marking |
|------------|----------|------------------|------------|---------|
| BBY53 | SOT23 | common cathode | 2 | S7s |
| BBY53-02L* | TSLP-2-1 | single, leadless | 0.4 | LL |
| BBY53-02V | SC79 | single | 0.6 | L |
| BBY53-02W | SCD80 | single | 0.6 | LL |
| BBY53-03L* | TSLP-3-1 | single, leadless | 0.4 | LL |
| BBY53-03W | SOD323 | single | 1.8 | white/5 |
| BBY53-05W | SOT323 | common cathode | 1.4 | S7s |

* Preliminary

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

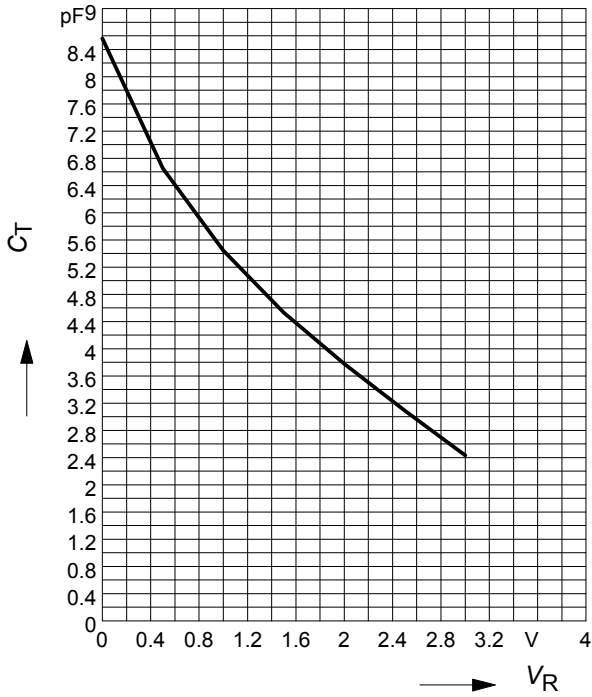
| Parameter | Symbol | Value | Unit |
|-----------------------------|-----------|-------------|------|
| Diode reverse voltage | V_R | 6 | V |
| Forward current | I_F | 20 | mA |
| Operating temperature range | T_{op} | -55 ... 125 | °C |
| Storage temperature | T_{stg} | -55 ... 150 | |

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

| Parameter | Symbol | Values | | | Unit |
|---|-----------------|-------------|------------|------------|----------|
| | | min. | typ. | max. | |
| DC Characteristics | | | | | |
| Reverse current $V_R = 4\text{ V}$ $V_R = 4\text{ V}, T_A = 85^\circ\text{C}$ | I_R | - - | - - | 10 200 | nA |
| AC Characteristics | | | | | |
| Diode capacitance $V_R = 1\text{ V}, f = 1\text{ MHz}$ $V_R = 3\text{ V}, f = 1\text{ MHz}$ | C_T | 4.8 1.85 | 5.3 2.4 | 5.8 3.1 | pF |
| Capacitance ratio $V_R = 1\text{ V}, V_R = 3\text{ V}, f = 1\text{ MHz}$ | C_{T1}/C_{T3} | 1.8 | 2.2 | 2.6 | |
| Series resistance $V_R = 1\text{ V}, f = 1\text{ GHz}$ | r_S | - | 0.47 | - | Ω |

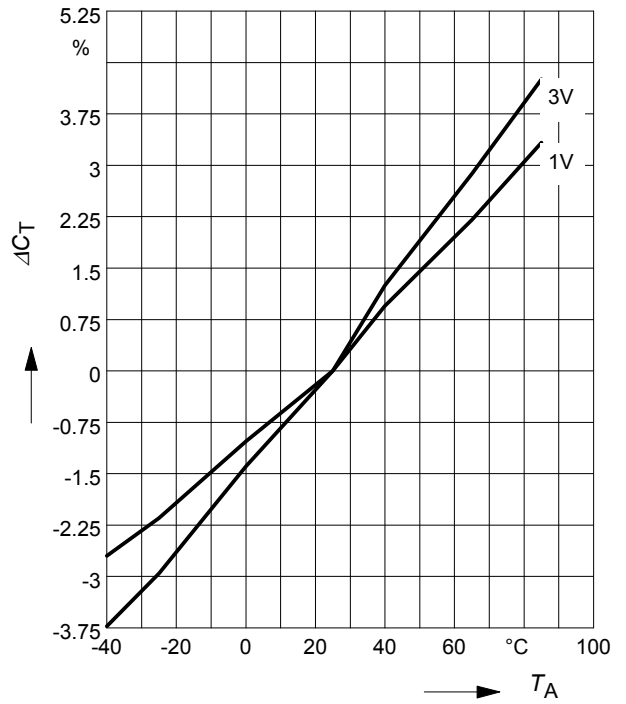
Diode capacitance $C_T = f(V_R)$

$f = 1\text{MHz}$



Capacitance change $\Delta C = f(T_A)$

$f = 1\text{MHz}$



Temperature coefficient of the diode capacitance $TC_C = f(V_R)$

$f = 1\text{MHz}$

