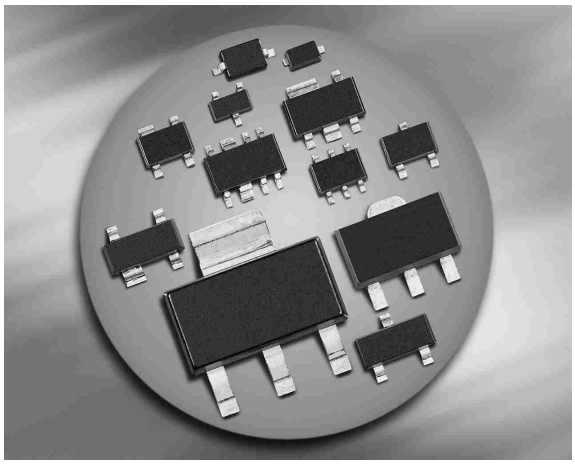
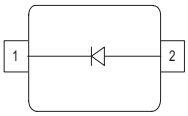
**Silicon Variable Capacitance Diode**

- For VHF TV / VTR tuners
- Pb-free (RoHS compliant) package



**BB640**




| Type | Package | Configuration | $L_S$(nH) | Marking |
|---|---|---|---|---|
| BB640 | SOD323 | single | 1.8 | red S |

**Maximum Ratings** at $T_A$ = 25°C, unless otherwise specified

| 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 ... 150 | °C |
| Storage temperature | $T_{stg}$ | -55 ... 150 | |

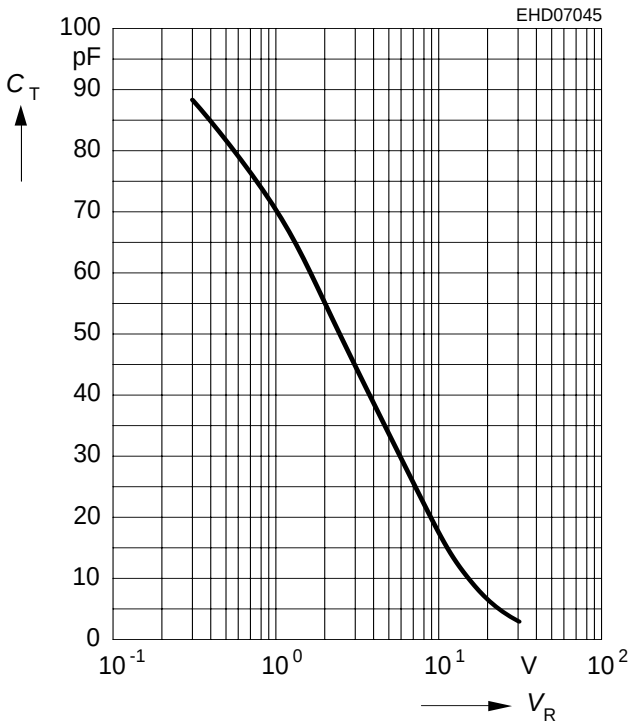
**Electrical Characteristics** at $T_A$ = 25°C, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|---|---|---|---|---|---|
| | | min. | typ. | max. | |
| **DC Characteristics** | | | | | |
| Reverse current | $I_R$ | | | | nA |
| $V_R$ = 30 V | | - | - | 10 | |
| $V_R$ = 30 V, $T_A$ = 85 °C | | - | - | 200 | |
| **AC Characteristics** | | | | | |
| Diode capacitance | $C_T$ | | | | pF |
| $V_R$ = 1 V, $f$ = 1 MHz | | 62 | 69 | 76 | |
| $V_R$ = 2 V, $f$ = 1 MHz | | 47.5 | 54.5 | 61.5 | |
| $V_R$ = 25 V, $f$ = 1 MHz | | 2.85 | 3.28 | 3.7 | |
| $V_R$ = 28 V, $f$ = 1 MHz | | 2.8 | 3.05 | 3.3 | |
| Capacitance ratio<br>$V_R$ = 1 V, $V_R$ = 28 V, $f$ = 1 MHz | $C_{T1}/C_{T28}$ | 19.5 | - | 25 | |
| Capacitance ratio<br>$V_R$ = 2 V, $V_R$ = 25 V, $f$ = 1 MHz | $C_{T2}/C_{T25}$ | 15 | 16.6 | - | |
| Capacitance matching[1)]<br>$V_R$ = 1 V, $V_R$ = 28 V, $f$ = 1 MHz | $\Delta C_T/C_T$ | - | - | 2.5 | % |
| Series resistance<br>$C_T$ = 12 pF, $f$ = 100 MHz | $r_S$ | - | 1.15 | - | Ω |

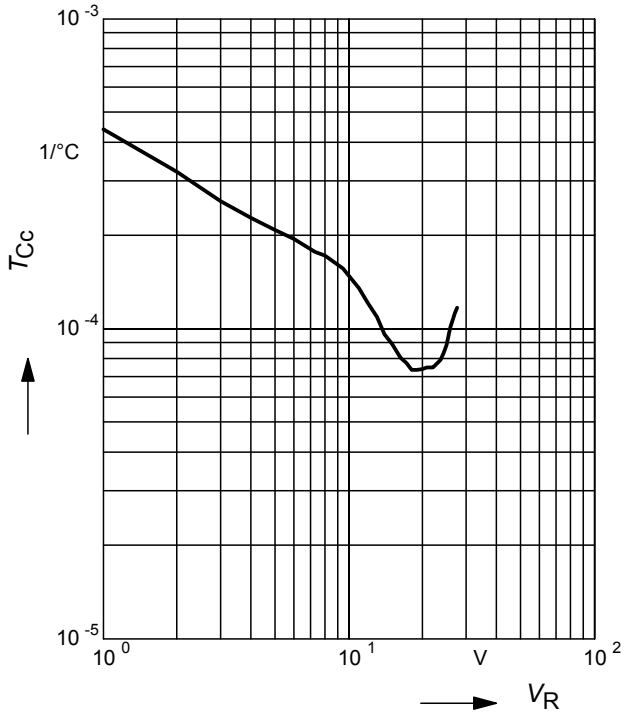
[1]For details please refer to Application Note 047.

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

$f$ = 1MHz

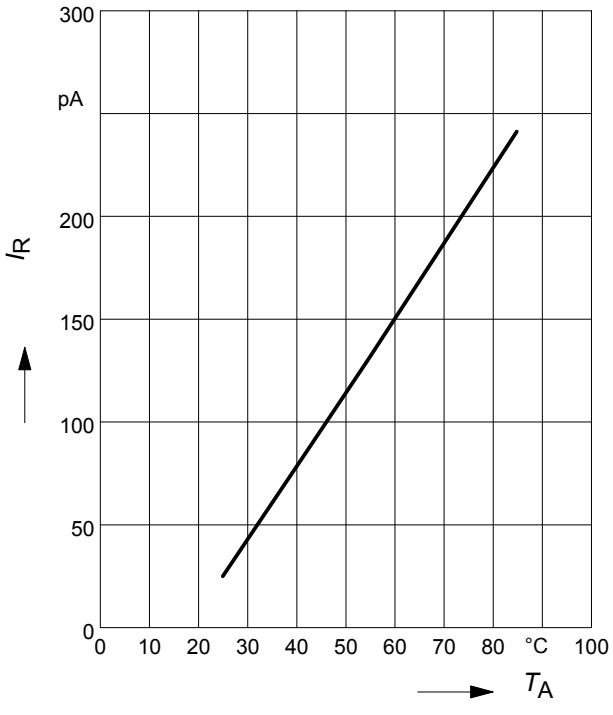



**Temperature coefficient of the diode capacitance $T_{Cc} = f(V_R)$**



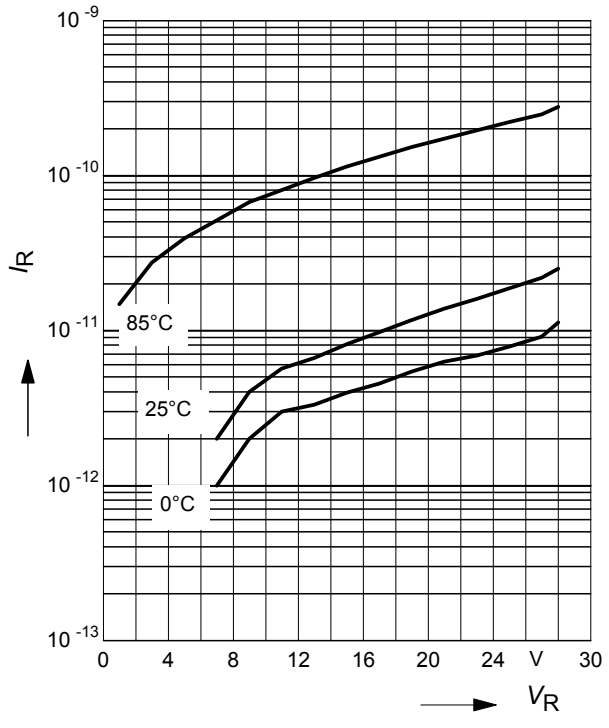

**Reverse current $I_R = f(T_A)$**

$V_R$ = 28V

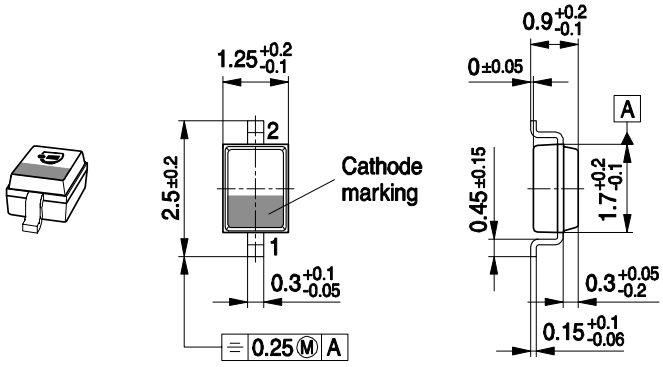



**Reverse current $I_R = f(V_R)$**

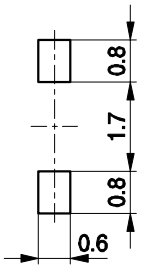
$T_A$ = Parameter



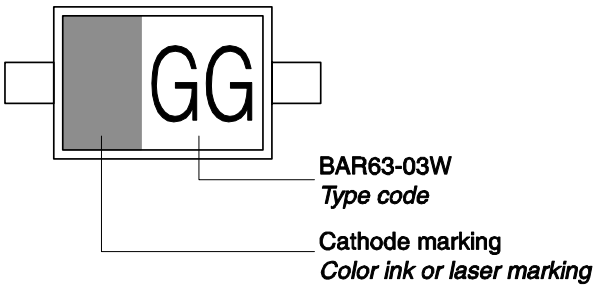
## Package Outline




## Foot Print

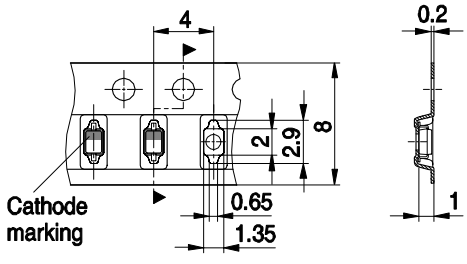



## Marking Layout (Example)




## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel
Reel ø330 mm = 10.000 Pieces/Reel



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