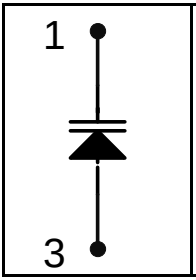
# SOT23 SILICON VARIABLE CAPACITANCE DIODES

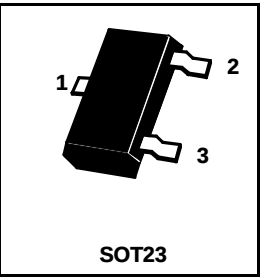
**ISSUE 5 – JANUARY 1998**

**ZC830/A/B to ZC836/A/B**

FEATURES

* Close Tolerance C-V Characteristics
* High Tuning Ratio
* Low $I_R$
  Enabling Excellent Phase Noise Performance
  ($I_R$ Typically <200pA at 25V)




SOT23

## ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | MAX | UNIT |
|---|---|---|---|
| Forward Current | $I_F$ | 200 | mA |
| Power Dissipation at $T_{amb}$=25°C | $P_{tot}$ | 330 | mW |
| Operating and Storage Temperature Range | $T_j$:$T_{stg}$ | -55 to +150 | °C |

## ELECTRICAL CHARACTERISTICS (at $T_{amb}$=25°C)

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT | CONDITIONS |
|---|---|---|---|---|---|---|
| Reverse Breakdown Voltage | $V_{BR}$ | 25 | | | V | $I_R$=10μA |
| Reverse Voltage Leakage | $I_R$ | | 0.2 | 10 | nA | $V_R$=20V |
| Temperature Coefficient of Capacitance | η | | 0.03 | 0.04 | %/°C | $V_R$=3V, f=1MHz |

## TUNING CHARACTERISTICS (at $T_{amb}$=25°C)

| PART NO | Nominal Capacitance (pF) $V_R$=2V, f=1MHz | | | Minimum Q @ $V_R$=3V f=50MHz | Capacitance Ratio $C_2$ / $C_{20}$ at f=1MHz | |
|---|---|---|---|---|---|---|
| | MIN | NOM | MAX | | MIN | MAX |
| ZC830A | 9.0 | 10.0 | 11.0 | 300 | 4.5 | 6.0 |
| ZC831A | 13.5 | 15.0 | 16.5 | 300 | 4.5 | 6.0 |
| ZC832A | 19.8 | 22.0 | 24.2 | 200 | 5.0 | 6.5 |
| ZC833A | 29.7 | 33.0 | 36.3 | 200 | 5.0 | 6.5 |
| ZC834A | 42.3 | 47.0 | 51.7 | 200 | 5.0 | 6.5 |
| ZC835A | 61.2 | 68.0 | 74.8 | 100 | 5.0 | 6.5 |
| ZC836A | 90.0 | 100.0 | 110.0 | 100 | 5.0 | 6.5 |

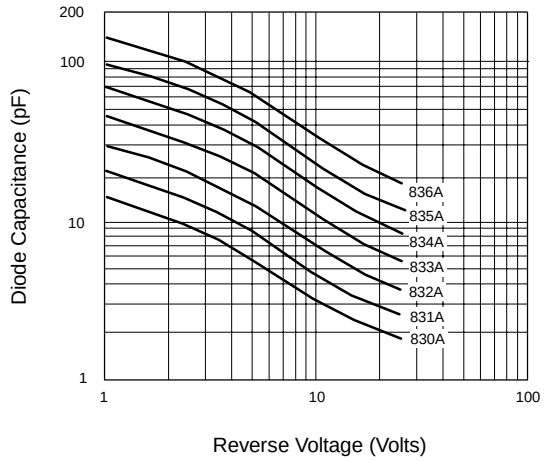
**Note:**

No suffix ±20% (e.g. ZC830), suffix B ± 5% (e.g. ZC830B)
Spice parameter data is available upon request for this device

**ZC830/A/B to ZC836/A/B**

## PARTMARKING DETAILS

| PART NO | PARTMARK | PART NO | PARTMARK | PART NO | PARTMARK |
|---|---|---|---|---|---|
| ZC830 | J1S | ZC830A | J1A | ZC830B | J1B |
| ZC831 | J3S | ZC831A | J3A | ZC831B | J3B |
| ZC832 | J4S | ZC832A | J4A | ZC832B | J4B |
| ZC833 | J2S | ZC833A | J2A | ZC833B | J2B |
| ZC834 | J5S | ZC834A | J5A | ZC834B | J5B |
| ZC835 | J6S | ZC835A | J6A | ZC835B | J6B |
| ZC836 | J7S | ZC836A | J7A | ZC836B | J7B |




**Diode Capacitance**