

Advance Information

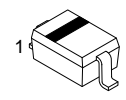
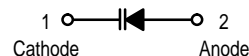
Voltage Variable Capacitance Diode for UHF Band Radio

This device is designed for UHF tuning and general frequency control and tuning. This device is supplied in the SOD-323 plastic surface mount package for high volume, pick and place assembly requirements, and is a member of the Motorola microExecutive series.

- High Figure of Merit — Q
- Guaranteed Capacitance Range
- Controlled and Uniform Tuning Ratio
- 0805 Footprint Compatible SOD-323 package
- Available in tape and reel

MMVL229AT1

**15 VOLT
VOLTAGE VARIABLE
CAPACITANCE DIODE**



**CASE 477-02, STYLE 1
SOD-323**

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Rating | Symbol | Value | Unit |
|---------------------------|------------------|-------------|------------------|
| Reverse Voltage | V_R | 15 | Vdc |
| Junction Temperature | T_J | 125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|--------------|-----|------|-----|----------|
| Reverse Voltage ($I_R = 1.0 \mu\text{A}_{\text{dc}}$) | V_R | 15 | — | — | Vdc |
| Reverse Current ($V_R = 15 \text{ Vdc}$) | I_R | — | — | 3.0 | nAdc |
| Capacitance ($V_R = 2 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_{2V} | 14 | 15 | 16 | pF |
| Capacitance ($V_R = 4 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_{4V} | — | 11 | — | pF |
| Capacitance ($V_R = 10 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_{10V} | 5.5 | 6.0 | 6.5 | pF |
| Capacitance Ratio | $C_{2V/10V}$ | 2.0 | 2.5 | 3.0 | |
| Series Resistance ($V_R = 5.0 \text{ V}$, $f = 470 \text{ MHz}$) | r_s | — | 0.27 | 0.4 | Ω |

Replaces MMVL229A

TYPICAL DEVICE CHARACTERISTICS

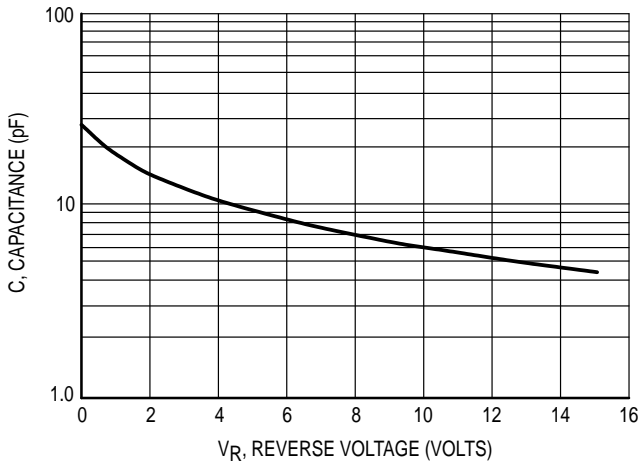


Figure 1. Capacitance versus Reverse Voltage

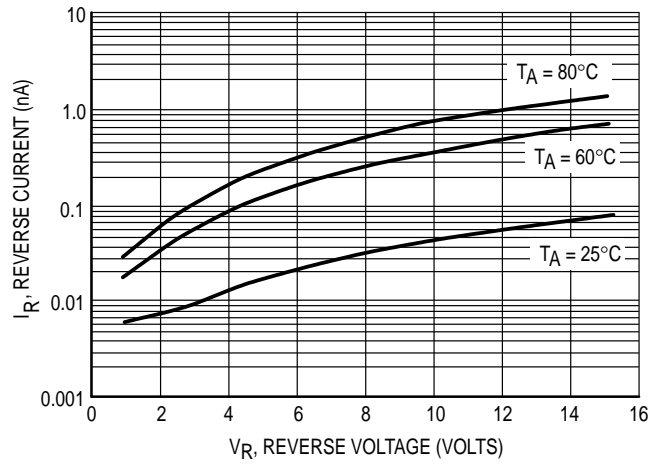


Figure 2. Reverse Current versus Reverse Voltage

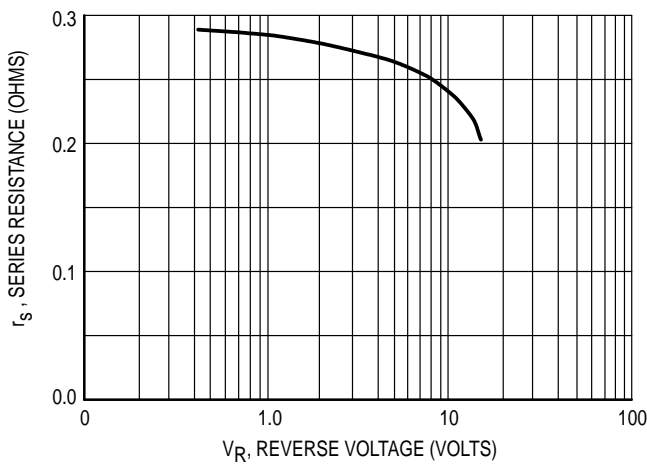


Figure 3. Series Resistance versus Reverse Voltage

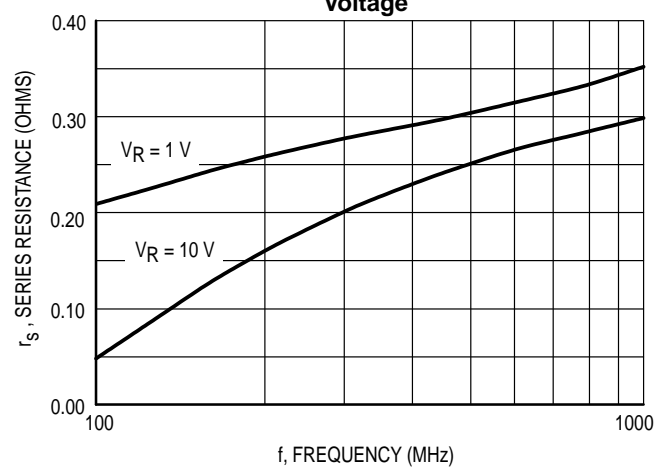


Figure 4. Series Resistance versus Frequency

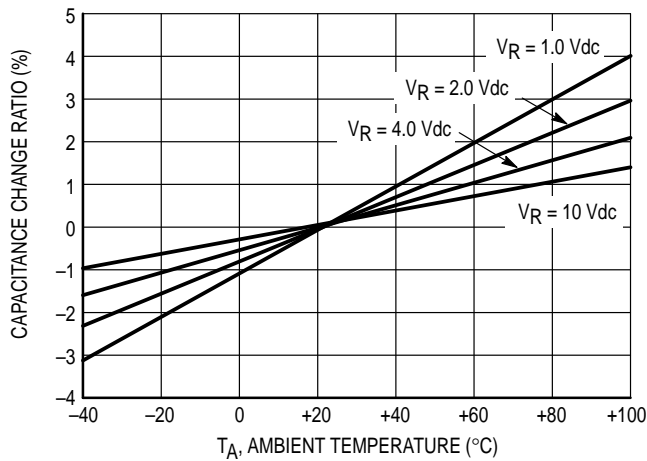


Figure 5. Capacitance Change Ratio versus Ambient Temperature

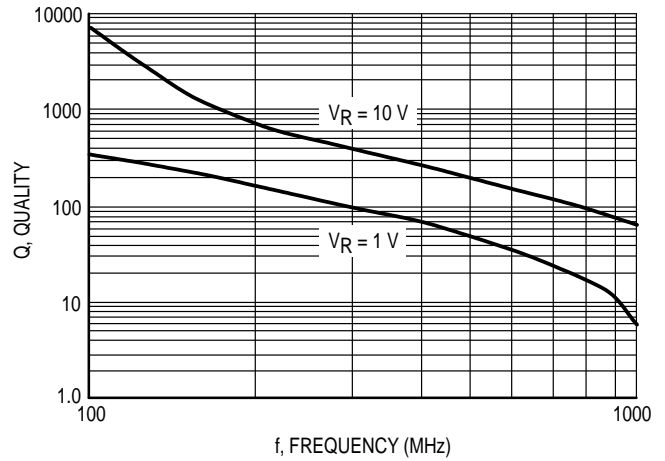
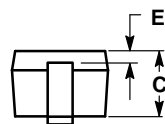
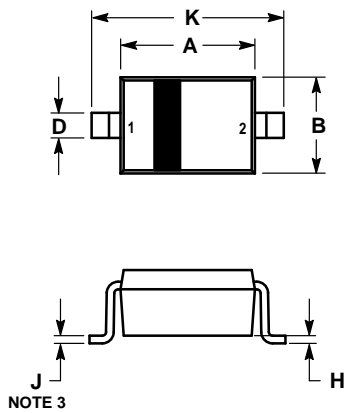


Figure 6. Quality versus Frequency

PACKAGE DIMENSIONS



NOTES:


1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

| DIM | MILLIMETERS | | INCHES | |
|-----|-------------|-------|-----------|--------|
| | MIN | MAX | MIN | MAX |
| A | 1.60 | 1.80 | 0.063 | 0.071 |
| B | 1.15 | 1.35 | 0.045 | 0.053 |
| C | 0.80 | 1.00 | 0.031 | 0.039 |
| D | 0.25 | 0.40 | 0.010 | 0.016 |
| E | 0.15 REF | | 0.006 REF | |
| H | 0.00 | 0.10 | 0.000 | 0.004 |
| J | 0.089 | 0.177 | 0.0035 | 0.0070 |
| K | 2.30 | 2.70 | 0.091 | 0.106 |

STYLE 1:

- PIN 1. CATHODE
- PIN 2. ANODE

CASE 477-02
SOD-323
ISSUE A

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