

## Advance Information

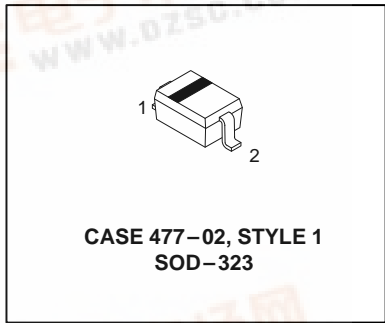
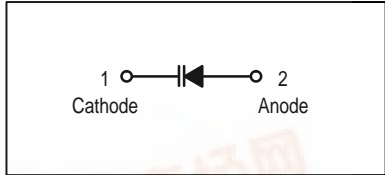
# Voltage Variable Capacitance Diode for UHF Band Radio

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

**MMVL535T1**

**15 VOLT  
 VOLTAGE VARIABLE  
 CAPACITANCE DIODE**



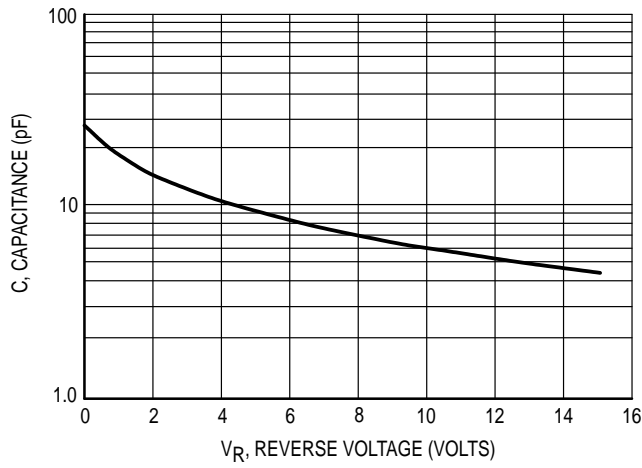
### MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

| Rating                    | Symbol           | Value       | Unit |
|---------------------------|------------------|-------------|------|
| Forward Current           | I <sub>F</sub>   | 20          | mAdc |
| Reverse Voltage           | V <sub>R</sub>   | 15          | Vdc  |
| Junction Temperature      | T <sub>J</sub>   | 125         | °C   |
| Storage Temperature Range | T <sub>stg</sub> | -55 to +125 | °C   |

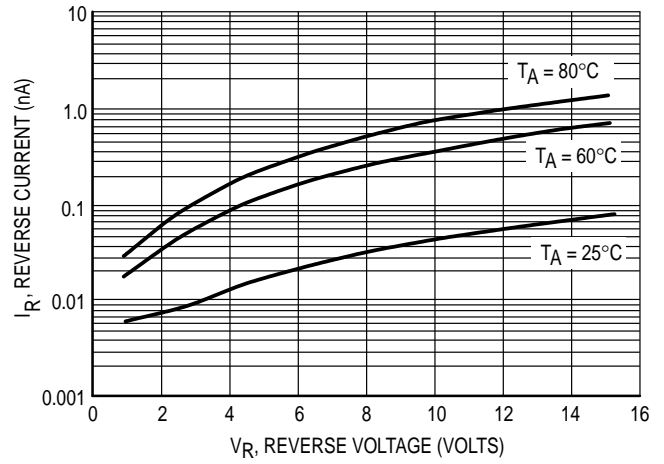
### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

| Characteristic   | Symbol              | Min  | Typ  | Max  | Unit |
|--|---------------------|------|------|------|------|
| Reverse Voltage<br>(I <sub>R</sub> = 1.0 μAdc)             | V <sub>R</sub>      | 15   | —    | —    | Vdc  |
| Reverse Current<br>(V <sub>R</sub> = 15 Vdc)               | I <sub>R</sub>      | —    | —    | 8.0  | nAdc |
| Capacitance<br>(V <sub>R</sub> = 1 V, f = 1.0 MHz)         | C <sub>1V</sub>     | 17.5 | 18.7 | 20   | pF   |
| Capacitance<br>(V <sub>R</sub> = 4 V, f = 1.0 MHz)         | C <sub>4V</sub>     | 9.0  | 10.5 | 12.0 | pF   |
| Capacitance<br>(V <sub>R</sub> = 10 V, f = 1.0 MHz)        | C <sub>10V</sub>    | 5.4  | 6.0  | 6.6  | pF   |
| Capacitance Ratio  | C <sub>1V/10V</sub> | 2.6  | 3.1  | 3.7  |      |
| Series Resistance<br>(V <sub>R</sub> = 5.0 V, f = 470 MHz) | r <sub>s</sub>      | —    | 0.27 | 0.5  | Ω    |

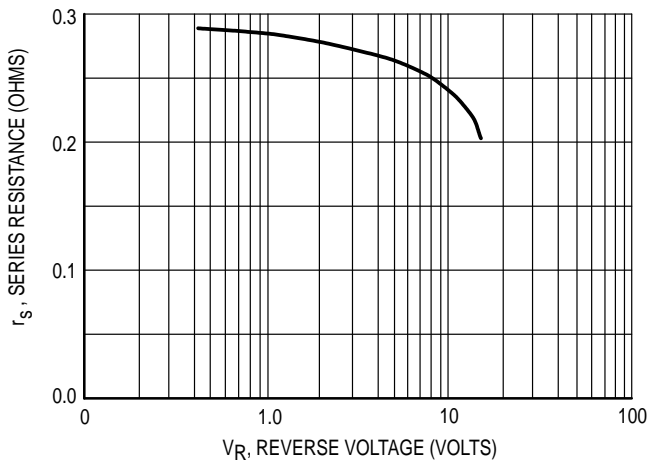
**TYPICAL DEVICE CHARACTERISTICS**



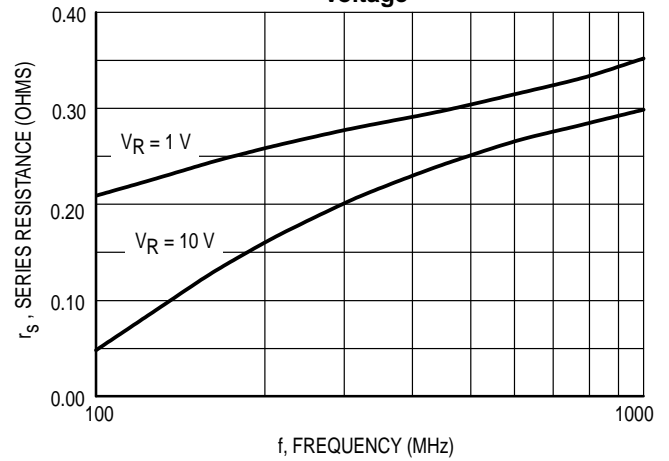
**Figure 1. Capacitance versus Reverse Voltage**



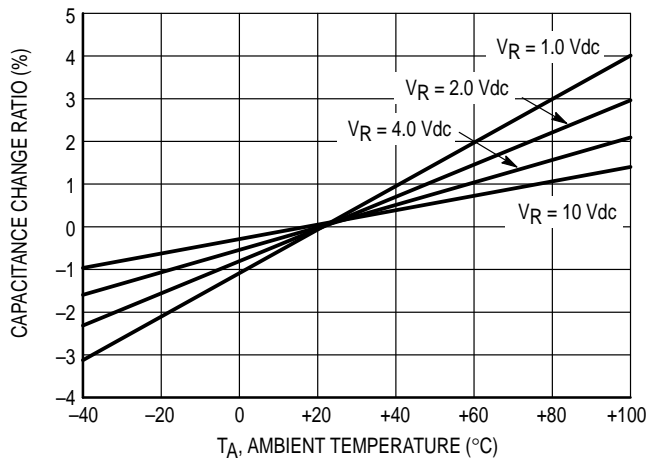
**Figure 2. Reverse Current versus Reverse Voltage**



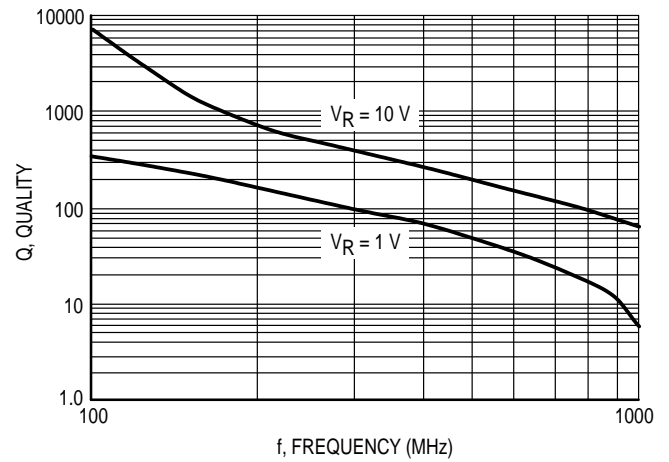
**Figure 3. Series Resistance versus Reverse Voltage**



**Figure 4. Series Resistance versus Frequency**

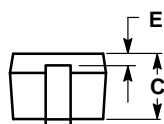
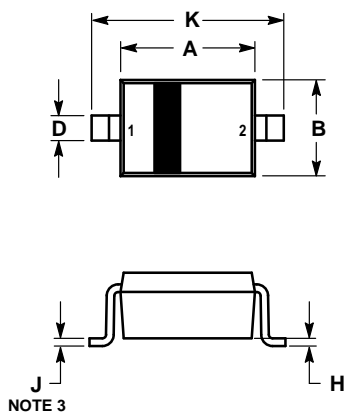


**Figure 5. Capacitance Change Ratio versus Ambient Temperature**



**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

## MMVL535T1

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