

## VARIABLE CAPACITANCE DIODE

### FEATURES

- Very Low Series Resistance
- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A1 = 4.60 minimum)
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

### APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator

### DESCRIPTION

The KV1450 variable capacitance diode was specially made to be used as tuning elements in car radios, radio cassettes, stereos, and other consumer radios. The KV1450 is suitable for wide band tuning from 76 to 108 MHz.

If the KV450 is used only for FM reception, it is possible to operate it at 4.5 V so it is very useful in lowering the power demands of the set.


The KV1450 is available in the miniature SOT23-3 package.

### CLASSIFICATION

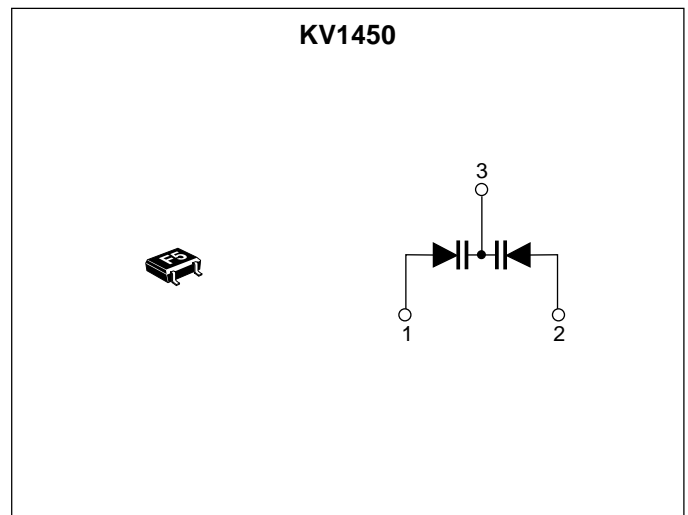
(Unit: pF)

| C              |     | RANK  |       |       |       |       |
|----------------|-----|-------|-------|-------|-------|-------|
|                |     | 1     | 2     | 3     | 4     | 5     |
| C <sub>1</sub> | MIN | 59.15 | 60.30 | 61.50 | 62.75 | 64.00 |
|                | MAX | 60.90 | 62.10 | 63.35 | 64.65 | 65.90 |

### ORDERING INFORMATION

KV1450    
 \_\_\_\_\_ Tape/Reel Code

TAPE/REEL CODE  
 TL: Tape Left



# KV1450

## ABSOLUTE MAXIMUM RATINGS

Reverse Voltage ..... 18 V      Storage Temperature Range ..... -55 to +150 °C  
Forward Current ..... 50 mA      Operating Temperature Range ..... -55 to +85 °C  
Power Dissipation ..... 100 mW      Lead Soldering Temperature (10 s) ..... 235 °C

## ELECTRICAL CHARACTERISTICS

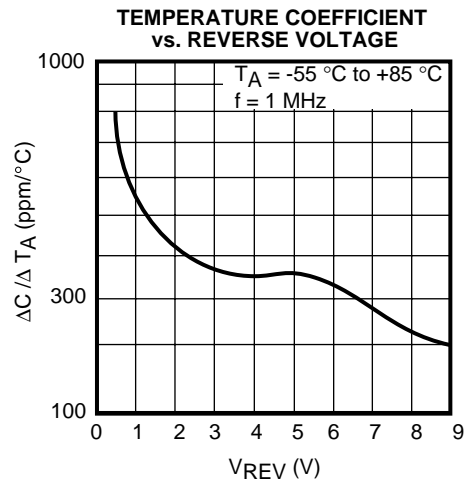
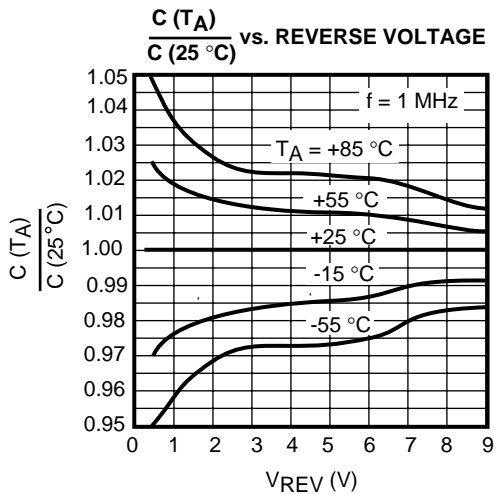
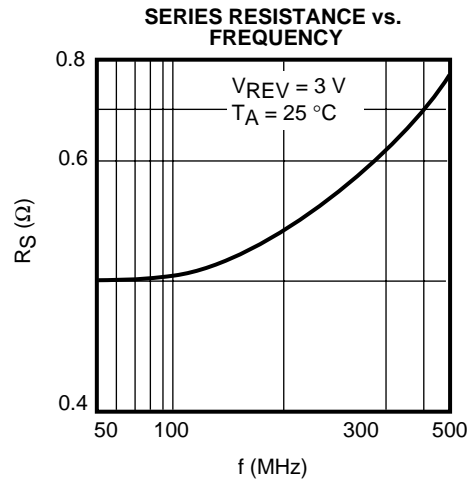
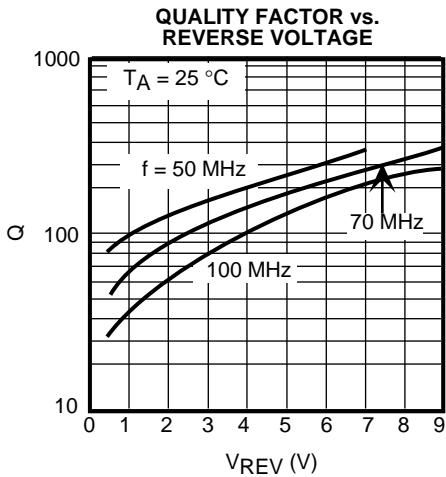
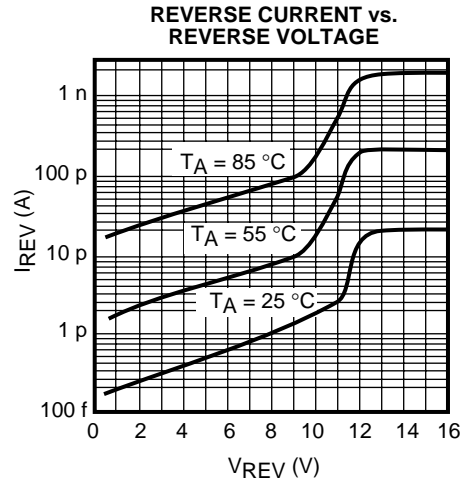
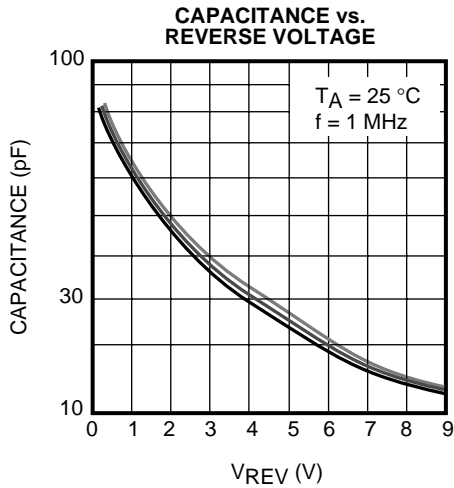
Test conditions:  $T_A = 25\text{ °C}$

| SYMBOL    | PARAMETER           | TEST CONDITIONS                                | MIN   | TYP   | MAX   | UNITS |
|-----------|---------------------|--|-------|-------|-------|-------|
| $V_{REV}$ | Reverse Voltage     | $I_{REV} = 10\ \mu\text{A}$                    | 16    |       |       | V     |
| $I_{REV}$ | Reverse Current     | $V_{REV} = 10.0\ \text{V}$                     |       |       | 100   | nA    |
| $C_1$     | Diode Capacitance 1 | $V_{REV} = 1.0\ \text{V}, f = 1\ \text{MHz}$   | 59.15 | 62.50 | 65.90 | pF    |
| $C_6$     | Diode Capacitance 6 | $V_{REV} = 6.0\ \text{V}, f = 1\ \text{MHz}$   | 17.67 |       | 23.54 | pF    |
| $C_9$     | Diode Capacitance 9 | $V_{REV} = 9.0\ \text{V}, f = 1\ \text{MHz}$   | 10.77 |       | 13.26 | pF    |
| Q         | Quality Factor      | $V_{REV} = 3.0\ \text{V}, f = 100\ \text{MHz}$ | 60    |       |       |       |
| A1        | Capacitance Ratio   | $C_1 / C_9$                                    | 4.60  |       |       |       |

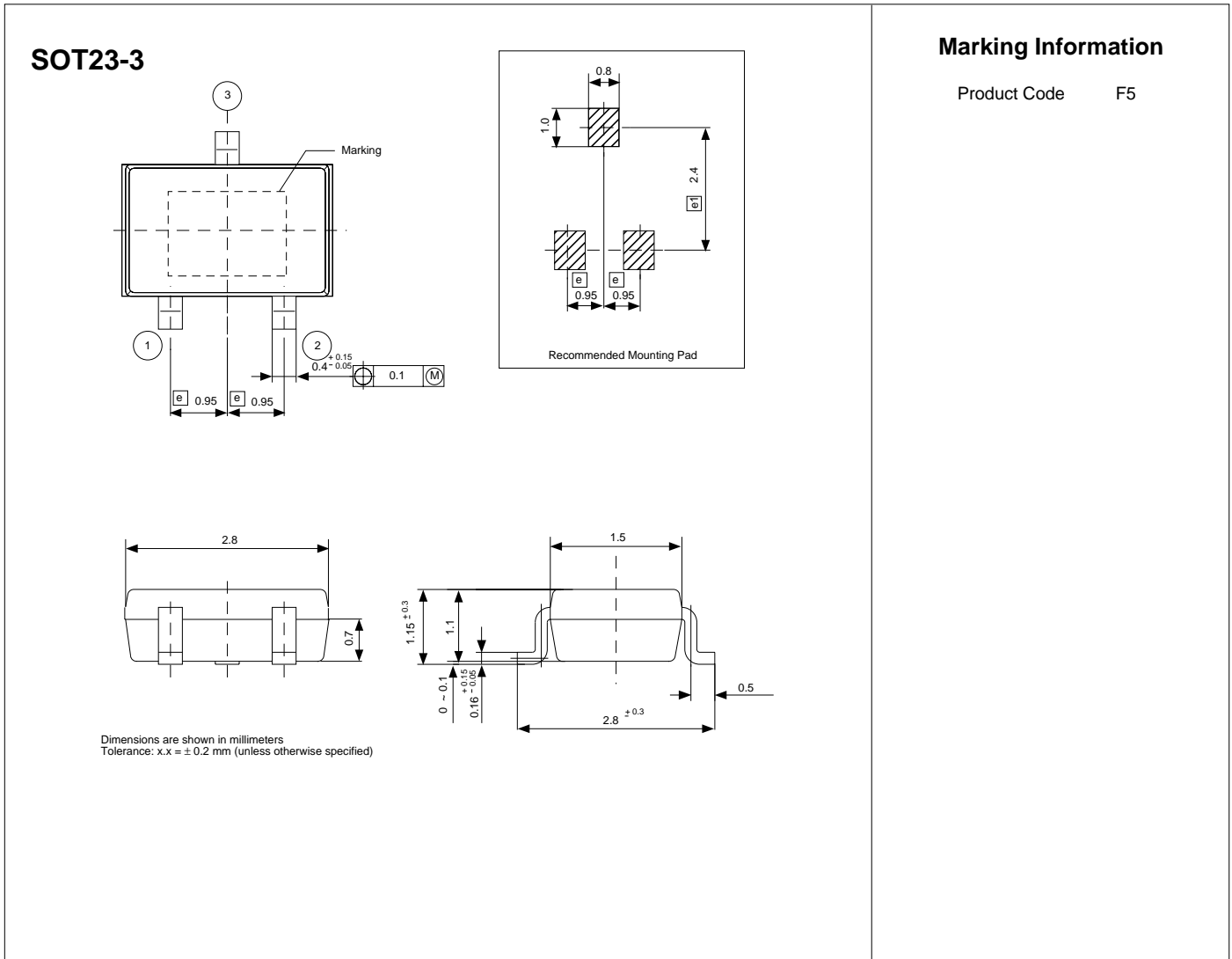
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms,  $\pm 5\ \text{mVrms}$ ).

Note 2: Quality Factor measured with HP 4191A or equivalent instruments.

TYPICAL PERFORMANCE CHARACTERISTICS



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