

## VARIABLE CAPACITANCE DIODE

### FEATURES

- Excellent Linearity (CV Curve)
- Large Capacitance Ratio ( $A = 2.10$  minimum)
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

### APPLICATIONS

- Voltage Controlled Oscillator
- AM Upconversion

### DESCRIPTION

The KV1405 is an 8 volt range variable capacitance diode designed for AM tuner applications. It contains two elements housed in the miniature SOT23-3 surface mount package.

### CLASSIFICATION

(Unit: pF)

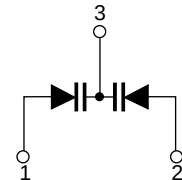
| C \ RANK       |     | 1A     | 2A     | 3A     |
|----------------|-----|--------|--------|--------|
| C <sub>2</sub> | MIN | 132.00 | 141.61 | 153.93 |
|                | MAX | 143.03 | 155.47 | 164.00 |

### ORDERING INFORMATION

KV1405    
 Tape/Reel Code

TAPE/REEL CODE  
 TL: Tape Left

KV1405



## ABSOLUTE MAXIMUM RATINGS

|                         |        |                                         |                |
|-------------------------|--------|-----------------------------------------|----------------|
| Reverse Voltage .....   | 18V    | 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:  $T_A = 25\text{ °C}$

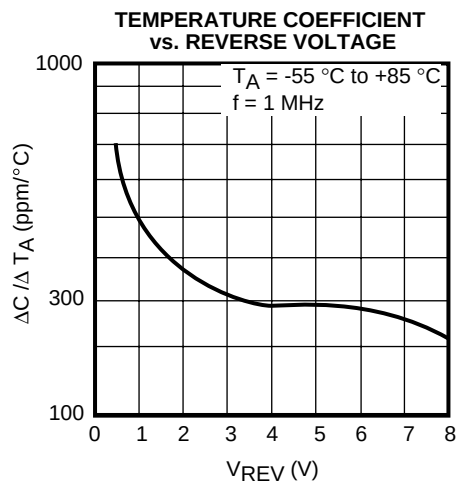
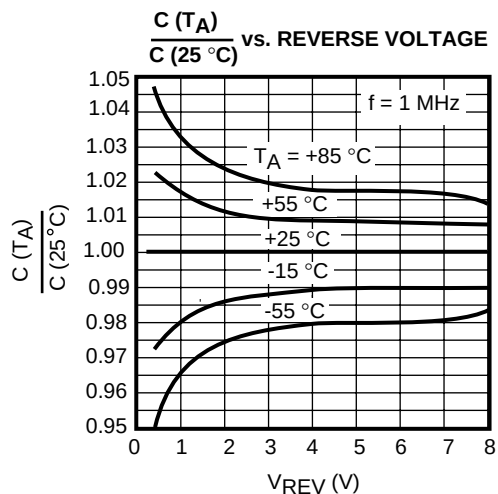
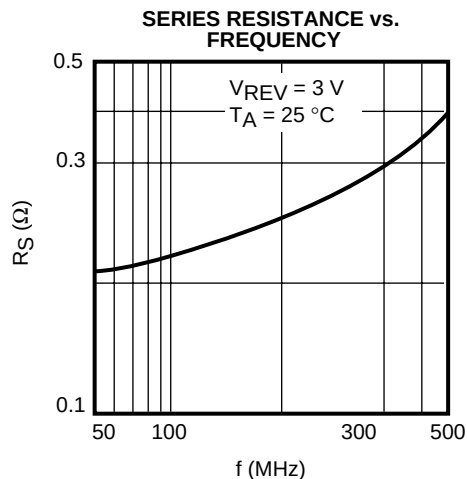
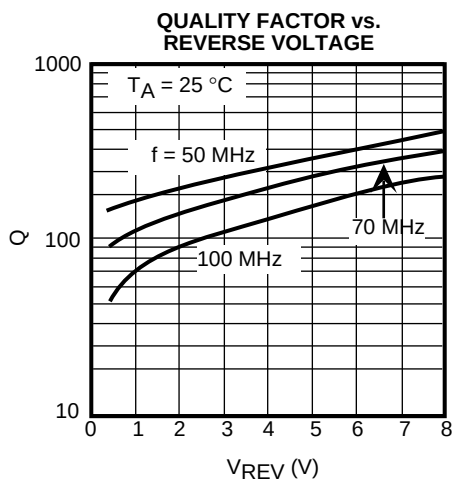
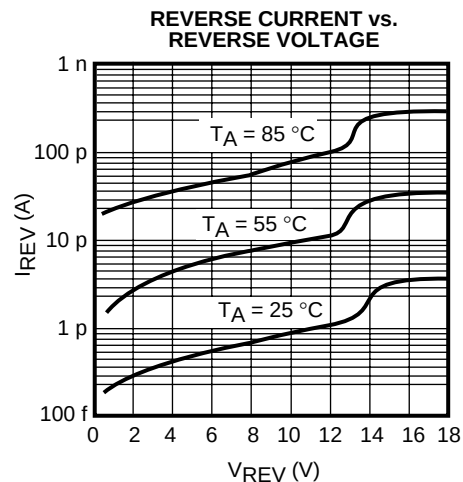
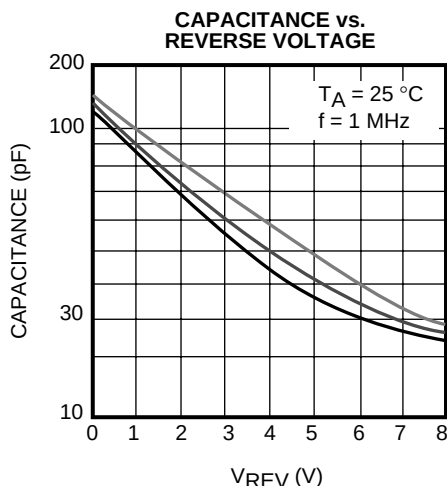
| SYMBOL    | PARAMETER           | TEST CONDITIONS                                        | MIN    | TYP    | MAX    | UNITS    |
|-----------|---------------------|--------------------------------------------------------|--------|--------|--------|----------|
| $V_{REV}$ | Reverse Voltage     | $I_{REV} = 10\text{ }\mu\text{A}$                      | 17     |        |        | V        |
| $I_{REV}$ | Reverse Current     | $V_{REV} = 15.0\text{ V}$                              |        |        | 10     | nA       |
| $C_2$     | Diode Capacitance 2 | $V_{REV} = 2.0\text{ V}$ , $f = 1\text{ MHz}$ (Note 3) | 132.00 | 148.00 | 164.00 | pF       |
| $C_8$     | Diode Capacitance 8 | $V_{REV} = 8.0\text{ V}$ , $f = 1\text{ MHz}$ (Note 3) | 46.00  | 52.00  | 58.00  | pF       |
| $R_S$     | Series Resistance   | $V_{REV} = 3.0\text{ V}$ , $f = 100\text{ MHz}$        |        | 0.3    | 0.5    | $\Omega$ |

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

Note 2: Series Resistance measured with HP 4191A or equivalent instruments.

Note 3: Capacitance measured in parallel connection.

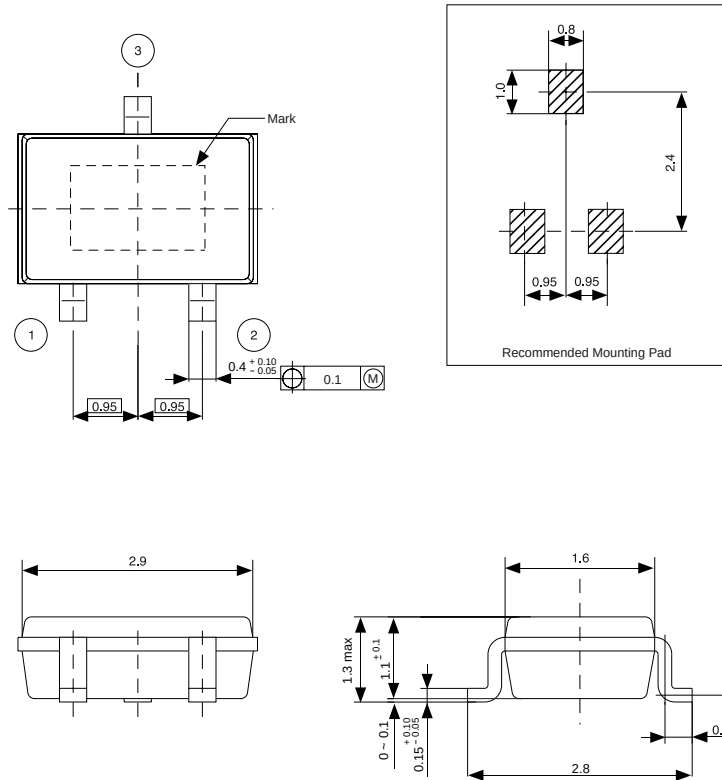
## TYPICAL PERFORMANCE CHARACTERISTICS



## PACKAGE OUTLINE

## Marking Information

Product Code F0 or F05



Dimensions are shown in millimeters  
Tolerance: x.x  $\pm$  0.2 mm (unless otherwise specified)



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