

## VARIABLE CAPACITANCE DIODE

### FEATURES

- Very Low Operating Voltage (1 to 4.5 V)
- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A = 5 minimum)
- Very Small URD Surface Mount Package
- Very Small Capacitance Deviation at Tape/Reel

### APPLICATIONS

- Communications Equipment
- Multi-Channel Cordless Telephone
- Voltage Controlled Oscillator
- UHF Wireless Communication Systems

### DESCRIPTION

The KV1471E is a 5 volt range variable capacitance diode designed for FM tuner applications.

The KV1471E is available in a very small URD Surface Mount Package.

### CLASSIFICATION

(Unit: pF)

| C              |     | RANK  |       |       |
|----------------|-----|-------|-------|-------|
|                |     | 1     | 2     | 3     |
| C <sub>1</sub> | MIN | 30.16 | 33.30 | 36.77 |
|                | MAX | 33.63 | 37.13 | 40.99 |

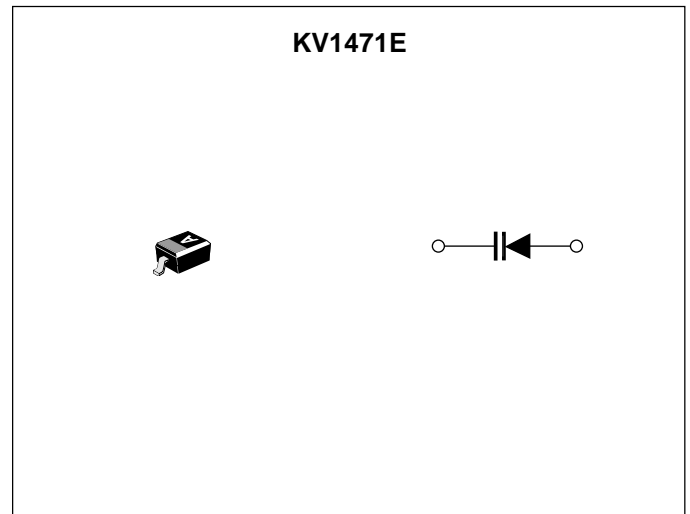
Note: Rank is determined after testing and marked on the reel. All the diodes on a reel have the same rank, but rank can not be specified when ordering.

### ORDERING INFORMATION

KV1471E □□

Tape/Reel Code

TAPE/REEL CODE  
TR: Tape Right



# KV1471E

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## 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

## ELECTRICAL CHARACTERISTICS

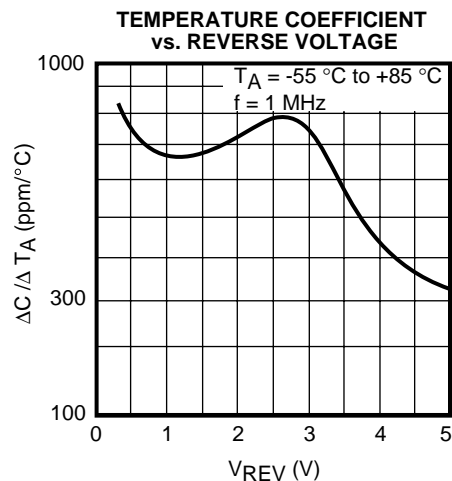
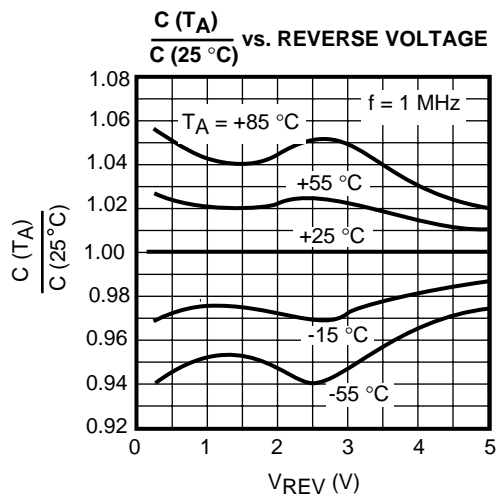
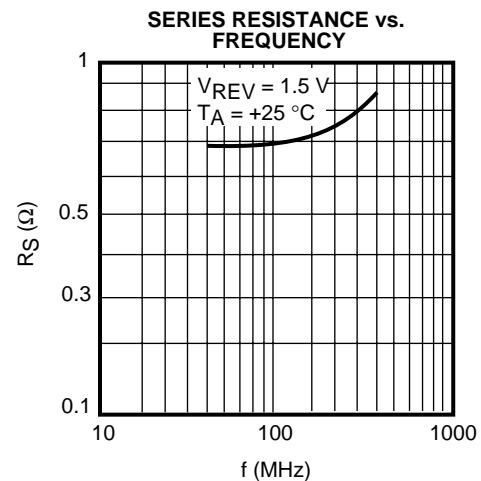
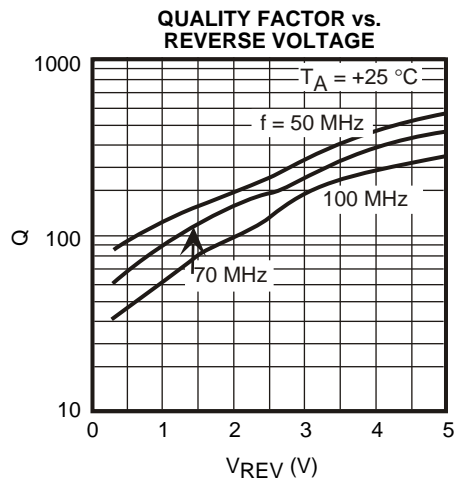
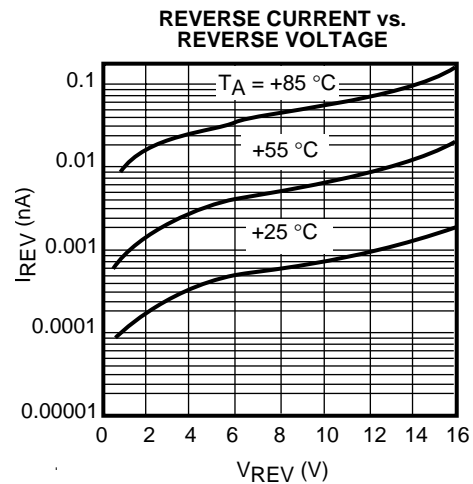
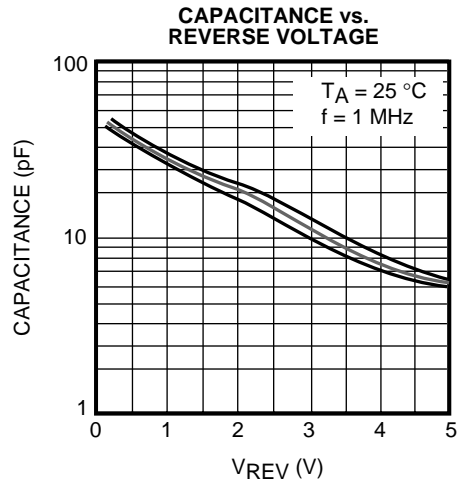
Test conditions:  $T_A = 25\text{ °C}$

| SYMBOL    | PARAMETER             | TEST CONDITIONS                                | MIN   | TYP   | MAX   | UNITS    |
|-----------|-----------------------|------------------------------------------------|-------|-------|-------|----------|
| $V_{REV}$ | Reverse Voltage       | $I_{REV} = 10\ \mu\text{A}$                    | 16    |       |       | V        |
| $I_{REV}$ | Reverse Current       | $V_{REV} = 10\ \text{V}$                       |       |       | 50    | nA       |
| $C_1$     | Diode Capacitance 1   | $V_{REV} = 1\ \text{V}, f = 1\ \text{MHz}$     | 30.16 | 35.60 | 40.99 | pF       |
| $C_{4.5}$ | Diode Capacitance 4.5 | $V_{REV} = 4.5\ \text{V}, f = 1\ \text{MHz}$   | 6.20  | 7.70  | 9.20  | pF       |
| $R_S$     | Series Resistance     | $V_{REV} = 1.5\ \text{V}, f = 100\ \text{MHz}$ |       | 0.8   | 1.0   | $\Omega$ |
| A         | Capacitance Ratio     | $C_1 / C_5$                                    | 5.00  |       |       |          |

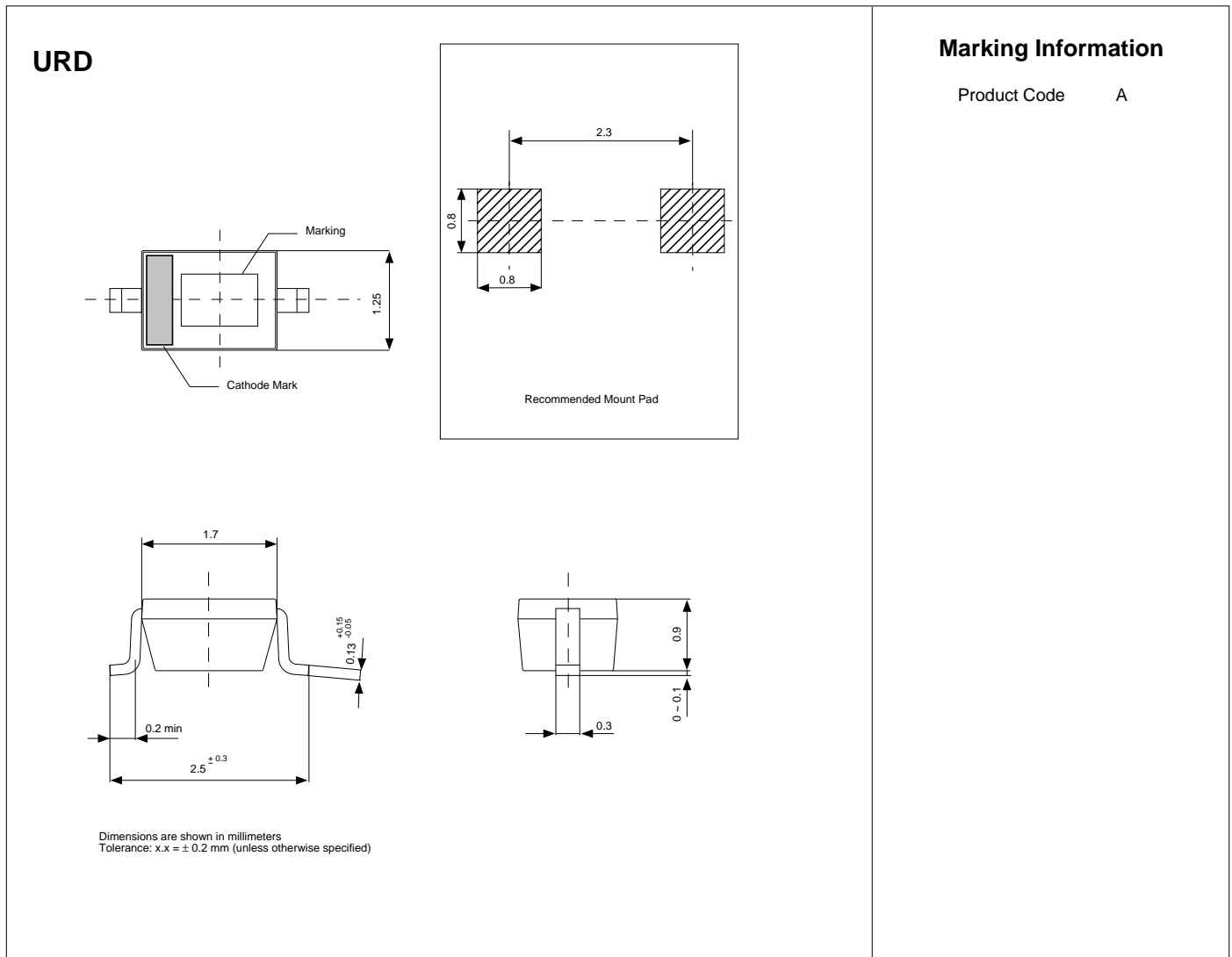
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms,  $\pm 5$  mVrms).

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

## TYPICAL PERFORMANCE CHARACTERISTICS



## PACKAGE OUTLINE



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