

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 UFD 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 KV1471K is a 5 volt range variable capacitance diode designed for FM tuner applications.

The KV1471K is available in a very small UFD Surface Mount Package.

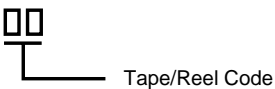
CLASSIFICATION

(Unit: pF)

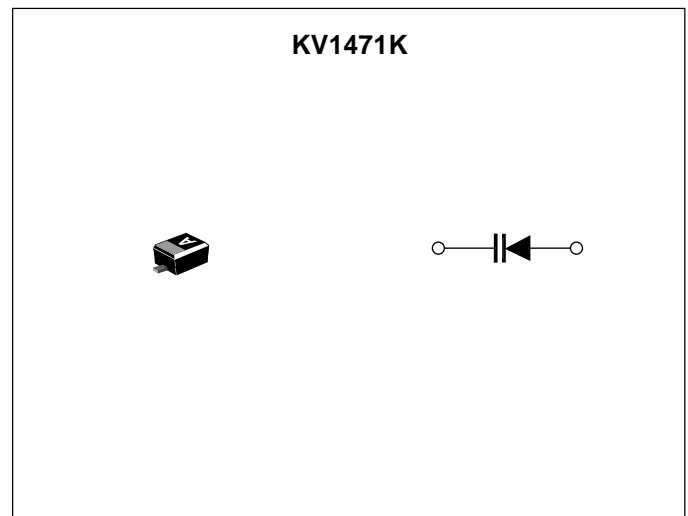
| C | | RANK | | |
|----------------|-----|-------|-------|-------|
| | | 1 | 2 | 3 |
| C ₁ | MIN | 30.16 | 33.30 | 36.77 |
| | MAX | 33.63 | 37.13 | 40.99 |

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

KV1471K 

TAPE/REEL CODE
TR: Tape Right



KV1471K

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: $T_A = 25\text{ °C}$

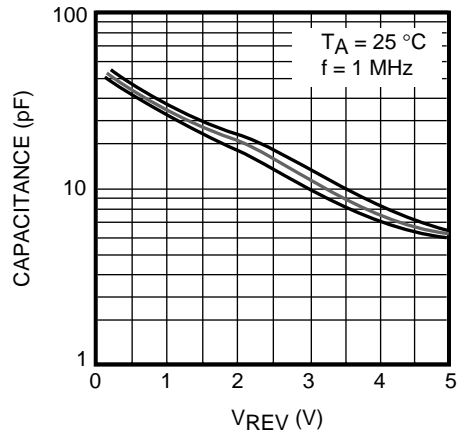
| SYMBOL | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-----------|-----------------------|--|-------|-------|-------|----------|
| V_{REV} | Reverse Voltage | $I_{REV} = 10\ \mu\text{A}$ | 16 | | | V |
| I_{REV} | Reverse Current | $V_{REV} = 10\ \text{V}$ | | | 50 | nA |
| C_1 | Diode 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 | Ω |
| 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, ± 5 mVrms).

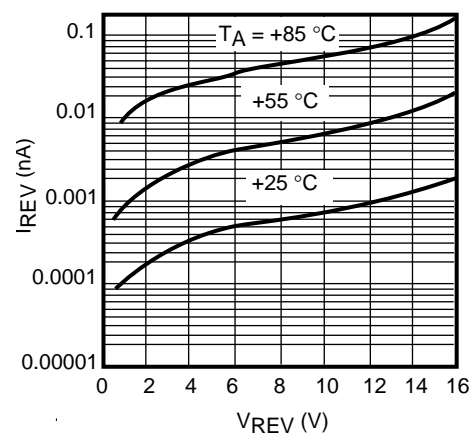
Note 2: Series Resistance measured with HP 4191A or equivalent instruments.

TYPICAL PERFORMANCE CHARACTERISTICS

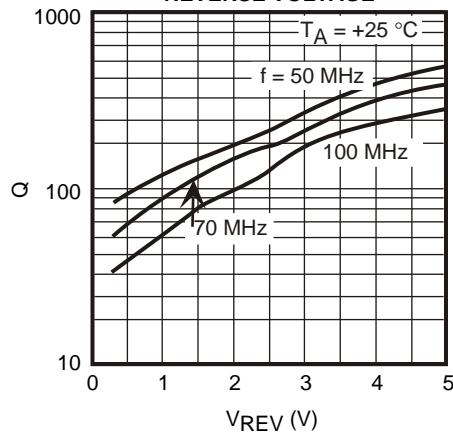
CAPACITANCE vs. REVERSE VOLTAGE



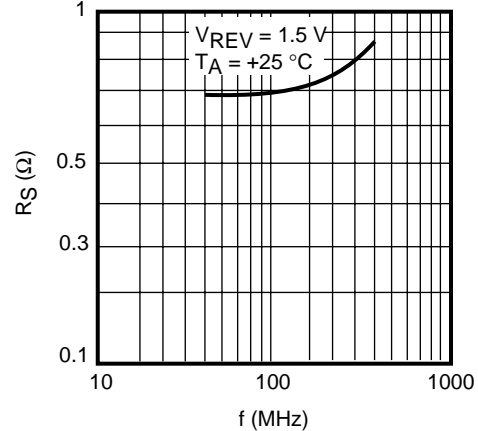
REVERSE CURRENT vs. REVERSE VOLTAGE



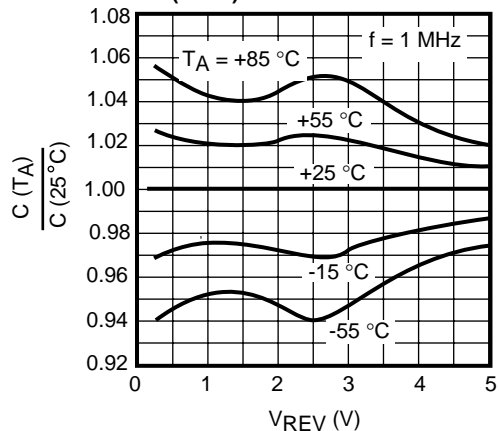
QUALITY FACTOR vs. REVERSE VOLTAGE



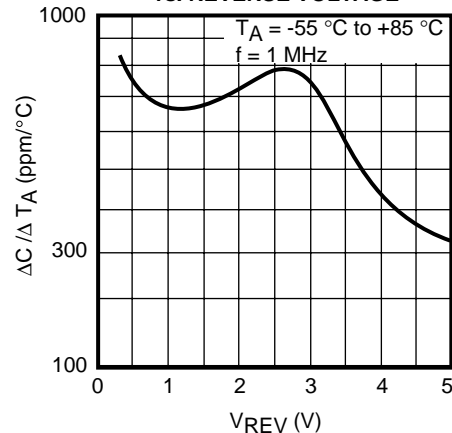
SERIES RESISTANCE vs. FREQUENCY



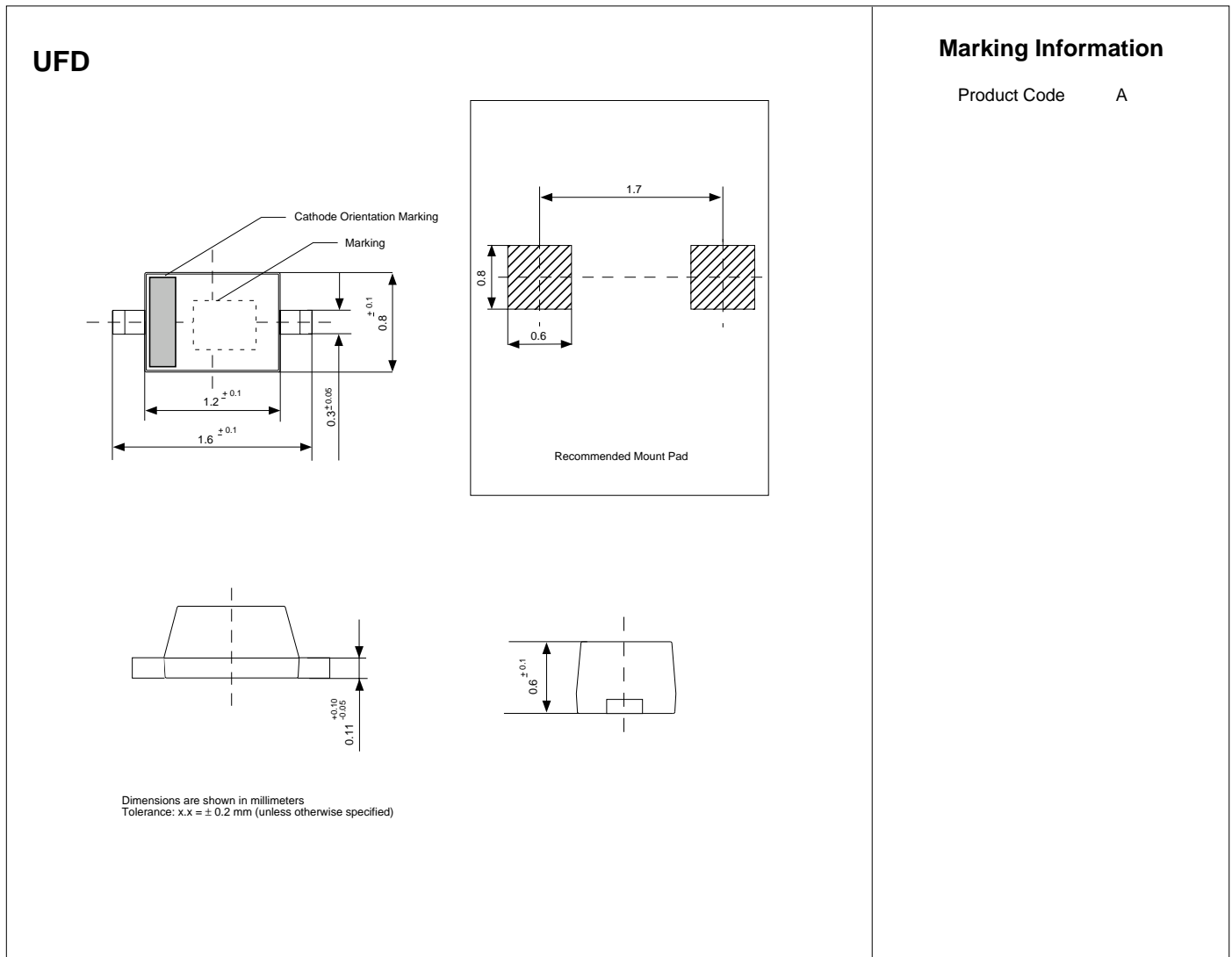
$\frac{C(T_A)}{C(25\text{ }^\circ\text{C})}$ vs. REVERSE VOLTAGE



TEMPERATURE COEFFICIENT vs. REVERSE VOLTAGE



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