

## 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.

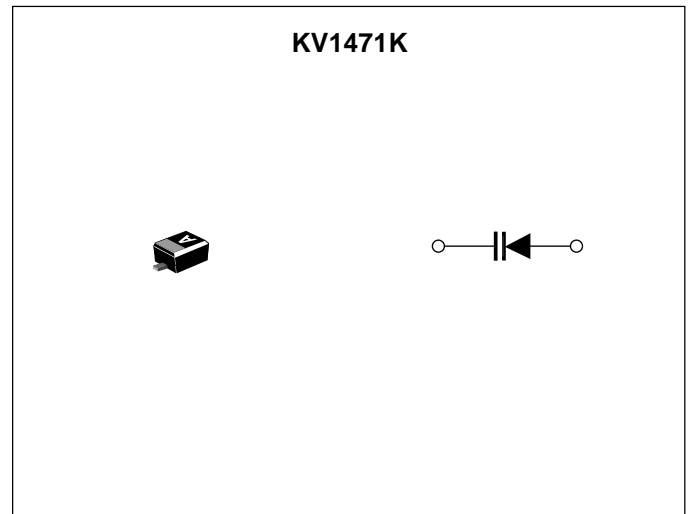
The KV1471K is available in a very small UFD Surface Mount Package.

### CLASSIFICATION

(Unit: pF)

C		RANK		
		1	2	3
C <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

KV1471K □□  
 Tape/Reel Code

TAPE/REEL CODE  
 TR: Tape Right

# KV1471K

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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:  $T_A = 25\text{ °C}$

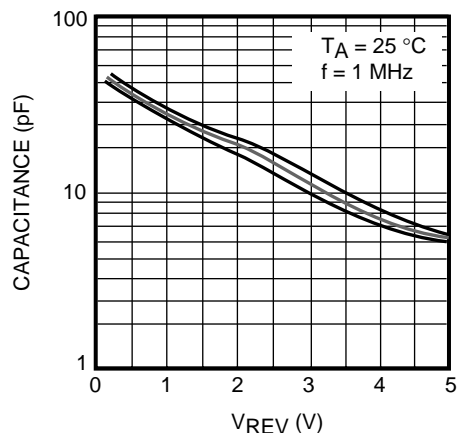
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{REV}$	Reverse Voltage	$I_{REV} = 10\ \mu\text{A}$	16			V
$I_{REV}$	Reverse Current	$V_{REV} = 10\ \text{V}$			50	nA
$C_1$	Diode Capacitance 1	$V_{REV} = 1\ \text{V}, f = 1\ \text{MHz}$	30.16	35.60	40.99	pF
$C_{4.5}$	Diode Capacitance 4.5	$V_{REV} = 4.5\ \text{V}, f = 1\ \text{MHz}$	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).

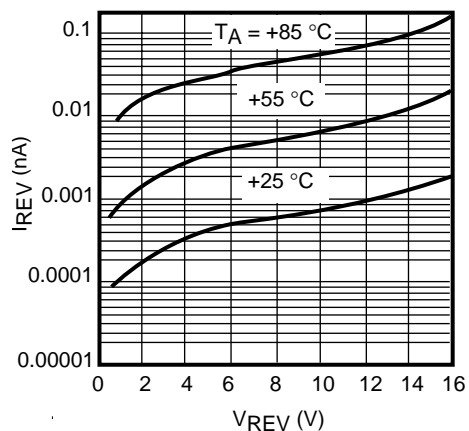
Note 2: Series Resistance measured with HP 4191A or equivalent instruments.

## TYPICAL PERFORMANCE CHARACTERISTICS

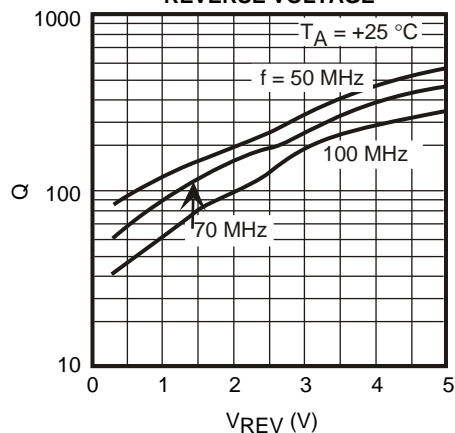
**CAPACITANCE vs. REVERSE VOLTAGE**



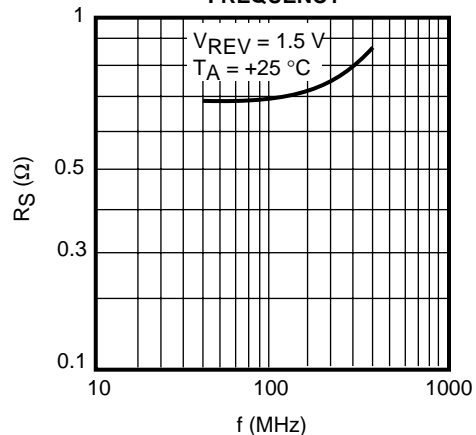
**REVERSE CURRENT vs. REVERSE VOLTAGE**



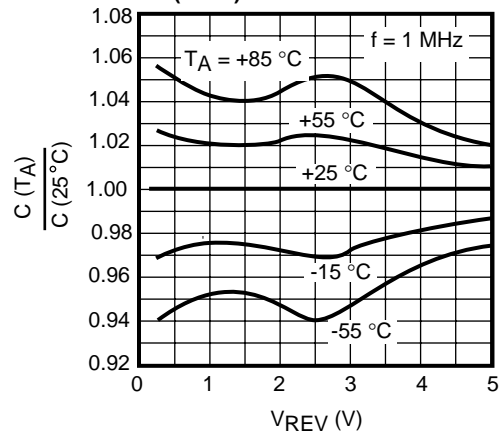
**QUALITY FACTOR vs. REVERSE VOLTAGE**



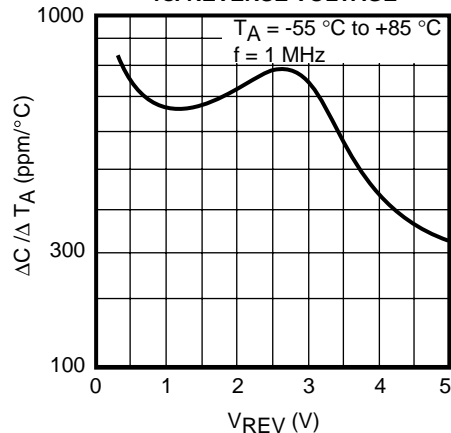
**SERIES RESISTANCE vs. FREQUENCY**



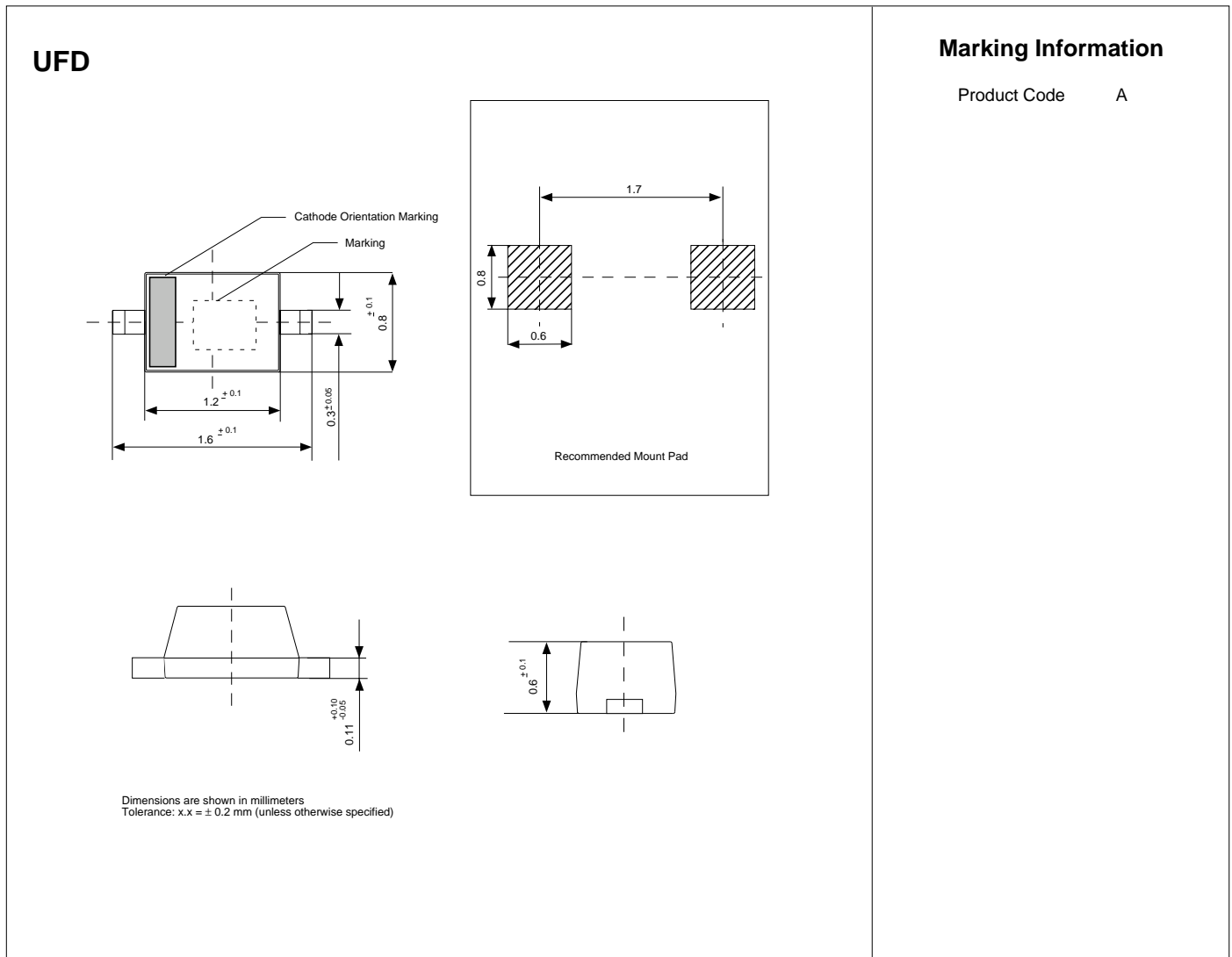
**$\frac{C(T_A)}{C(25\text{ }^\circ\text{C})}$  vs. REVERSE VOLTAGE**



**TEMPERATURE COEFFICIENT vs. REVERSE VOLTAGE**



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