

## VARIABLE CAPACITANCE DIODE

### FEATURES

- Very Low Series Resistance
- Excellent Linearity (CV Curve) with Very Wide Operating Range
- Large Capacitance Ratio (A = 2.57 minimum)
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

### APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator
- Stereo Tuner

### DESCRIPTION

The KV1420 is a high withstanding voltage variable capacitance diode specially designed for high grade stereo tuners. Superior linearity characteristics and a high start-up voltage (7 V) provide for strong input characteristics which make it highly suited to provide a strong front end in mimimizing cross modulation.


The KV1420 is available in a miniature SOT23-3 package.

### CLASSIFICATION

(Unit: pF)

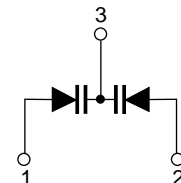
C		RANK						
		1	2	3	4	5	6	7
C <sub>7</sub>	MIN	44.81	43.93	43.07	42.23	41.40	40.59	39.79
	MAX	46.16	45.26	44.37	43.50	42.64	41.81	40.99

### ORDERING INFORMATION

KV1420    
 Tape/Reel Code

TAPE/REEL CODE  
 TL: Tape Left

### KV1420



# KV1420

## ABSOLUTE MAXIMUM RATINGS

Reverse Voltage ..... 30 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

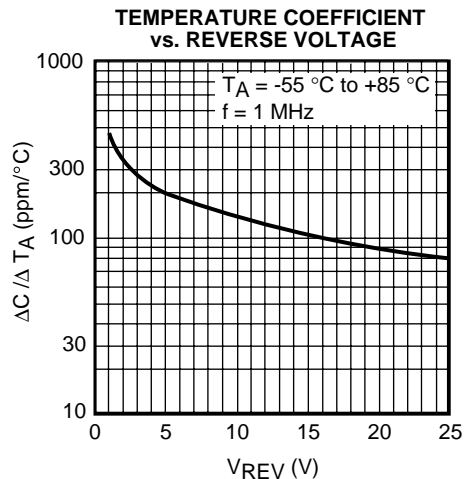
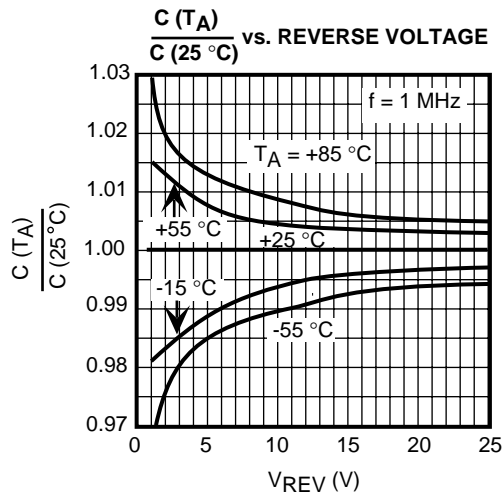
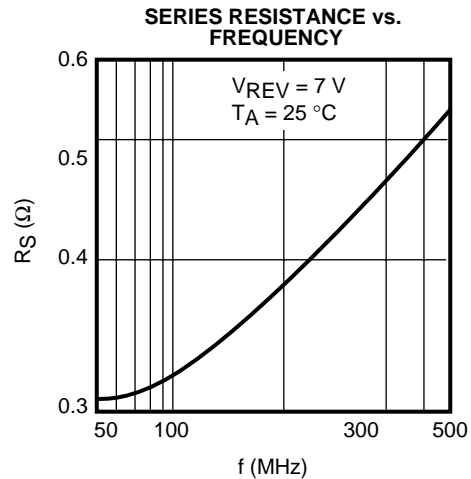
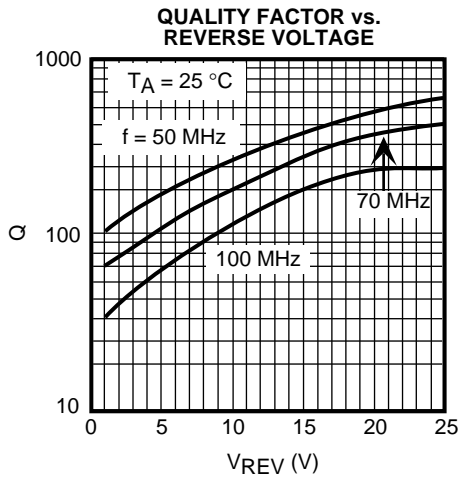
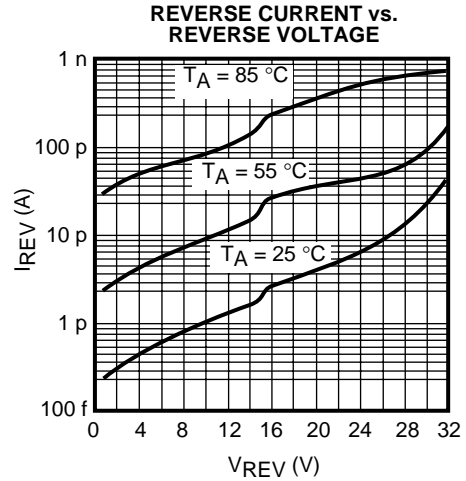
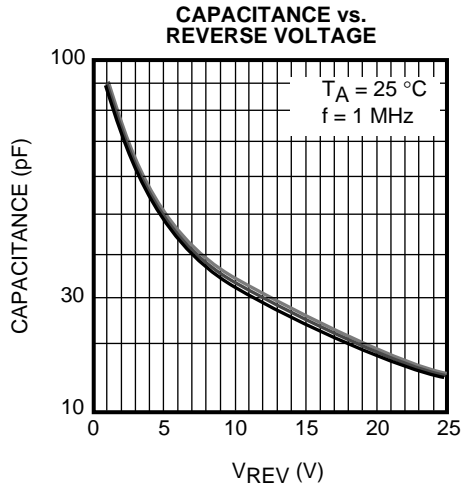
Test conditions:  $T_A = 25\text{ °C}$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{REV}$	Reverse Voltage	$I_{REV} = 10\ \mu\text{A}$	30			V
$I_{REV}$	Reverse Current	$V_{REV} = 25.0\ \text{V}$			100	nA
$C_7$	Diode Capacitance 7	$V_{REV} = 7.0\ \text{V}, f = 1\ \text{MHz}$	39.79		46.16	pF
$C_{13}$	Diode Capacitance 13	$V_{REV} = 13.0\ \text{V}, f = 1\ \text{MHz}$	24.25		28.70	pF
$C_{19}$	Diode Capacitance 19	$V_{REV} = 19.0\ \text{V}, f = 1\ \text{MHz}$	17.32		20.50	pF
$C_{25}$	Diode Capacitance 25	$V_{REV} = 25.0\ \text{V}, f = 1\ \text{MHz}$	13.93		16.49	pF
$R_s$	Series Resistance	$V_{REV} = 7.0\ \text{V}, f = 70\ \text{MHz}$			0.5	$\Omega$
A	Capacitance Ratio	$C_7 / C_{25}$	2.57	2.80	3.03	

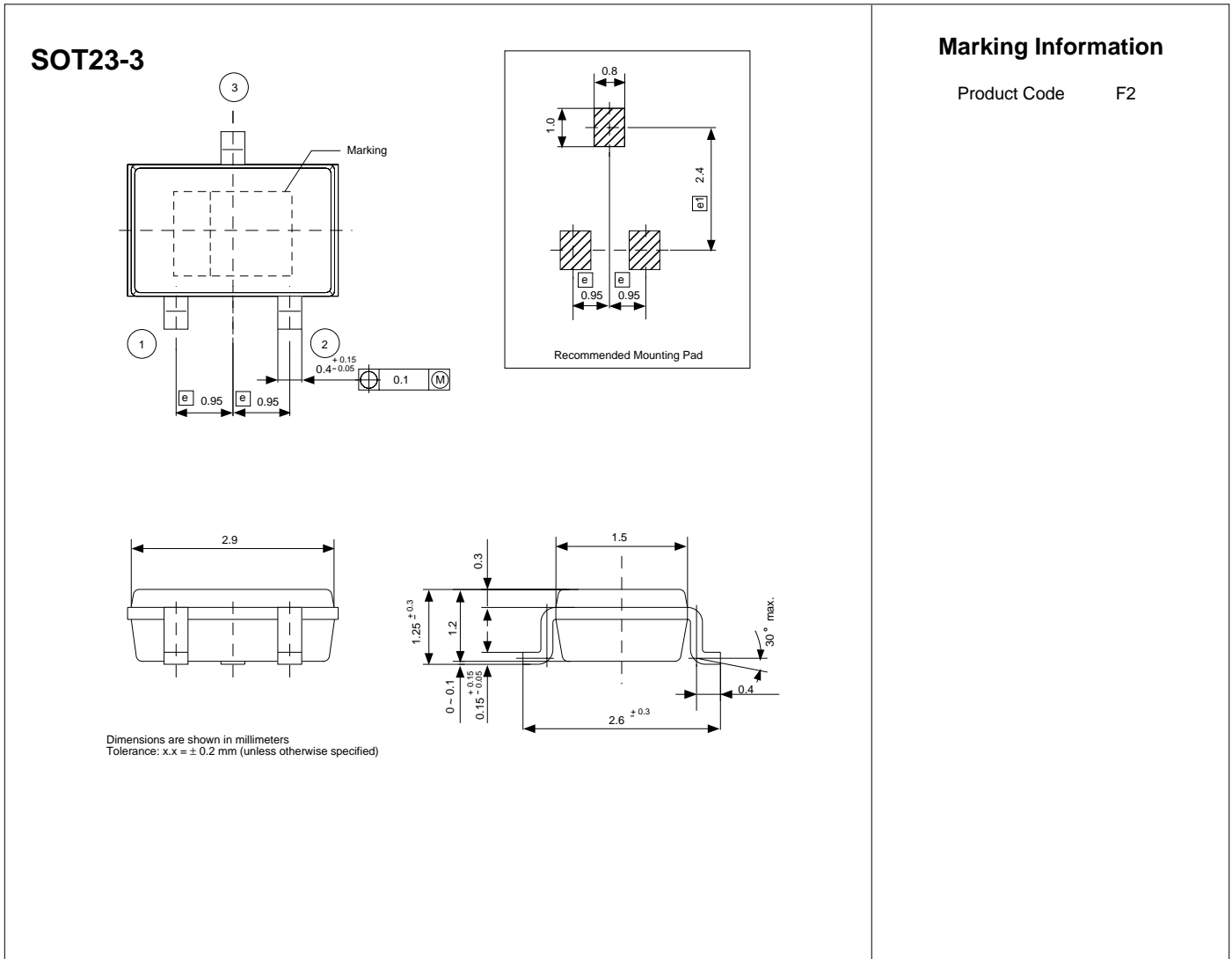
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms,  $\pm 5\ \text{mVrms}$ ).

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

TYPICAL PERFORMANCE CHARACTERISTICS



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