

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)

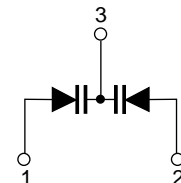
C		RANK						
		1	2	3	4	5	6	7
C ₇	MIN	44.81	43.93	43.07	42.23	41.40	40.59	39.79
	MAX	46.16	45.26	44.37	43.50	42.64	41.81	40.99

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

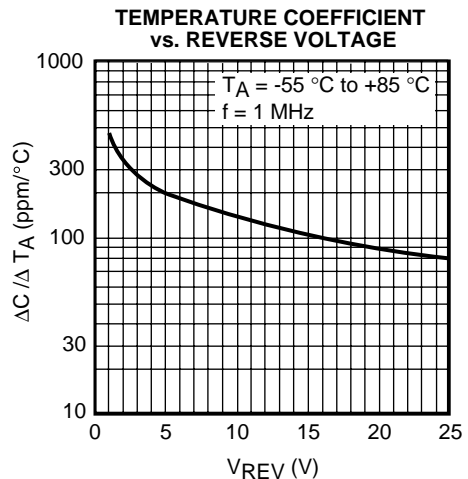
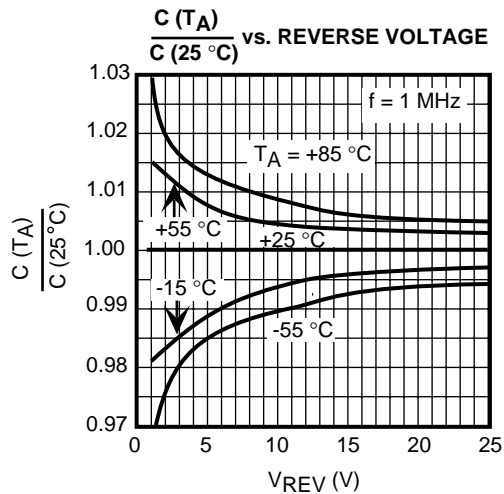
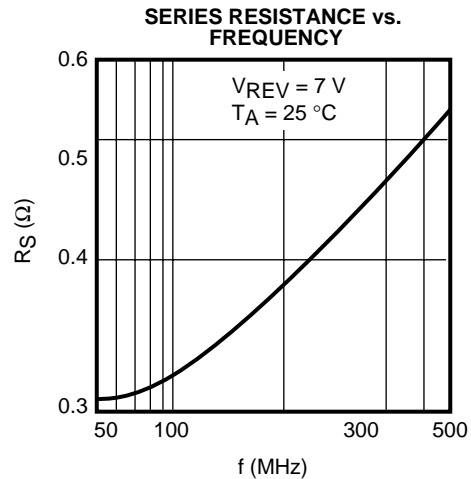
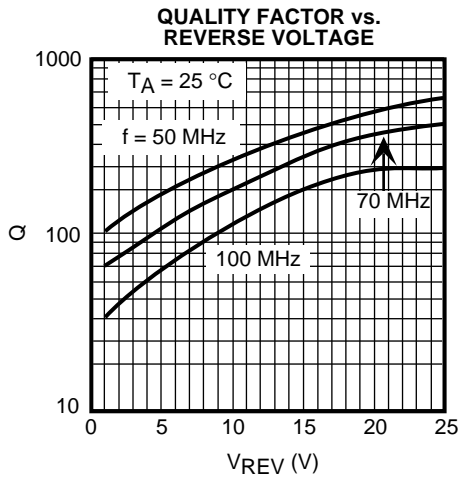
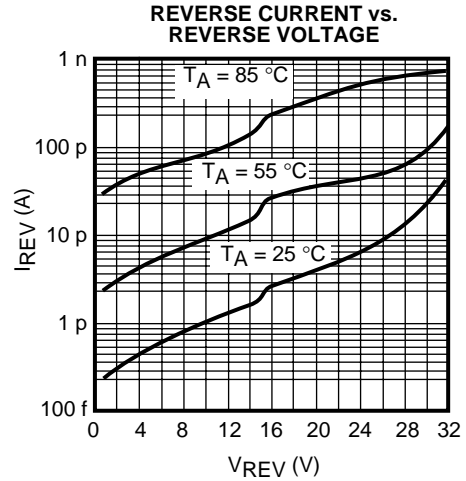
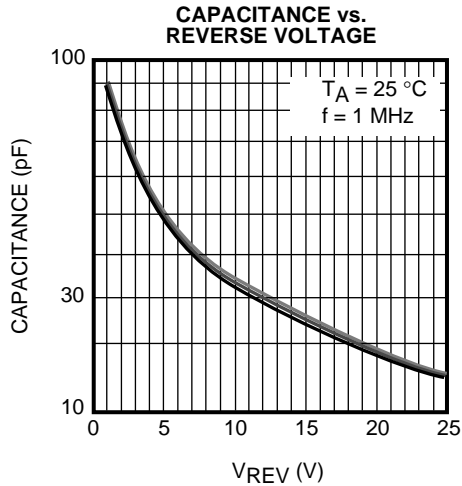
Test conditions: $T_A = 25\text{ °C}$

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	Ω
A	Capacitance Ratio	C_7 / C_{25}	2.57	2.80	3.03	

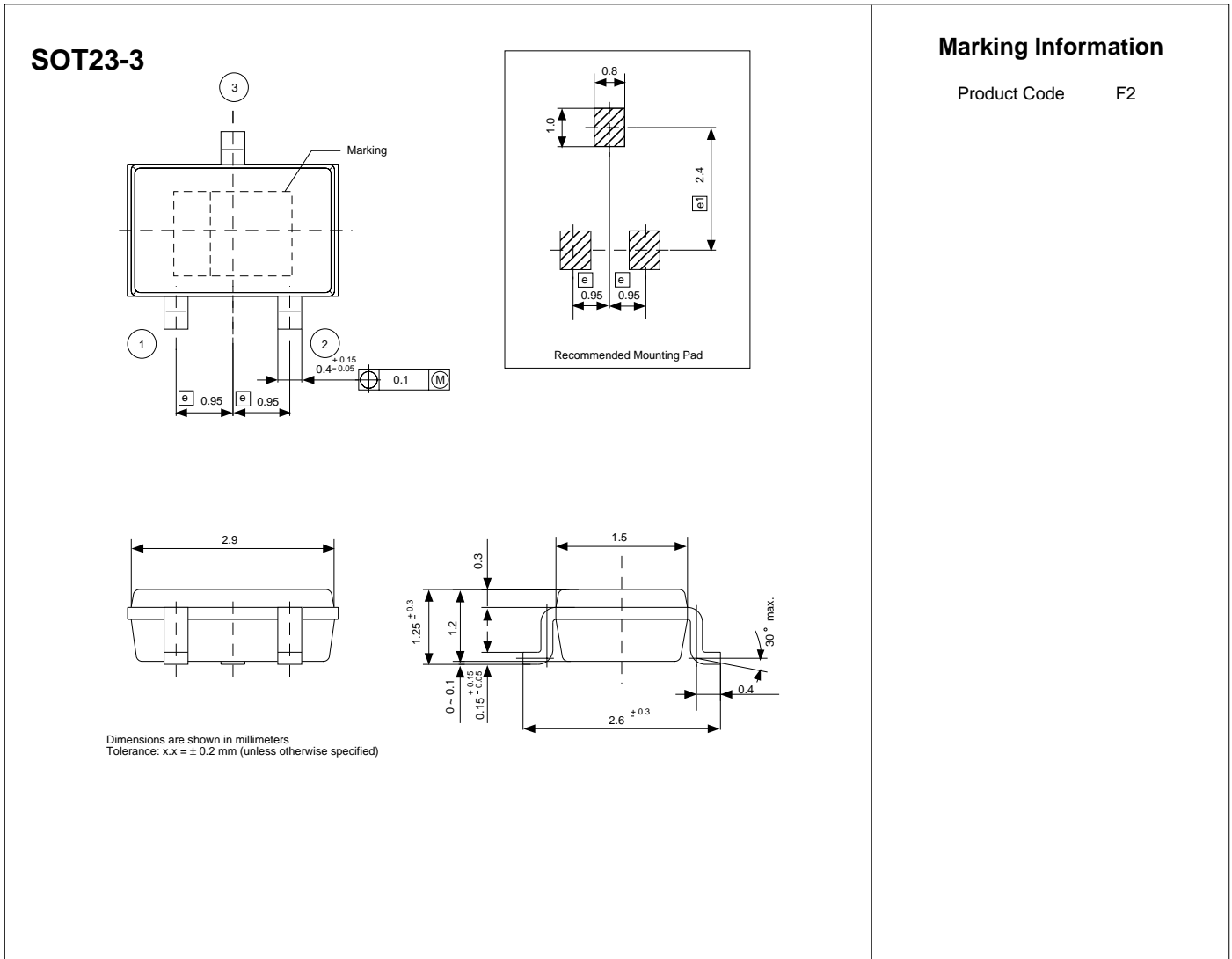
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, $\pm 5\ \text{mVrms}$).

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

TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE



Toko America, Inc. Headquarters
1250 Feehanville Drive, Mount Prospect, Illinois 60056
Tel: (847) 297-0070 Fax: (847) 699-7864

TOKO AMERICA REGIONAL OFFICES

Midwest Regional Office
Toko America, Inc.
1250 Feehanville Drive
Mount Prospect, IL 60056
Tel: (847) 297-0070
Fax: (847) 699-7864

Western Regional Office
Toko America, Inc.
2480 North First Street, Suite 260
San Jose, CA 95131
Tel: (408) 432-8281
Fax: (408) 943-9790

Eastern Regional Office
Toko America, Inc.
107 Mill Plain Road
Danbury, CT 06811
Tel: (203) 748-6871
Fax: (203) 797-1223

Semiconductor Technical Support
Toko Design Center
4755 Forge Road
Colorado Springs, CO 80907
Tel: (719) 528-2200
Fax: (719) 528-2375

Visit our Internet site at <http://www.tokoam.com>

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