

## VARIABLE CAPACITANCE DIODE

### FEATURES

- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A = 2.10 minimum)
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

### APPLICATIONS

- Voltage Controlled Oscillator
- AM Upconversion

### DESCRIPTION


The KV1405 is an 8 volt range variable capacitance diode designed for AM tuner applications. It contains two elements housed in the miniature SOT23-3 surface mount package.

### CLASSIFICATION

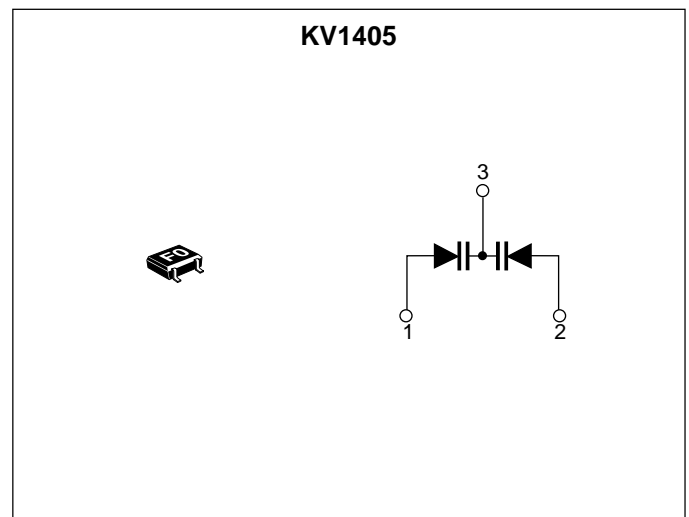
(Unit: pF)

C		RANK		
		1A	2A	3A
C <sub>2</sub>	MIN	132.00	141.61	153.93
	MAX	143.03	155.47	164.00

### ORDERING INFORMATION

KV1405    
 Tape/Reel Code

TAPE/REEL CODE  
 TL: Tape Left



# KV1405

---

## 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      Lead Soldering Temperature (10 s) ..... 235 °C

## ELECTRICAL CHARACTERISTICS

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

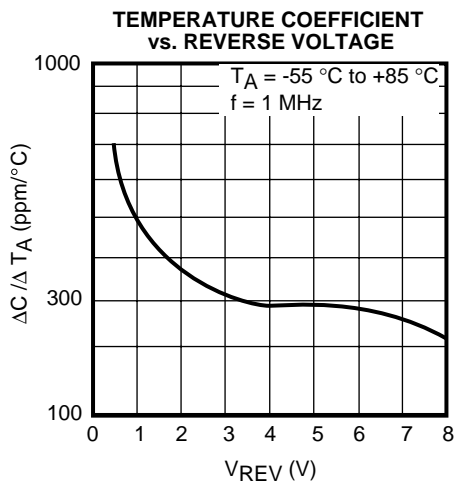
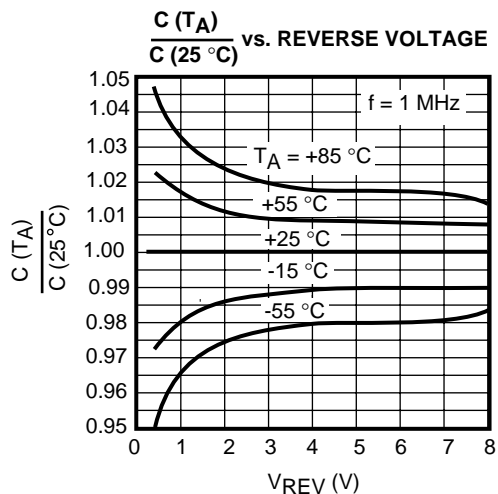
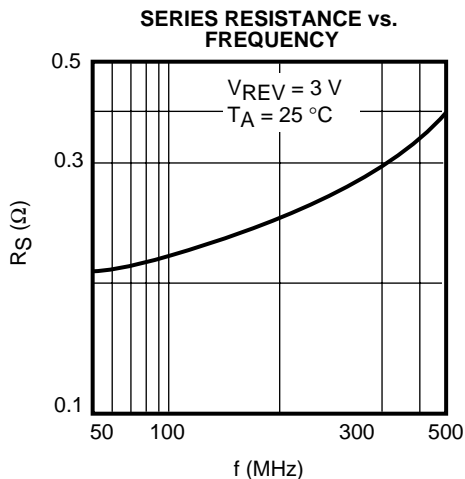
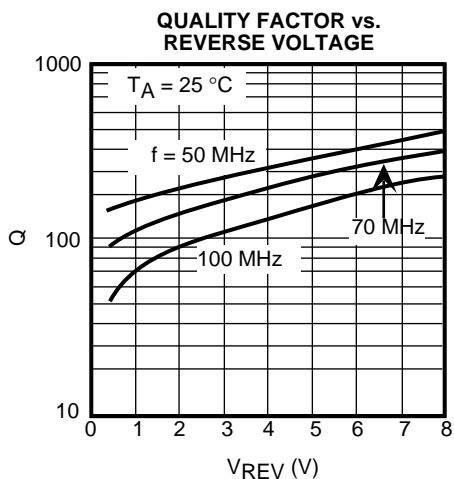
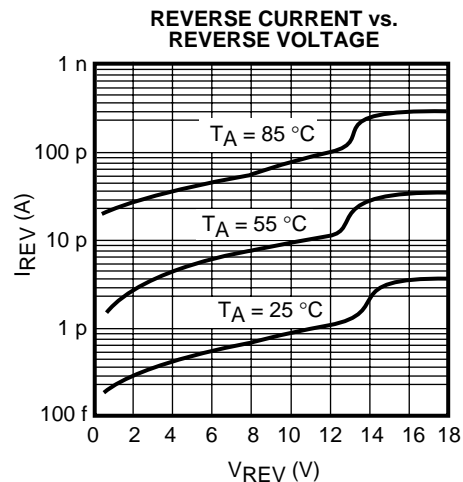
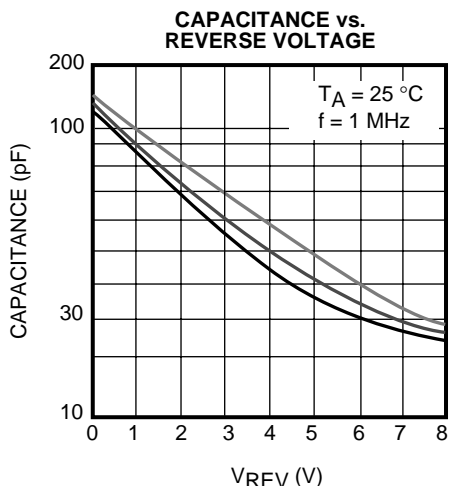
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{REV}$	Reverse Voltage	$I_{REV} = 10\ \mu\text{A}$	17			V
$I_{REV}$	Reverse Current	$V_{REV} = 15.0\ \text{V}$			10	nA
$C_2$	Diode Capacitance 2	$V_{REV} = 2.0\ \text{V}$ , $f = 1\ \text{MHz}$ (Note 3)	132.00	148.00	164.00	pF
$C_8$	Diode Capacitance 8	$V_{REV} = 8.0\ \text{V}$ , $f = 1\ \text{MHz}$ (Note 3)	46.00	52.00	58.00	pF
$R_S$	Series Resistance	$V_{REV} = 3.0\ \text{V}$ , $f = 100\ \text{MHz}$		0.3	0.5	$\Omega$

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

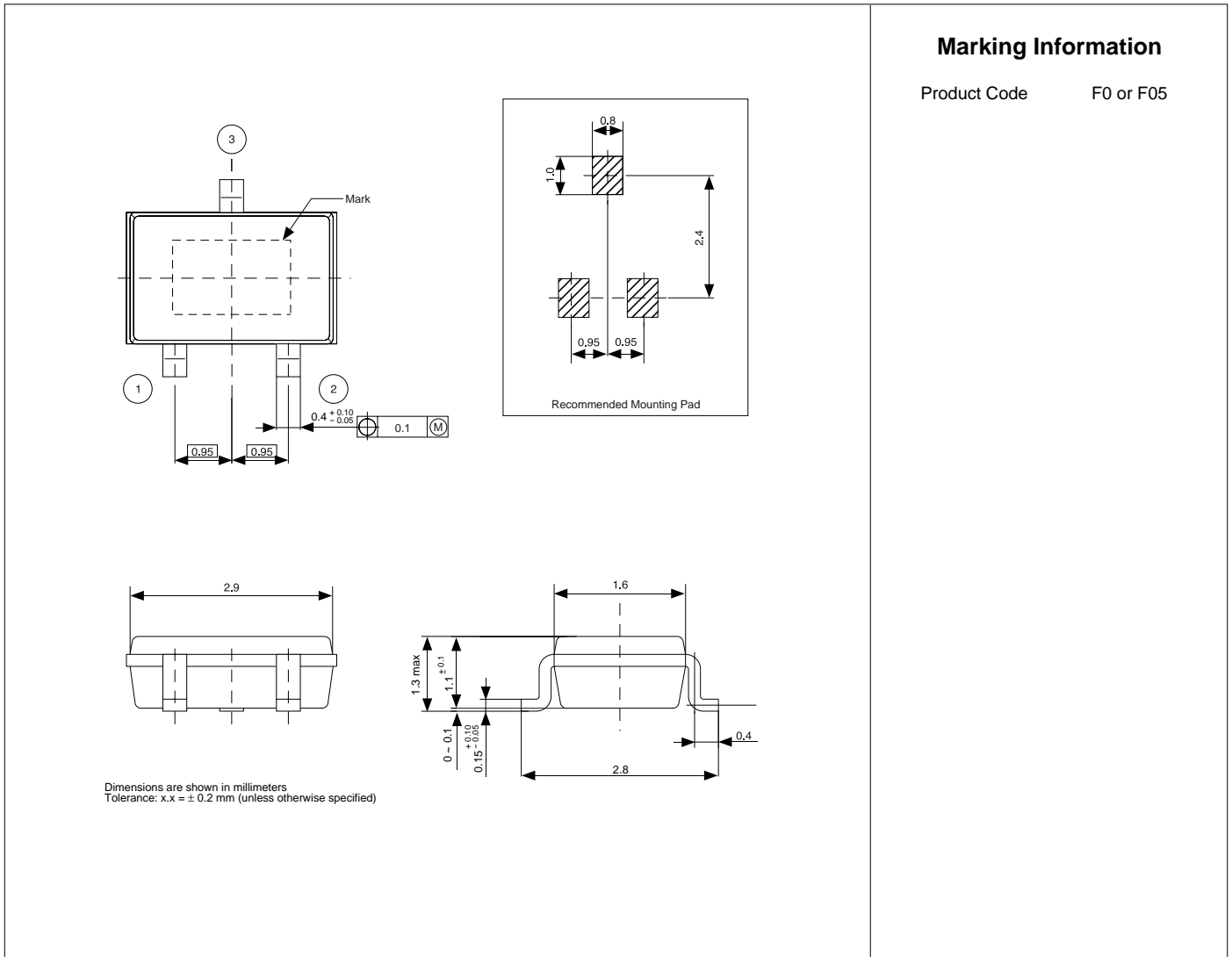
Note 2: Series Resistance measured with HP 4191A or equivalent instruments.

Note 3: Capacitance measured in parallel connection.

## 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>

The information furnished by TOKO, Inc. is believed to be accurate and reliable. However, TOKO reserves the right to make changes or improvements in the design, specification or manufacture of its products without further notice. TOKO does not assume any liability arising from the application or use of any product or circuit described herein, nor for any infringements of patents or other rights of third parties which may result from the use of its products. No license is granted by implication or otherwise under any patent or patent rights of TOKO, Inc.