

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)

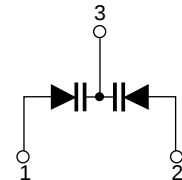
C \ RANK		1A	2A	3A
C ₂	MIN	132.00	141.61	153.93
	MAX	143.03	155.47	164.00

ORDERING INFORMATION

KV1405 
 Tape/Reel Code

TAPE/REEL CODE
 TL: Tape Left

KV1405



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: $T_A = 25\text{ °C}$

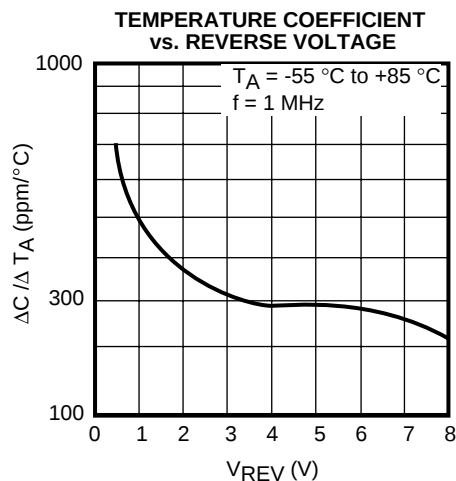
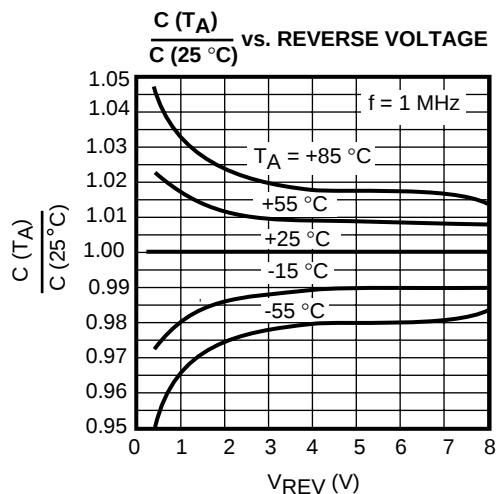
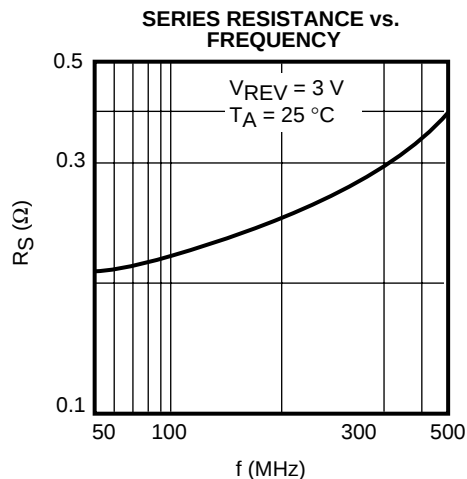
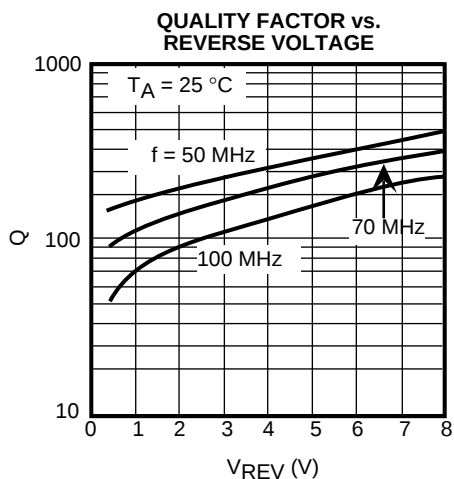
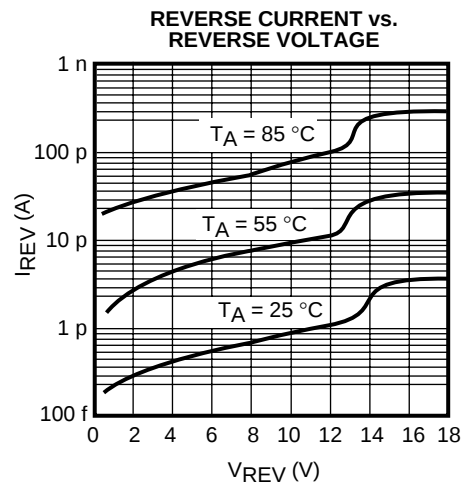
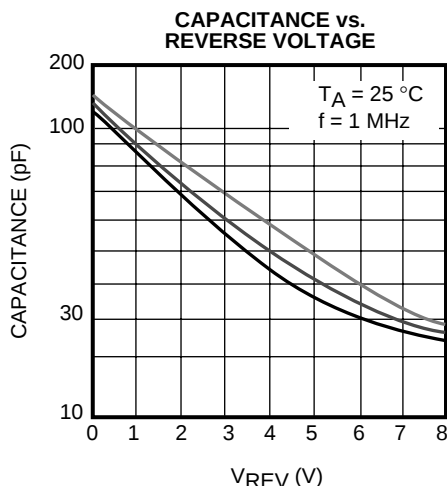
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{REV}	Reverse Voltage	$I_{REV} = 10\text{ }\mu\text{A}$	17			V
I_{REV}	Reverse Current	$V_{REV} = 15.0\text{ V}$			10	nA
C_2	Diode Capacitance 2	$V_{REV} = 2.0\text{ V}$, $f = 1\text{ MHz}$ (Note 3)	132.00	148.00	164.00	pF
C_8	Diode Capacitance 8	$V_{REV} = 8.0\text{ V}$, $f = 1\text{ MHz}$ (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	Ω

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



SOT23-3

Top view of the SOT23-3 package. The package is rectangular with a central dashed rectangle labeled "Mark". Three pins are shown: Pin 1 (bottom left), Pin 2 (bottom right), and Pin 3 (top center). Dimensions include 0.95 mm for the distance from the center to each side pin, and 0.4 mm for the pin width. A detail view of the pin shows a diameter of 0.1 mm and a length of 0.4 mm with a tolerance of $+0.10/-0.05$ mm. A circular feature with the letter "M" is also shown.

Side view of the SOT23-3 package. The overall width is 2.9 mm. The package has a central body and two side pins.

Dimensions are shown in millimeters
Tolerance: x.x $\pm$ 0.2 mm (unless otherwise specified)

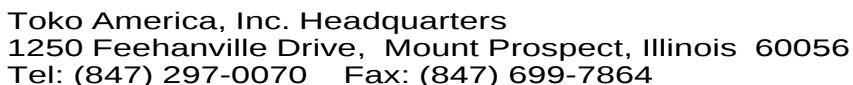
Recommended mounting pad diagram. The diagram shows a central pad with a width of 0.8 mm and a height of 1.0 mm. The distance from the center to the side pins is 0.95 mm. The overall width of the mounting area is 2.4 mm. The text "Recommended Mounting Pad" is written below the diagram.

Side view of the SOT23-3 package. The overall width is 2.8 mm. The package has a central body and two side pins. Dimensions include 1.6 mm for the width of the central body, 1.3 mm max for the height of the central body, 1.1 mm for the height of the side pins, 0.1 mm for the width of the side pins, 0.15 mm for the distance from the center to the side pins, and 0.4 mm for the width of the side pins. A detail view of the pin shows a diameter of 0.1 mm and a length of 0.4 mm with a tolerance of $+0.10/-0.05$ mm.

Marking Information

Product Code

F0 or F05



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