VARIABLE CAPACITANCE DIODE

FEATURES

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

APPLICATIONS

- **FM Electronic Tuning**
- **Voltage Controlled Oscillator**

DESCRIPTION

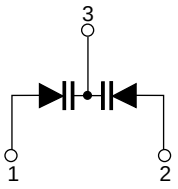
The KV1400 is an 8 volt range variable capacitance diode designed for FM tuner applications. It contains two elements housed in the miniature SOT23-3 surface mount package.

CLASSIFICATION

(Unit: pF)

C \ RANK		1	2	3	4	5
C_2	MIN	69.13	71.08	73.09	75.15	77.27
	MAX	71.23	73.24	75.30	77.43	79.61

KV1400



ORDERING INFORMATION

KV1400 □□

Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left

ABSOLUTE MAXIMUM RATINGS

Reverse Voltage 18V
Forward Current ..... 50 mA
Power Dissipation ..... 100 mW
Storage Temperature Range ..... -55 to +150 °C
Operating Temperature Range ..... -55 to +85 °C
Lead Soldering Temperature (10 s) ..... 235 °C

ELECTRICAL CHARACTERISTICS

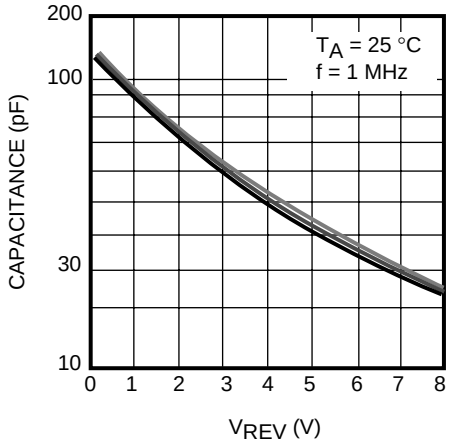
Test conditions: T_A = 25 °C

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{REV}	Reverse Voltage	I_{REV} = 10 µA	17			V
I_{REV}	Reverse Current	V_{REV} = 15.0 V			10	nA
C_2	Diode Capacitance 2	V_{REV} = 2.0 V, f = 1 MHz	69.13	74.37	79.61	pF
C_3	Diode Capacitance 3	V_{REV} = 3.0 V, f = 1 MHz	57.71		64.63	pF
C_6	Diode Capacitance 6	V_{REV} = 6.0 V, f = 1 MHz	33.56		39.18	pF
C_8	Diode Capacitance 8	V_{REV} = 8.0 V, f = 1 MHz	23.38		27.29	pF
R_S	Series Resistance	V_{REV} = 3.0 V, f = 100 MHz		0.3	0.5	Ω
A	Capacitance Ratio	C_3 / C_8	2.10	2.35	2.60	

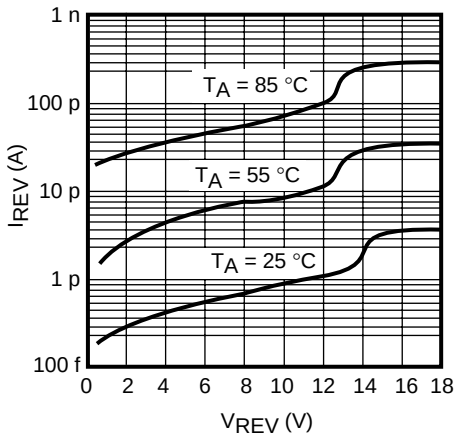
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, ± 5 mVrms).
Note 2: Series Resistance measured with HP 4191A or equivalent instruments.
Note 3: The tolerance of two adjacent parts on a reel is within 3% at C2, C3, C6, and C8.
Note 4: The value of capacitance is the average of 2 back to back type diodes.

TYPICAL PERFORMANCE CHARACTERISTICS

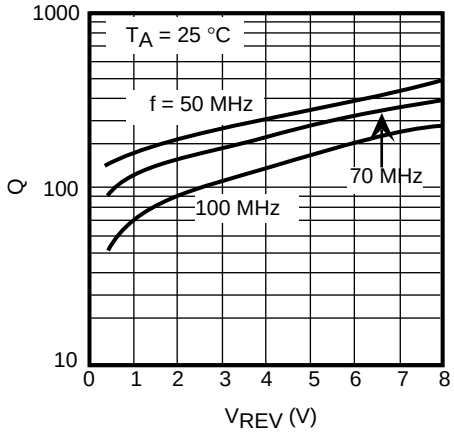
CAPACITANCE vs. REVERSE VOLTAGE



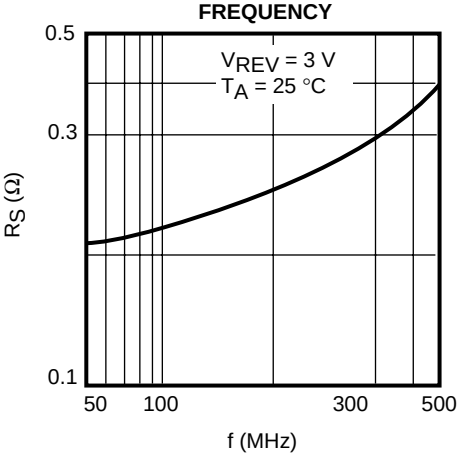
REVERSE CURRENT vs. REVERSE VOLTAGE



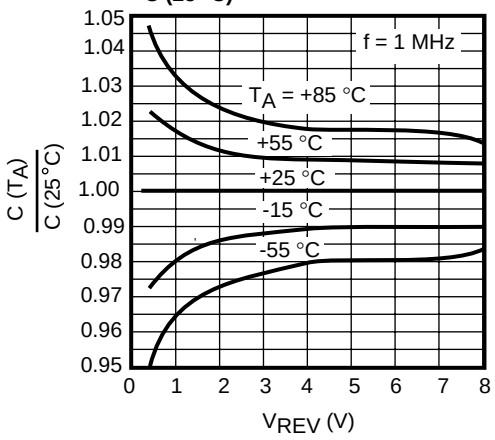
QUALITY FACTOR vs. REVERSE VOLTAGE



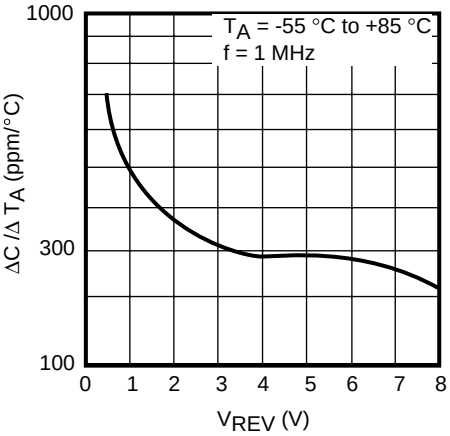
SERIES RESISTANCE vs. FREQUENCY



$\frac{C\ (T_A)}{C\ (25\ °C)}$ vs. REVERSE VOLTAGE

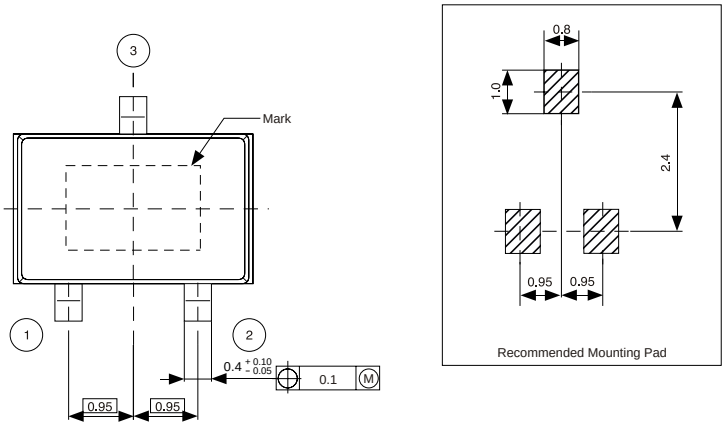


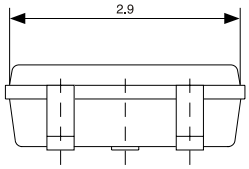
TEMPERATURE COEFFICIENT vs. REVERSE VOLTAGE

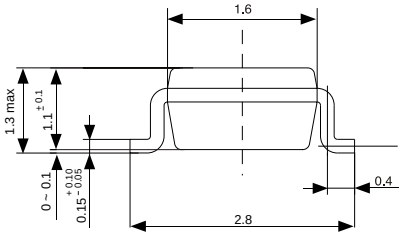


PACKAGE OUTLINE

SOT23-3







Dimensions are shown in millimeters
Tolerance: x.x = ± 0.2 mm (unless otherwise specified)

Marking Information

Product Code	F0

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