VARIABLE CAPACITANCE DIODE

FEATURES

- **Very Low Series Resistance**
- **Excellent Linearity (CV Curve)**
- **Large Capacitance Ratio (A = 1.65 minimum)**
- **Two Diodes in a Miniature Package (SOT23-3)**
- **Very Small Capacitance Deviation at Tape/Reel**

APPLICATIONS

- **FM Radio**
- **Voltage Controlled Oscillator**

DESCRIPTION

The KV1740S is specially made to be used as a tuning element in radio cassettes, stereos, car radios, and other consumer radios.

The KV1740S minimizes cross modulation, allowing good signal-to-noise ratio in the overall design.

The KV1740S is available in the miniature SOT23-3 surface mount package.

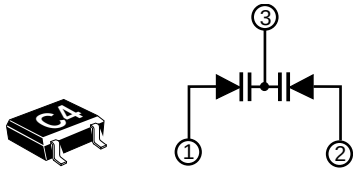
CLASSIFICATION

(Unit: pF)

C \ RANK		1	2	3
C_2	MIN	42.92	44.13	45.37
	MAX	44.58	45.84	47.13

Note: Rank is determined after testing and marked on the reel. All the diodes on a reel have the same rank, but rank can not be specified when ordering.

KV1740S



ORDERING INFORMATION

KV1740S□□

Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left

ABSOLUTE MAXIMUM RATINGS

Reverse Voltage 14V
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

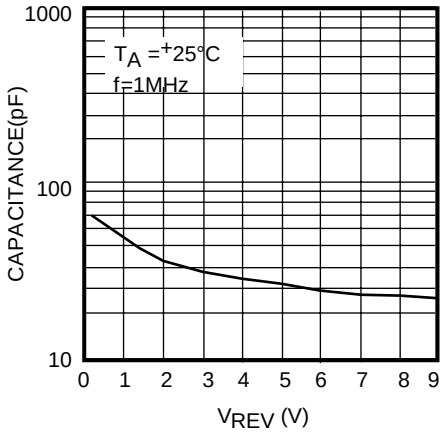
Test conditions: T_A = 25 °C

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{REV}	Reverse Voltage	I_{REV} = 10 µA	12			V
I_{REV}	Reverse Current	V_{REV} = 10 V			10	nA
C_2	Diode Capacitance 2	V_{REV} = 2.0 V, f = 1 MHz	42.92		47.13	pF
C_8	Diode Capacitance 8	V_{REV} = 8.0 V, f = 1 MHz	24.61		28.57	pF
R_S	Series Resistance	V_{REV} = 2.0 V, f = 100 MHz			0.28	Ω
A	Capacitance Ratio	C_2 / C_8	1.65		1.75	

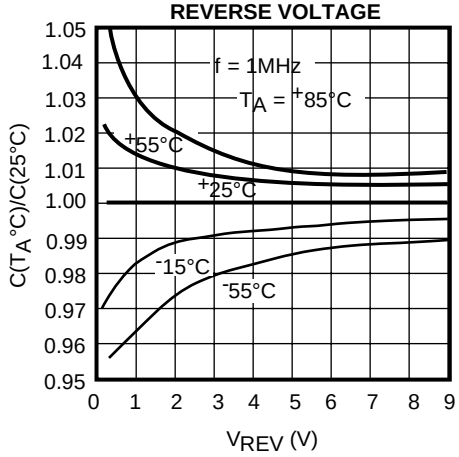
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, ± 5 mVrms).
Note 2: Series Resistance measured with HP 4291B or equivalent instruments.
Note 3: The tolerance of two adjacent parts on a reel is within 3% at C2 and C8.
Note 4: The value of capacitance is the average of 2 back to back type diodes.

TYPICAL PERFORMANCE CHARACTERISTICS

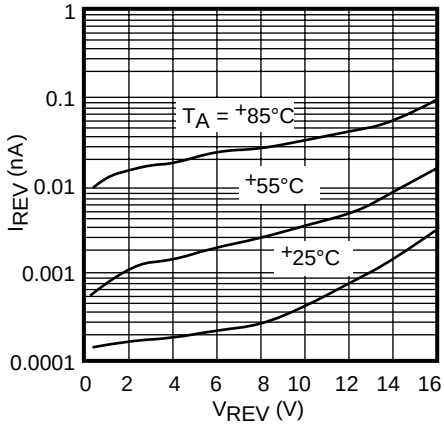
CAPACITANCE vs. REVERSE VOLTAGE



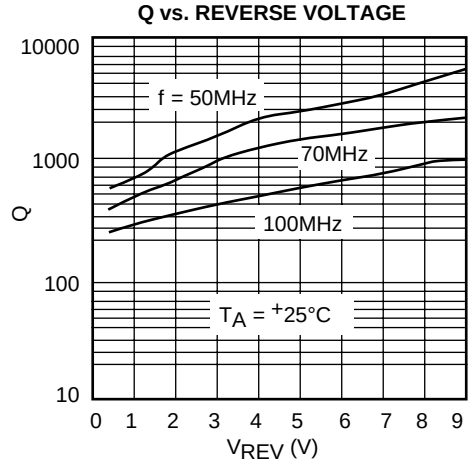
C(T_A°C)/C(25°C) vs. REVERSE VOLTAGE



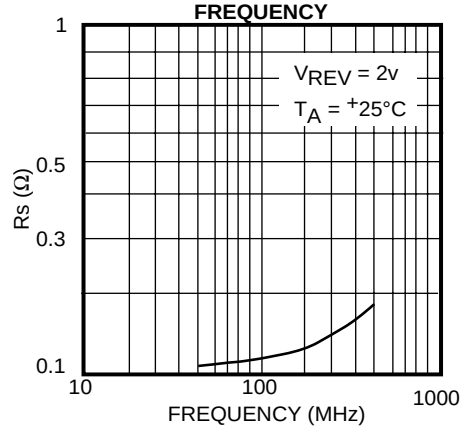
REVERSE CURRENT vs. REVERSE VOLTAGE



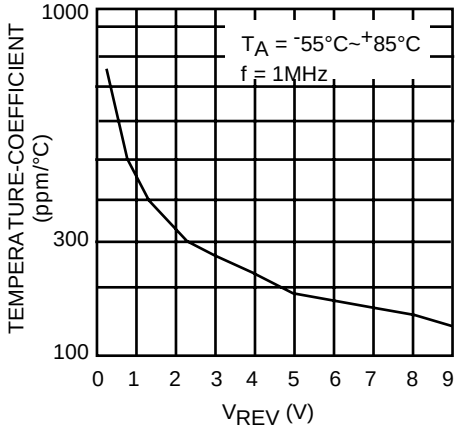
Q vs. REVERSE VOLTAGE



SERIES RESISTANCE vs. FREQUENCY

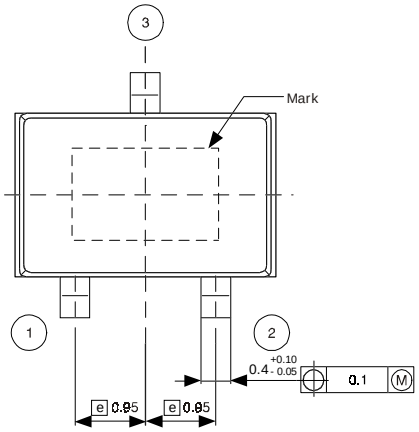


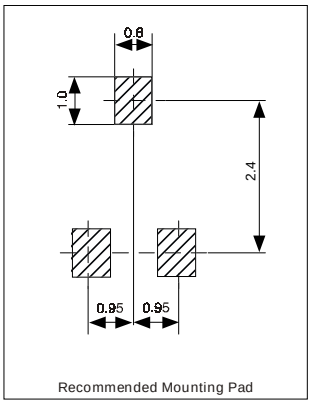
TEMPERATURE-COEFFICIENT vs. REVERSE VOLTAGE

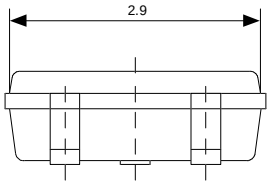


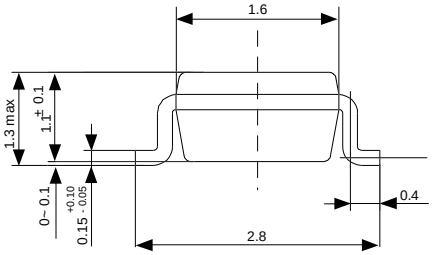
PACKAGE OUTLINE

SOT23-3









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

Marking Information

Product Code	C4

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