

VARIABLE CAPACITANCE DIODE

FEATURES

- Suitable for World Wide Band (76 to 108 MHz)
- Excellent Linearity (CV Curve)
- Large Capacitance Ratio ($A = 3.30$ minimum) with Very Low Series Resistance
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel
- Very High Q

APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator

DESCRIPTION

The KV1735S is a 9 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
C ₂	MIN	68.86	70.81	72.80	74.85
	MAX	71.52	73.53	75.61	77.74

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.

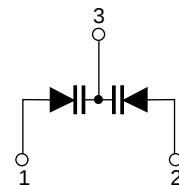
ORDERING INFORMATION

KV1735S□□

Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left

KV1735S



KV1735S

ABSOLUTE MAXIMUM RATINGS

Reverse Voltage 16 V
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: $T_A = 25\text{ °C}$

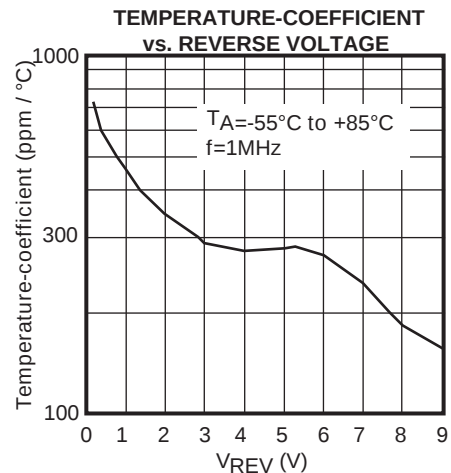
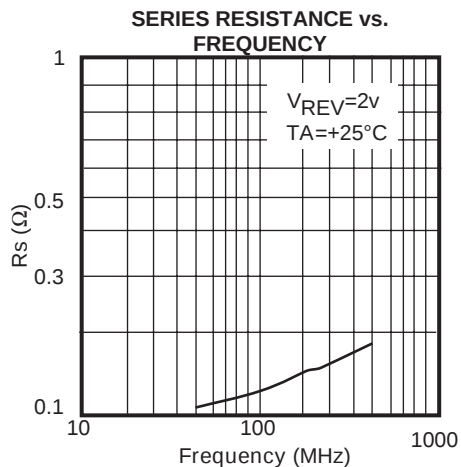
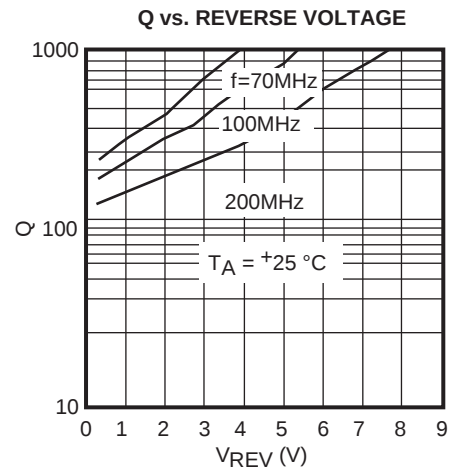
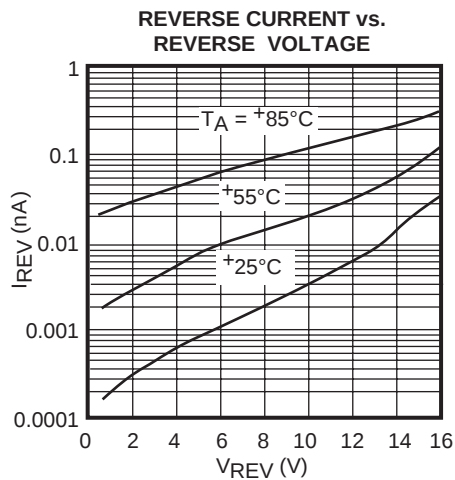
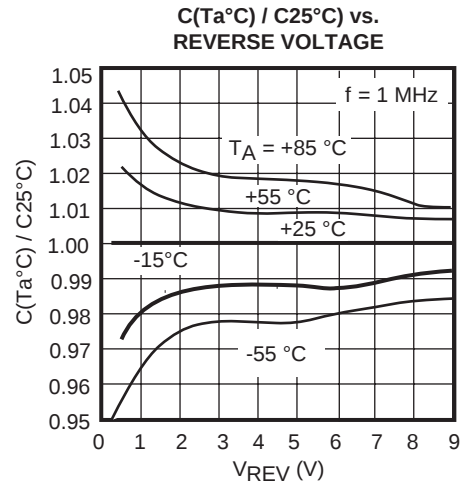
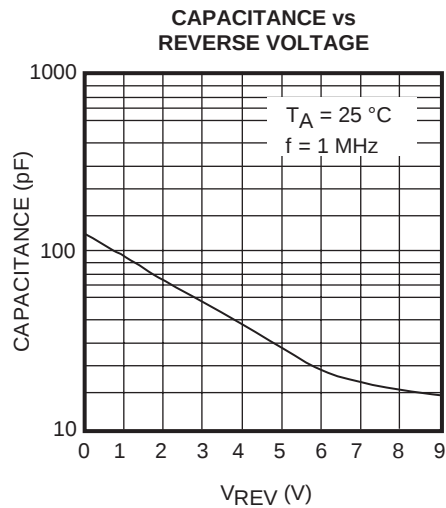
SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{REV}	Reverse Voltage	$I_{REV} = 10\text{ }\mu\text{A}$	12			V
I_{REV}	Reverse Current	$V_{REV} = 10.0\text{ V}$			10	nA
C_2	Diode Capacitance 2	$V_{REV} = 2.0\text{ V}$, $f = 1\text{ MHz}$	68.86		77.74	pF
C_6	Diode Capacitance 6	$V_{REV} = 6.0\text{ V}$, $f = 1\text{ MHz}$	26.39		36.69	pF
C_9	Diode Capacitance 9	$V_{REV} = 9.0\text{ V}$, $f = 1\text{ MHz}$	16.91		22.25	pF
R_S	Series Resistance	$V_{REV} = 2.0\text{ V}$, $f = 100\text{ MHz}$			0.30	Ω
A	Capacitance Ratio	C_2 / C_9	3.30		4.60	

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: The value of capacitance is the average of 2 back to back type diodes.

TYPICAL PERFORMANCE CHARACTERISTICS



SOT23-3

Marking Information

Product Code

C35

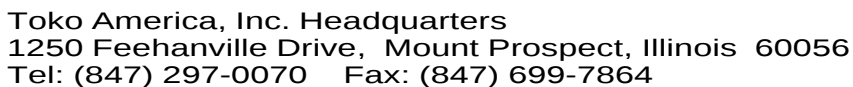
Top view of the SOT23-3 package. The package is rectangular with a central dashed rectangle labeled "Mark". Three pins are shown: Pin 1 (bottom left), Pin 2 (bottom right), and Pin 3 (top center). Dimensions include a pin pitch of $e \pm 0.05$ mm and a pin width of 0.4 ± 0.05 mm. A circular feature with a diameter of 0.1 ± 0.10 mm is also indicated.

Recommended Mounting Pad diagram showing dimensions for the pad. The pad is rectangular with a width of 0.8 ± 0.1 mm and a height of 1.0 ± 0.1 mm. The distance between the pads is 2.4 ± 0.1 mm. The distance from the pad center to the edge is 0.95 ± 0.05 mm.

Side view of the SOT23-3 package showing a width of 2.9 ± 0.1 mm.

Cross-sectional view of the SOT23-3 package showing dimensions: a total height of 1.3 ± 0.1 mm, a base thickness of 0.15 ± 0.05 mm, a top thickness of 0.1 ± 0.1 mm, a base width of 1.6 ± 0.1 mm, a total width of 2.8 ± 0.1 mm, and a side flange width of 0.4 ± 0.1 mm.

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



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