

VARIABLE CAPACITANCE DIODE

FEATURES

- Very Low Operating Voltage (1 to 4.5 V)
- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A1 = 5.0 minimum)
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator

DESCRIPTION

The KV1770S is a 5 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)

RANK		1	2	3
C ₁	MIN	65.80	68.27	70.74
	MAX	69.25	71.72	74.20

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.

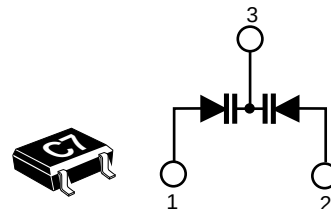
ORDERING INFORMATION

KV1770S□□

Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left

KV1770S



KV1770S

ABSOLUTE MAXIMUM RATINGS

Reverse Voltage 18 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	$I_{REV} = 10\text{ }\mu\text{A}$	16			V
I_{REV}	Reverse Current	$V_{REV} = 10.0\text{ V}$			50	nA
C_1	Diode Capacitance 1	$V_{REV} = 1.0\text{ V}$, $f = 1\text{ MHz}$	65.80	70.00	74.20	pF
$C_{4.5}$	Diode Capacitance 4.5	$V_{REV} = 4.5\text{ V}$, $f = 1\text{ MHz}$	12.00	13.40	14.80	pF
R_S	Series Resistance	$V_{REV} = 1.5\text{ V}$, $f = 100\text{ MHz}$		0.43	0.5	Ω
A	Capacitance Ratio	C_1 / C_5	5.0			

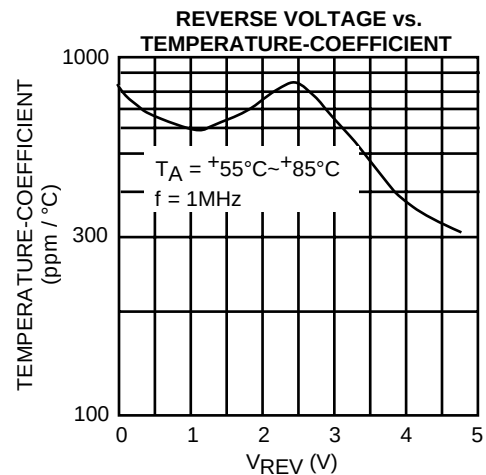
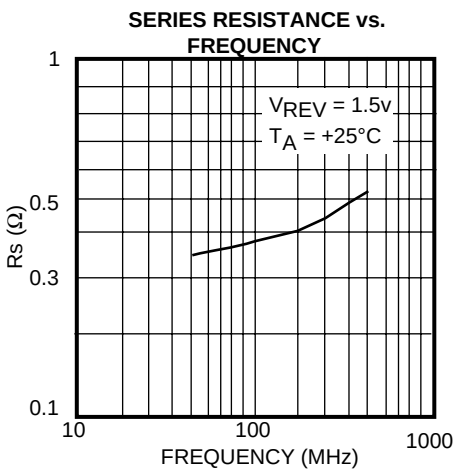
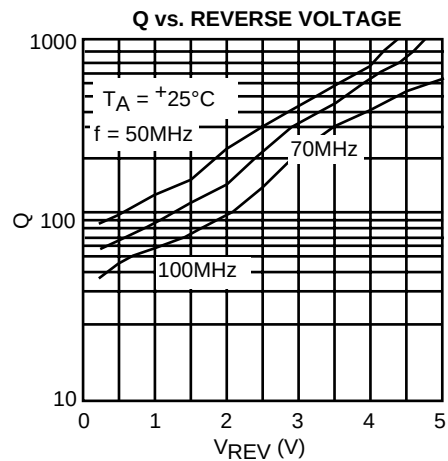
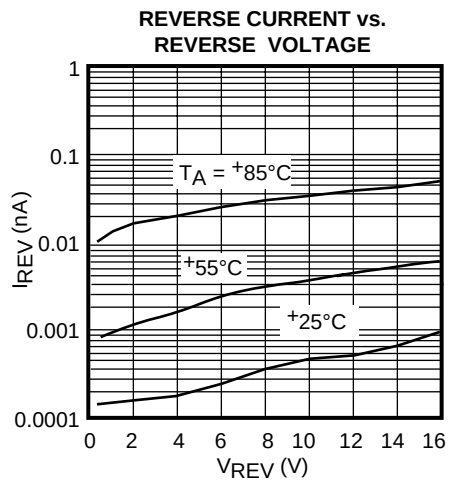
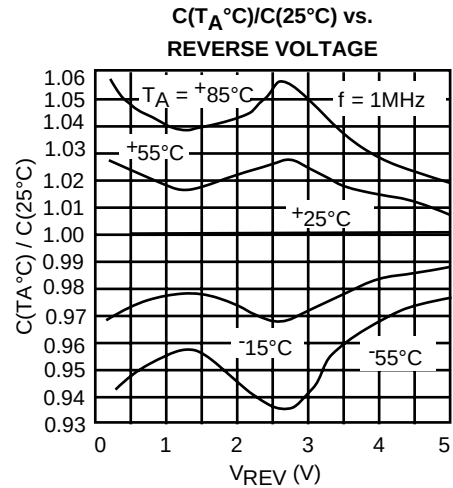
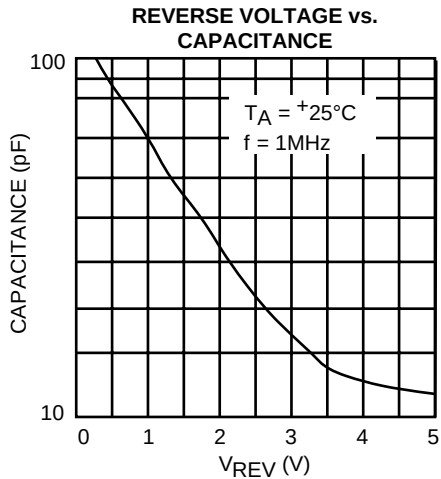
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, $\pm 5\text{ mVrms}$).

Note 2: Series Resistance measured with HP 4291B or equivalent instruments.

Note 3: The tolerance of two adjacent parts on a reel is within 6% at C1, C3 and C4.5.

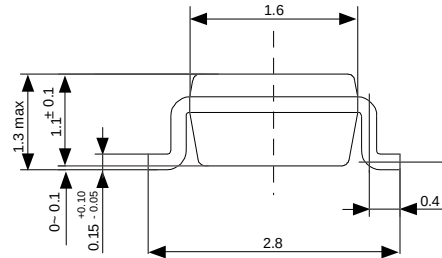
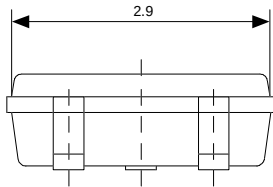
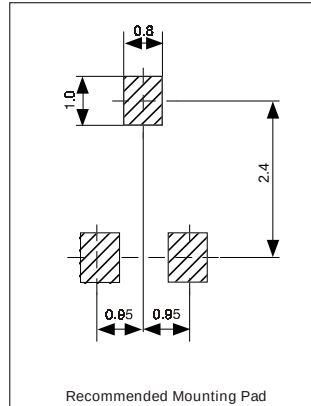
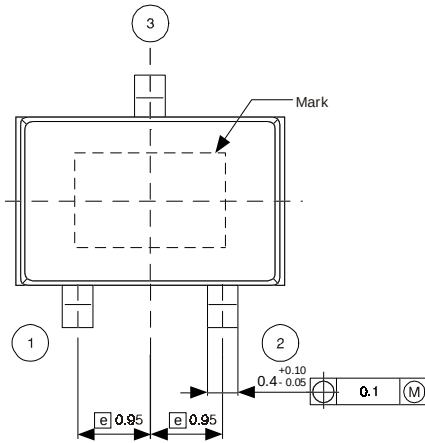
Note 4: The value of capacitance is the average of 2 back to back type diodes.

TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE

SOT23-3



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

Marking Information

Product Code C7



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