

## 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

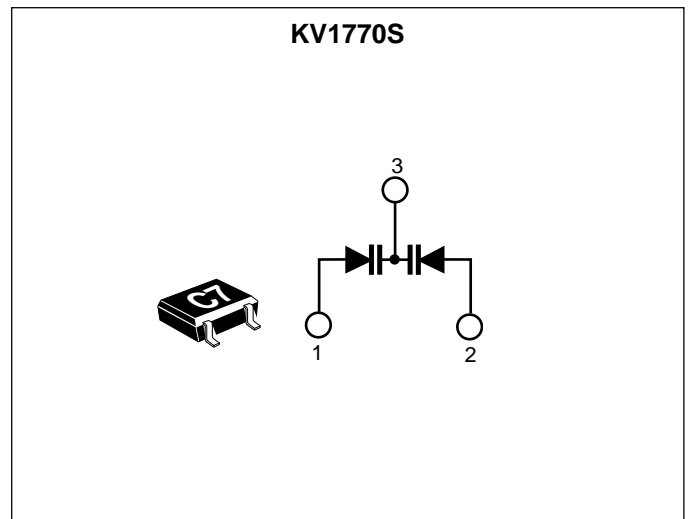
The KV1770S is a 5 volt range variable capacitance diode designed for FM tuner applications. It contains two elements housed in the miniature SOT23-3 surface mount package.

### CLASSIFICATION

(Unit: pF)

C		RANK		
		1	2	3
C <sub>1</sub>	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

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## ABSOLUTE MAXIMUM RATINGS

Reverse Voltage ..... 18 V      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	$I_{REV} = 10\ \mu\text{A}$	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	$\Omega$
A	Capacitance Ratio	$C_1 / C_5$	5.0			

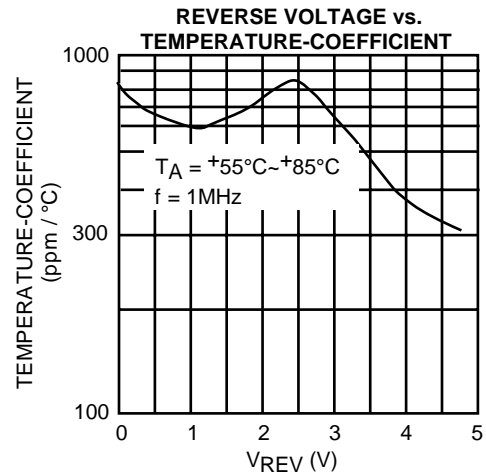
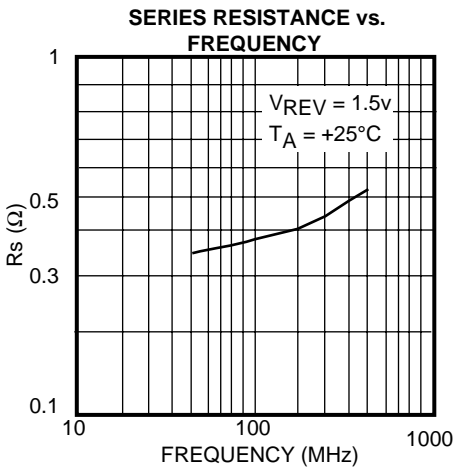
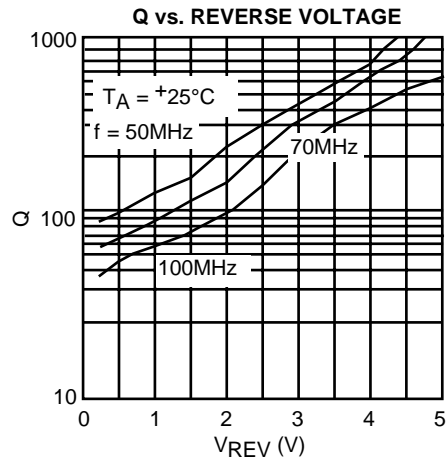
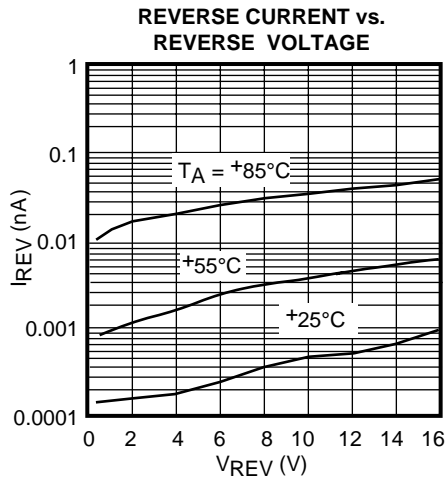
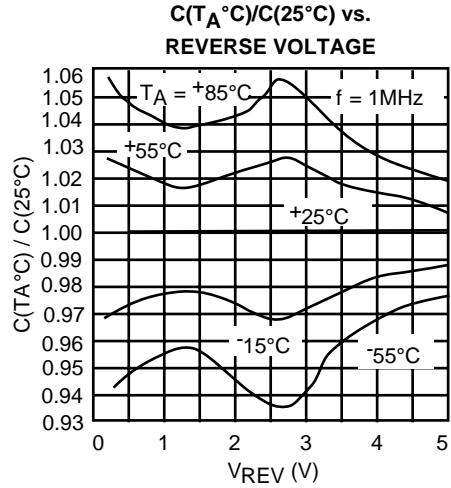
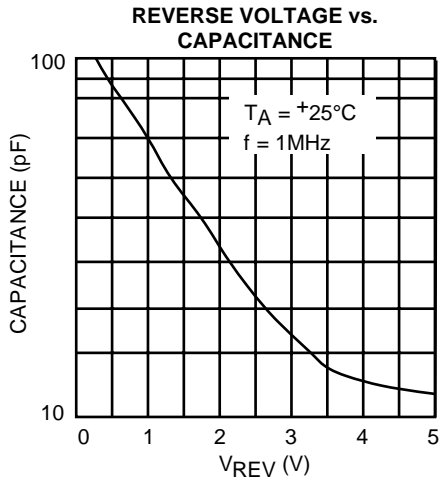
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms,  $\pm 5\ \text{mVrms}$ ).

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

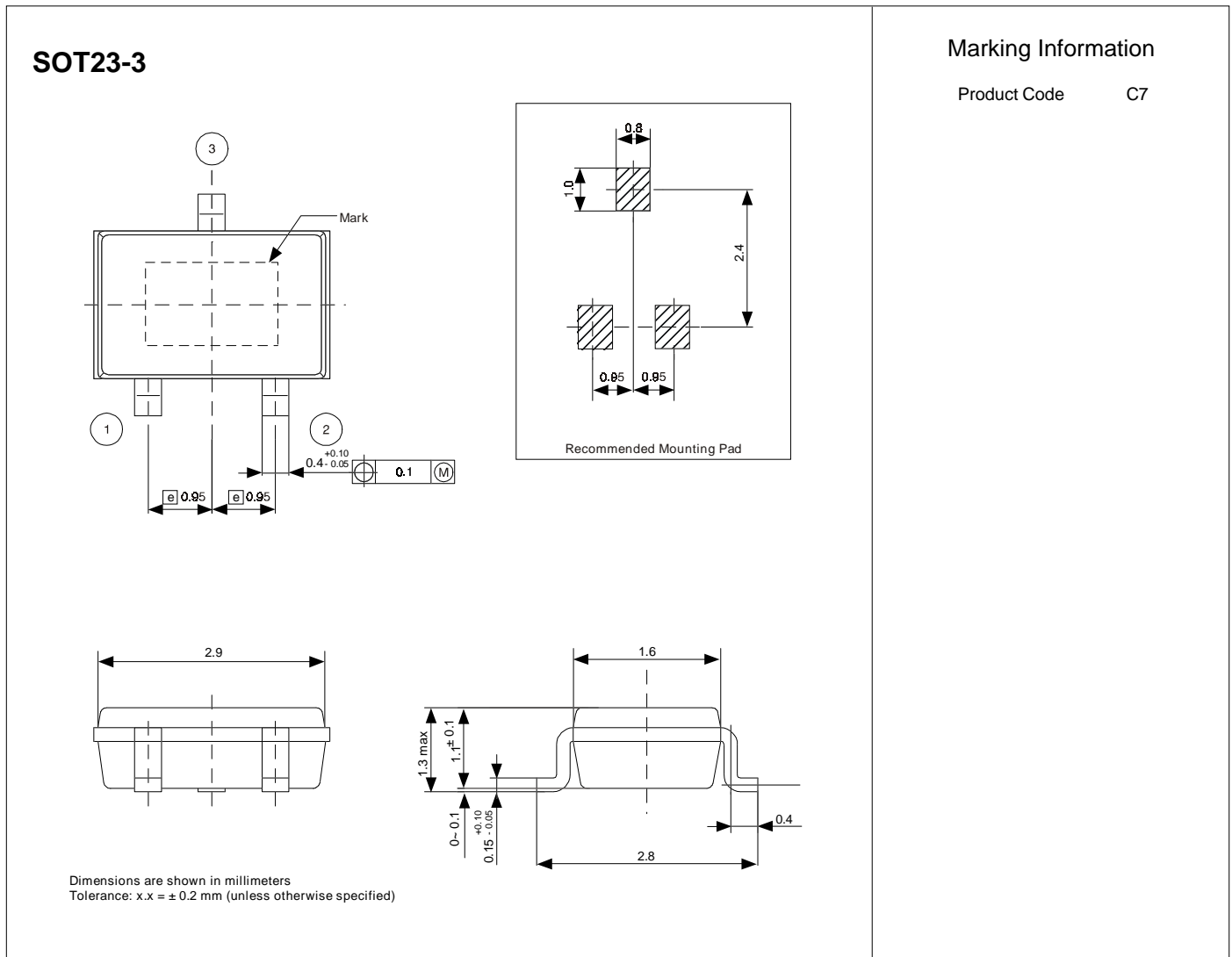
Note 3: The tolerance of two adjacent parts on a reel is within 6% at C1, C3 and C4.5.

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

TYPICAL PERFORMANCE CHARACTERISTICS



## PACKAGE OUTLINE



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