

VARIABLE CAPACITANCE DIODE

FEATURES

- Low Voltage Operation
- Very Large Capacitance Ratio
- 2 Back-to-back Elements in a Miniature Surface Mount Package
- Rank Classification Available
- Low Series Resistance
- Excellent Linearity of C-V Curve

APPLICATIONS

- Portable Equipment VCO Circuits
- Base Station VCO Circuits
- Other VCO, VCXO
- FM Radios

DESCRIPTION

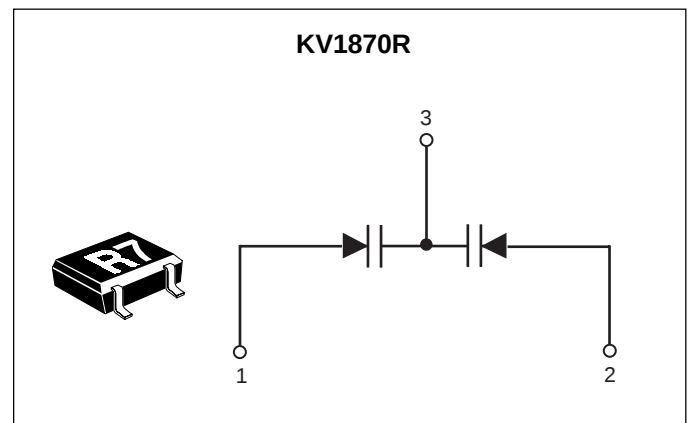
The KV1870R is a variable capacitance diode which contains 2 elements with a common cathode connection in a 3 pin surface mount package. The KV1870R is housed in the small SOT23C-3 package.

CLASSIFICATION

(Unit: pF)

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

Note: Classify by averaging the value of two elements.



ORDERING INFORMATION

KV1870R□□

Tape/Reel Code

TAPE/REEL CODE
TR: Tape Right
Reel Size = 3000 pcs.

KV1870R

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

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	$V_{REV} = 10\text{ V}$			50	nA
C_1	Diode Capacitance 1	$V_{REV} = 1\text{ V}$, $f = 1\text{ MHz}$	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	0.50	Ω
A	Capacitance Ratio	C_1 / C_5	5.00			

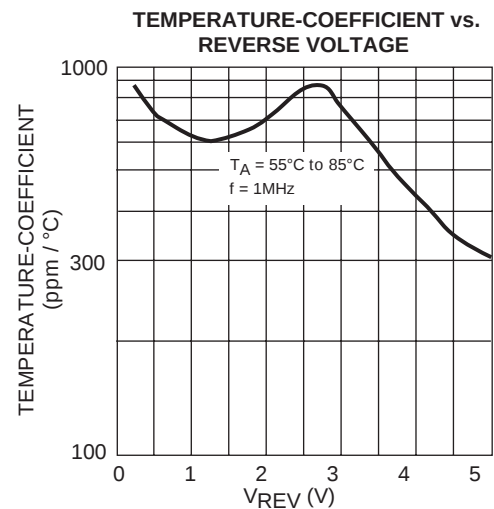
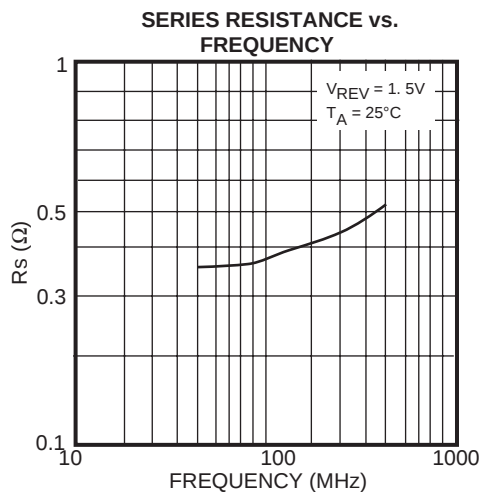
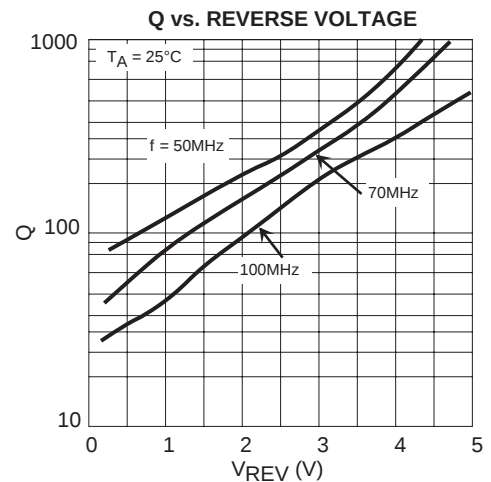
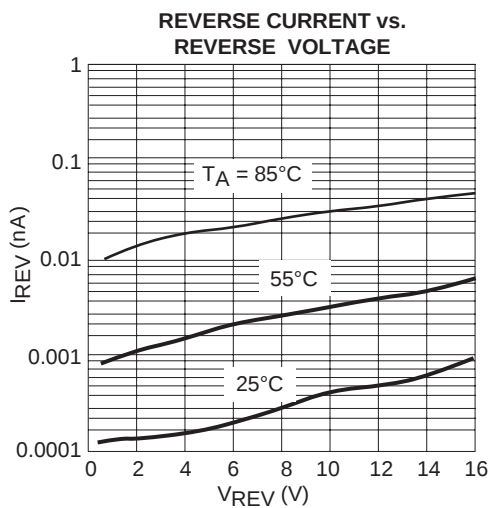
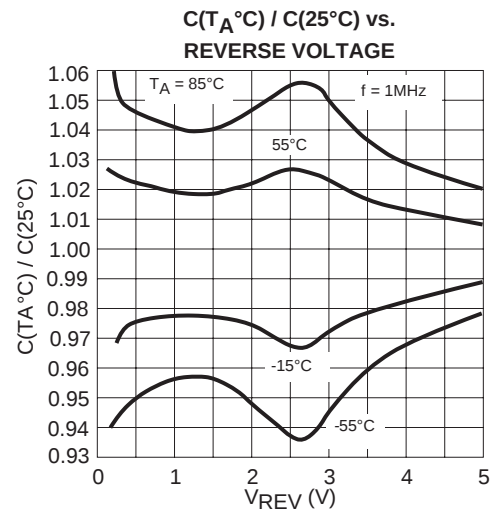
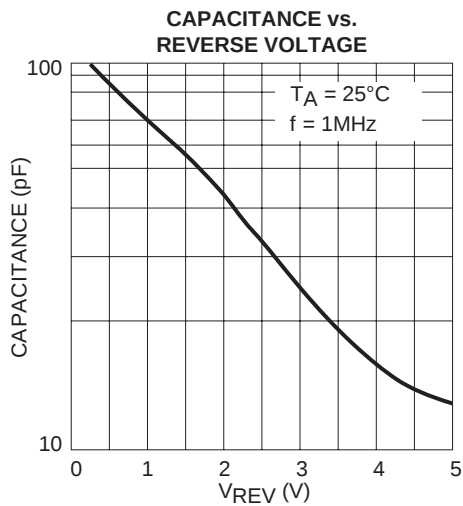
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, $\pm 5\text{ mVrms}$).

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

Note 3: The value of capacitance is the average of 2 back to back type diodes.

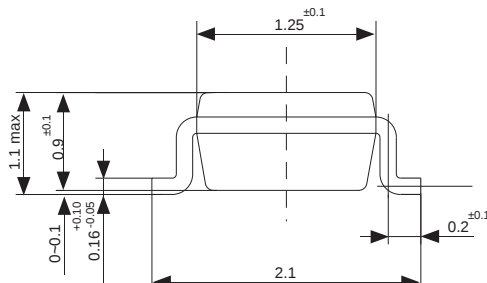
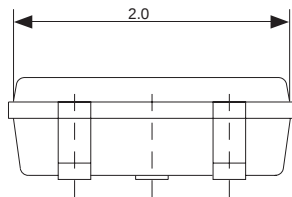
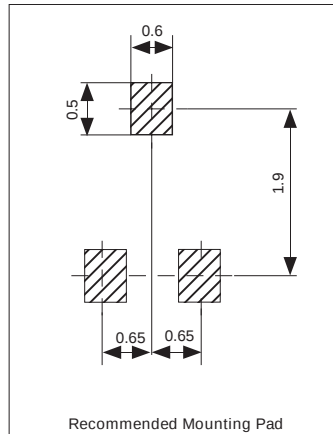
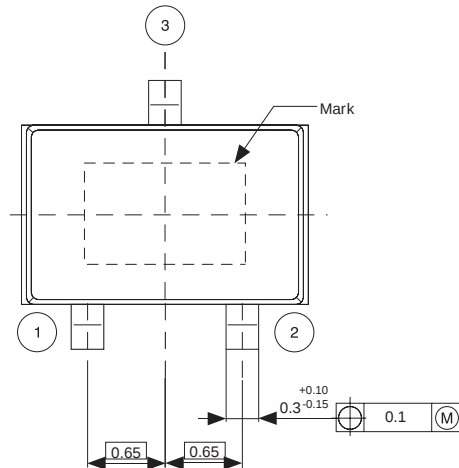
	Symbol	Anode Pin	Cathode Pin
Diode 1	D_1	①	③
Diode 2	D_2	②	③

TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE

SOT23C-3



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

Marking Information

Product Code R7



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