

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 KV1470 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

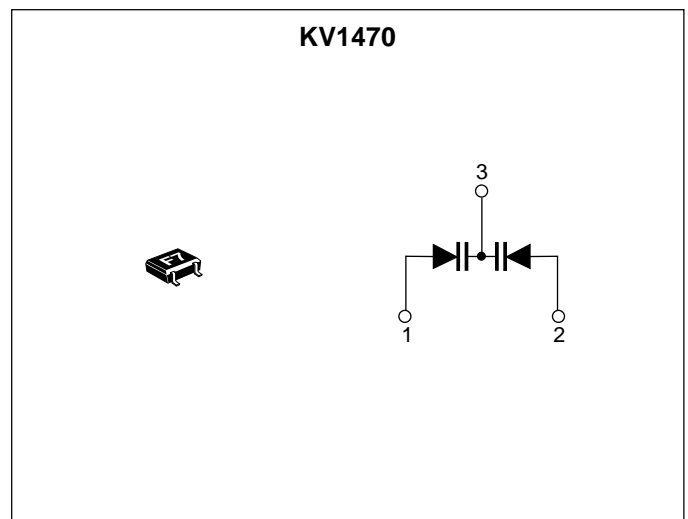
(Unit: pF)

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

ORDERING INFORMATION

KV1470 
 Tape/Reel Code

TAPE/REEL CODE
 TL: Tape Left



KV1470

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

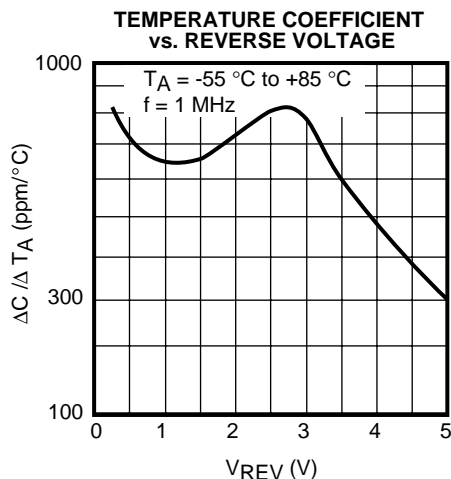
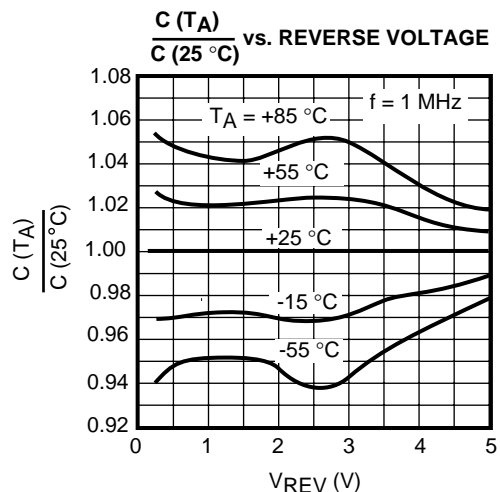
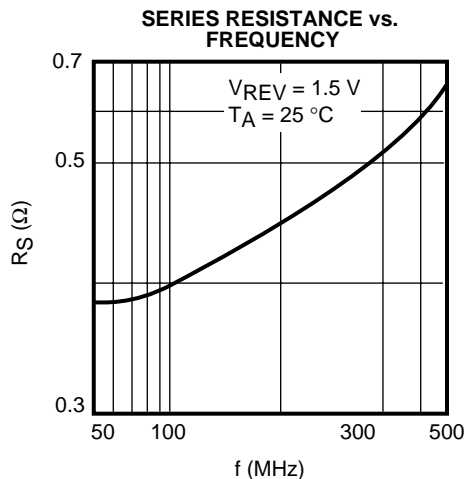
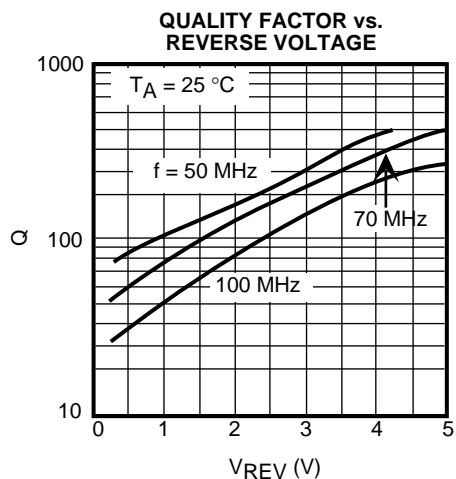
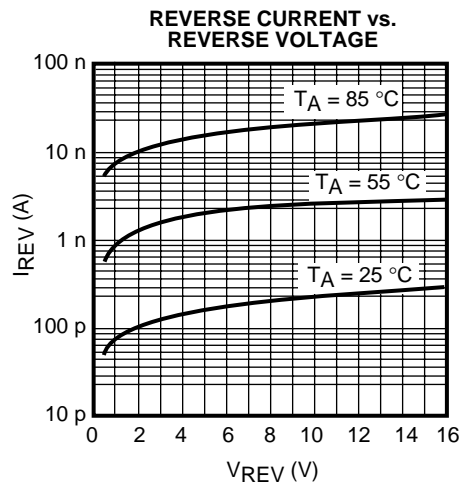
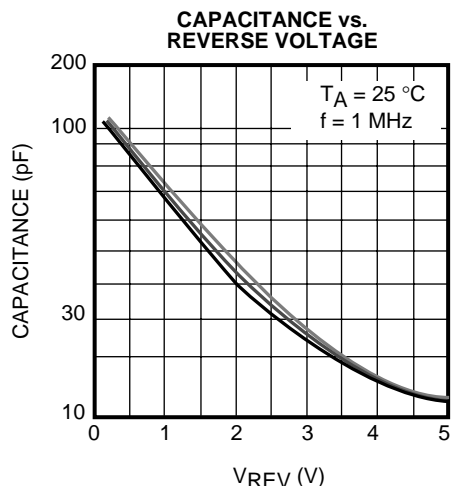
Test conditions: $T_A = 25\text{ °C}$

| 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 | Ω |
| A | Capacitance Ratio | C_1 / C_5 | 5.0 | | | |

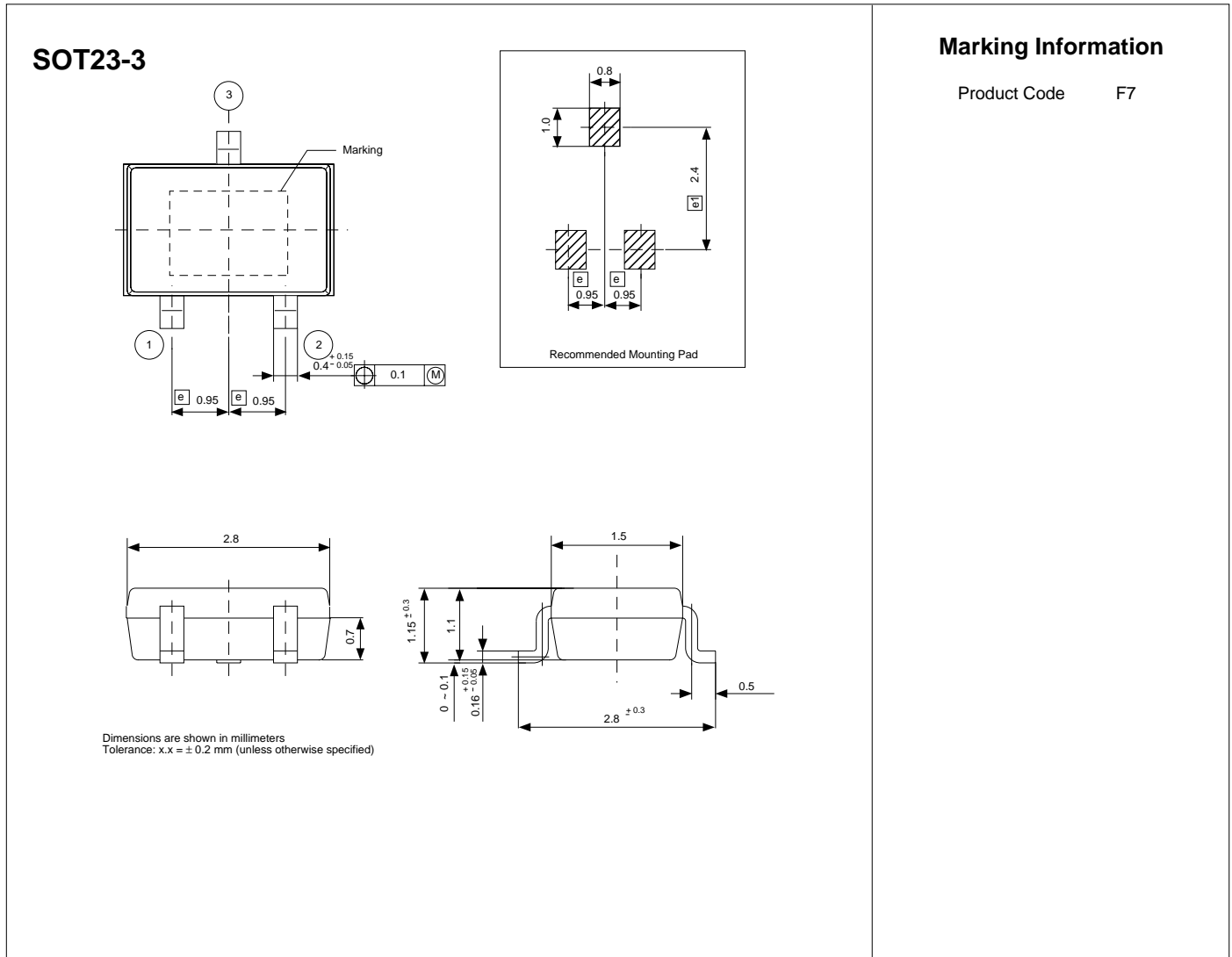
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, $\pm 5\ \text{mVrms}$).

Note 2: Series Resistance measured with HP 4191A or equivalent instruments.

TYPICAL PERFORMANCE CHARACTERISTICS



PACKAGE OUTLINE



Marking Information

Product Code F7



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