

VARIABLE CAPACITANCE DIODE

FEATURES

- Excellent Linearity (CV Curve)
- Large Capacitance Ratio ($A = 2.00$ minimum) with Very Low Series Resistance
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

DESCRIPTION

The KV1410 is specially made to be used as a tuning element in radio cassettes, stereos, car radios, and other consumer radios.

The KV1410 minimizes cross modulation, allowing good signal-to-noise ratio in the overall design.


The KV1410 is available in the miniature SOT23-3 surface mount package.

CLASSIFICATION

(Unit: pF)

| C | | RANK | | | |
|----------------|-----|-------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| C ₂ | MIN | 41.33 | 42.49 | 43.69 | 44.92 |
| | MAX | 42.59 | 43.79 | 45.02 | 46.29 |

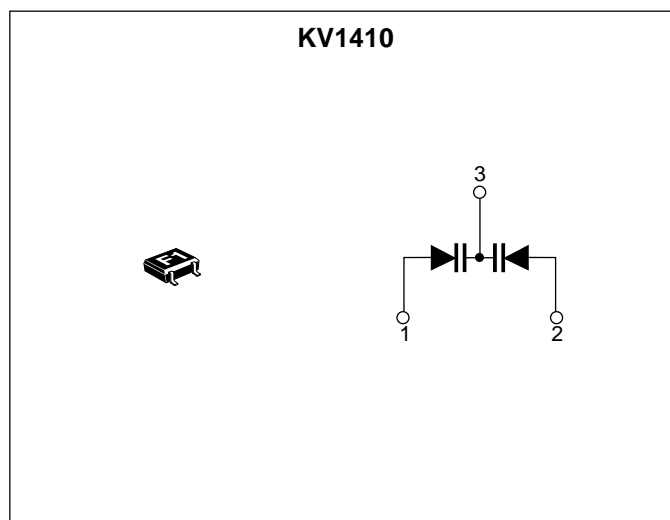
ORDERING INFORMATION

KV1410 
 └─── Tape/Reel Code

TAPE/REEL CODE
 TL: Tape Left

APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator



KV1410

ABSOLUTE MAXIMUM RATINGS

| | | | |
|-------------------------|--------|---|----------------|
| Reverse Voltage | 18V | 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 CHARACTERISTICSTest conditions: $T_A = 25\text{ °C}$

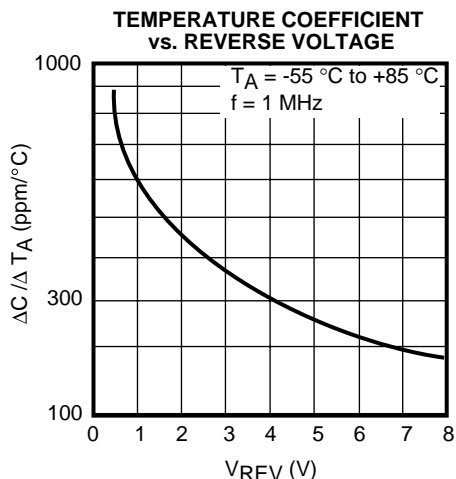
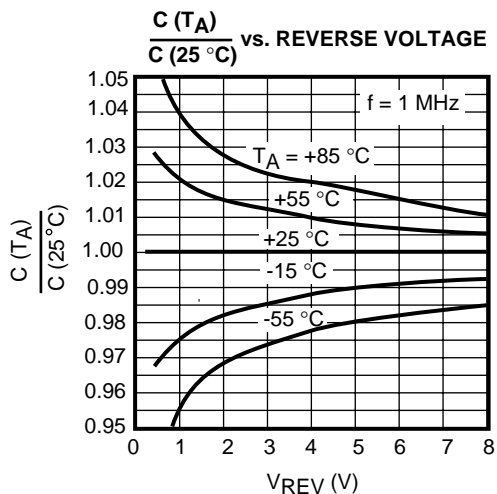
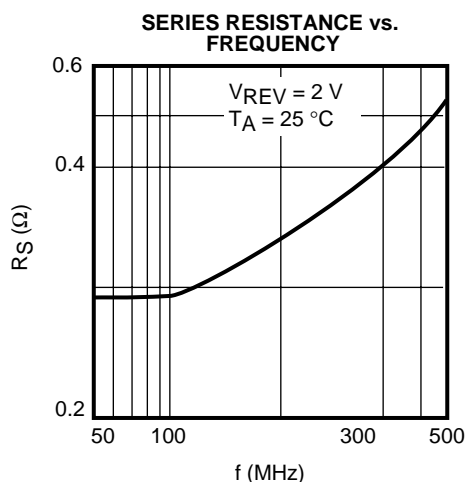
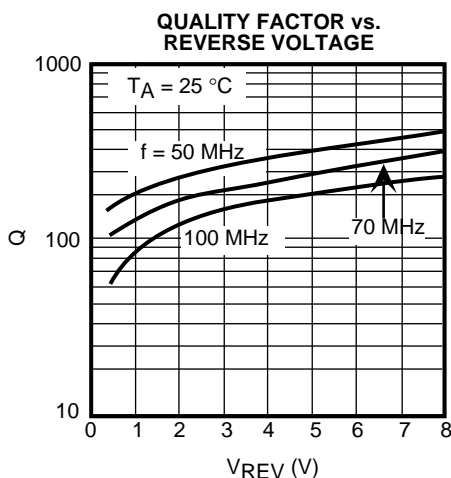
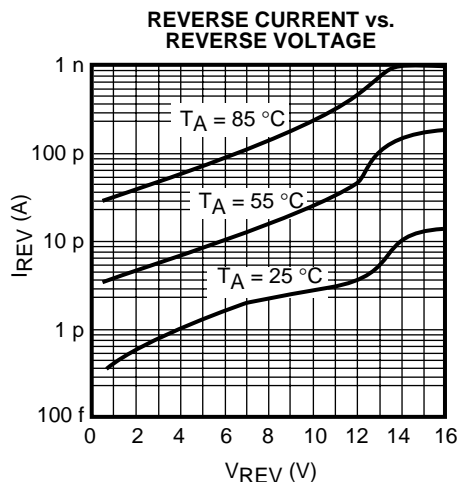
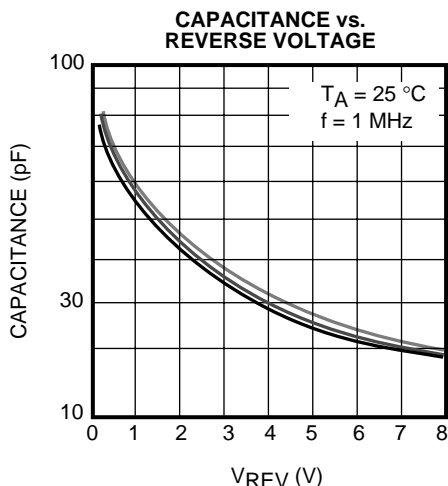
| SYMBOL | PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-----------|---------------------|---|-------|-----|-------|----------|
| V_{REV} | Reverse Voltage | $I_{REV} = 10\ \mu\text{A}$ | 16 | | | V |
| I_{REV} | Reverse Current | $V_{REV} = 10\ \text{V}$ | | | 100 | nA |
| C_2 | Diode Capacitance 2 | $V_{REV} = 2.0\ \text{V}, f = 1\ \text{MHz}$ | 41.33 | | 46.29 | pF |
| C_4 | Diode Capacitance 4 | $V_{REV} = 4.0\ \text{V}, f = 1\ \text{MHz}$ | 26.46 | | 35.06 | pF |
| C_6 | Diode Capacitance 6 | $V_{REV} = 6.0\ \text{V}, f = 1\ \text{MHz}$ | 19.24 | | 25.46 | pF |
| C_8 | Diode Capacitance 8 | $V_{REV} = 8.0\ \text{V}, f = 1\ \text{MHz}$ | 16.05 | | 21.25 | pF |
| R_S | Series Resistance | $V_{REV} = 2.0\ \text{V}, f = 70\ \text{MHz}$ | | | 0.5 | Ω |
| A | Capacitance Ratio | C_2 / C_8 | 2.00 | | 2.60 | |

Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, ± 5 mVrms).

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

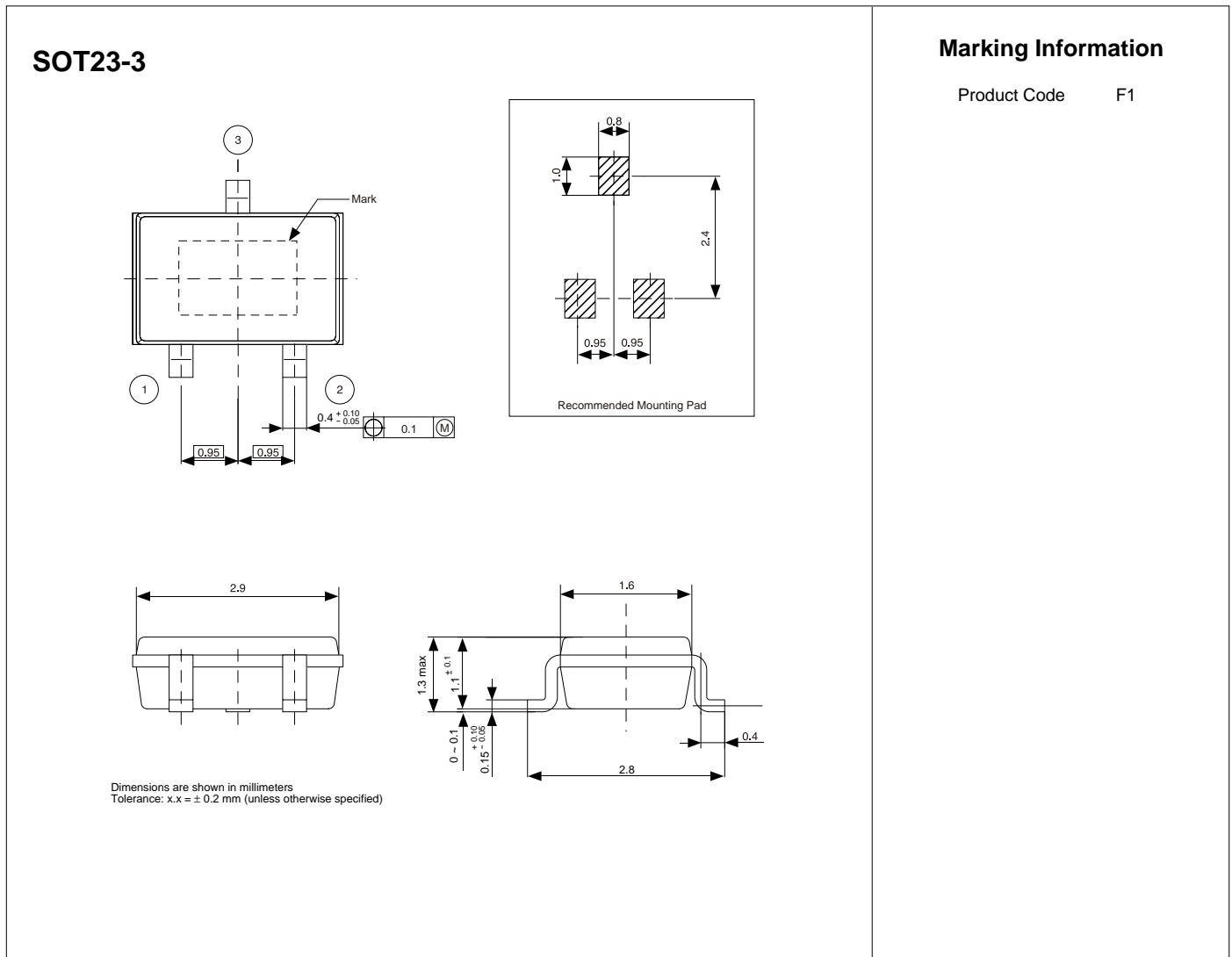
Note 3: The tolerance of two adjacent parts on a reel is within 3% at C2, C4, C6, and C8.

TYPICAL PERFORMANCE CHARACTERISTICS



KV1410

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