

VARIABLE CAPACITANCE DIODE

FEATURES

- Excellent Linearity (CV Curve)
- Large Capacitance Ratio (A = 3.70 minimum) with Very Low Series Resistance
- Two Diodes in a Miniature Package (SOT23-3)
- Very Small Capacitance Deviation at Tape/Reel

APPLICATIONS

- FM Radio
- Voltage Controlled Oscillator

DESCRIPTION

The KV1430 variable capacitance diode was specially made to be used as tuning elements in car radios, radio cassettes, stereos, and other consumer radios. The KV1430 is suitable for wide band tuning from 76 to 108 MHz.

If the KV1430 is used only for FM reception, it is possible to operate it at 4.5 V so it is very useful in lowering the power demands of the set.


The KV1430 is available in a miniature SOT23-3 package.

CLASSIFICATION

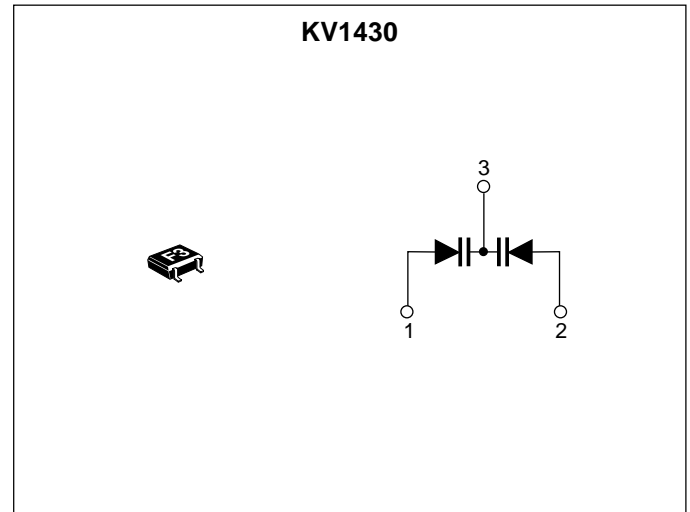
(Unit: pF)

| C | | RANK | | | |
|----------------|-----|-------|-------|-------|-------|
| | | 2 | 3 | 4 | 5 |
| C ₂ | MIN | 69.14 | 71.09 | 73.09 | 75.15 |
| | MAX | 71.23 | 73.24 | 75.31 | 77.43 |

ORDERING INFORMATION

KV1430  Tape/Reel Code

TAPE/REEL CODE
TL: Tape Left



KV1430

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 | $V_{REV} = 10.0\ \text{V}$ | | | 100 | nA |
| C_2 | Diode Capacitance 2 | $V_{REV} = 2.0\ \text{V}, f = 1\ \text{MHz}$ | 69.14 | | 77.43 | pF |
| C_4 | Diode Capacitance 4 | $V_{REV} = 4.0\ \text{V}, f = 1\ \text{MHz}$ | 43.09 | | 56.24 | pF |
| C_6 | Diode Capacitance 6 | $V_{REV} = 6.0\ \text{V}, f = 1\ \text{MHz}$ | 25.05 | | 34.57 | pF |
| C_9 | Diode Capacitance 9 | $V_{REV} = 9.0\ \text{V}, f = 1\ \text{MHz}$ | 15.44 | | 20.10 | pF |
| R_S | Series Resistance | $V_{REV} = 2.0\ \text{V}, f = 70\ \text{MHz}$ | | | 0.5 | Ω |
| A | Capacitance Ratio | C_2 / C_9 | 3.70 | | 5.00 | |

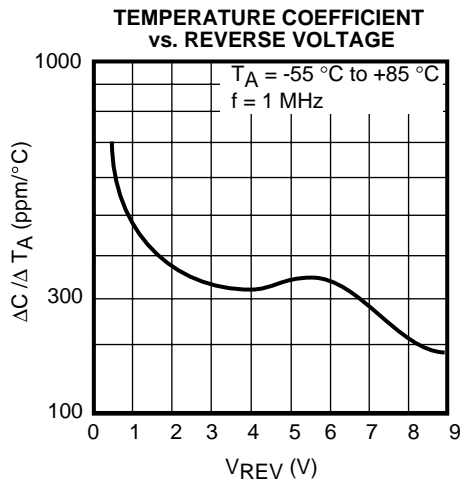
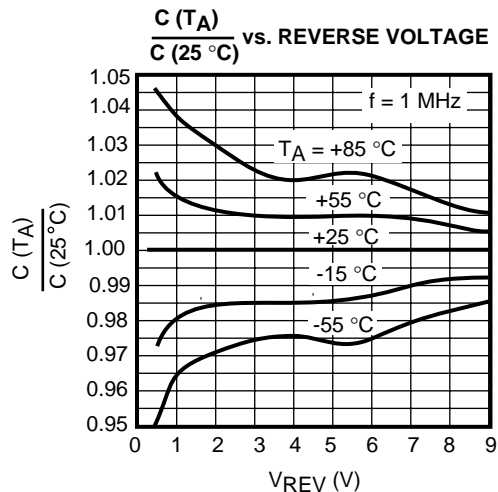
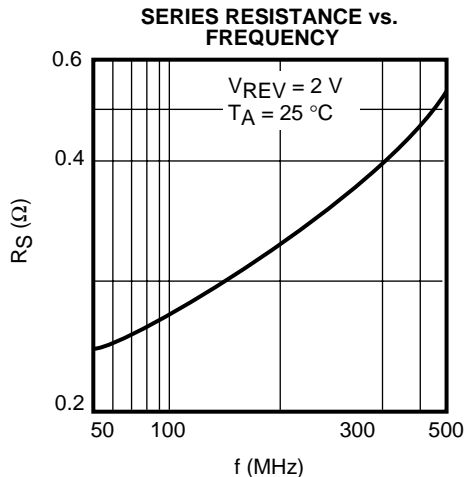
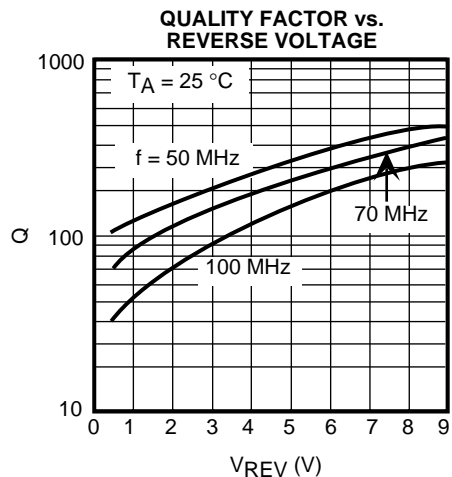
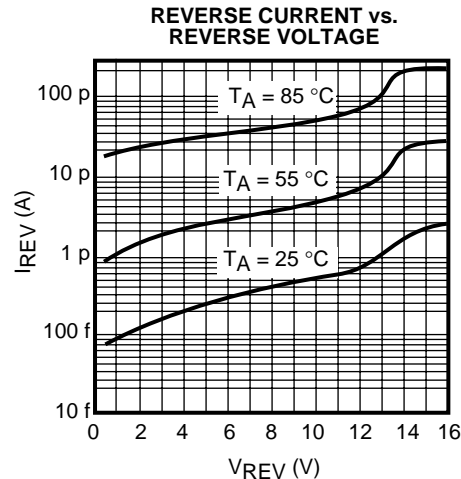
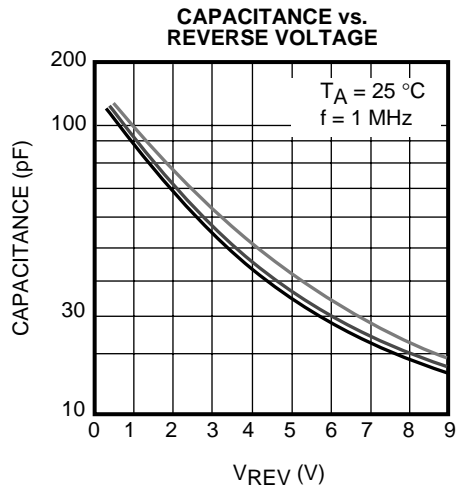
Note 1: Diode Capacitance measured with HP 4279A or equivalent instruments (at OSC level 20 mVrms, ± 5 mVrms).

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

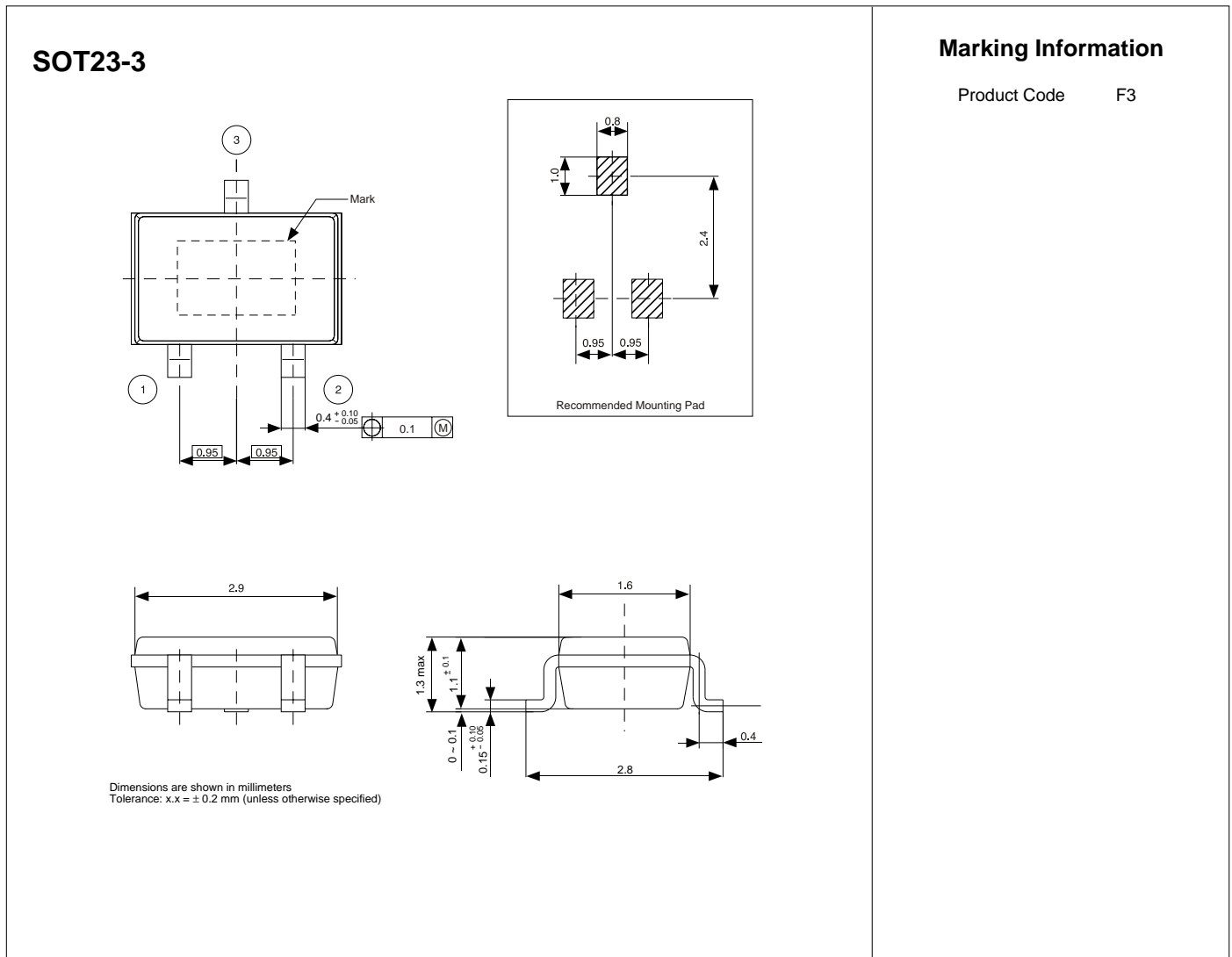
Note 3: The tolerance of two adjacent parts on a reel is within 3% at C2, C4, C6, and C9.

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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