

DESCRIPTION

The GC1200 - 23 series varactors are silicon abrupt junction devices. They provide the highest Q and lowest series resistance available in a 30 volt silicon device. They are ideal for narrow to moderate frequency bandwidth applications, and are available in values suitable for HF through 1500 MHz. The economical SOT23 package is ideal for commercial surface mount construction and is available in single (23-0) and common cathode (23 - 4) configurations. Some limitations apply, consult factory for availability.

This series of diodes meets RoHS requirements per EU Directive 2002/95/EC. Consult the factory for details. The GCX1200 – 23 series of SOT23 devices supersede the GC1200 – 23 series.

APPLICATIONS

The GC1200 series varactors are used for narrow to moderate bandwidth tuning. They are available in values appropriate for HF through 1.5GHz frequencies. These devices are best used in low phase noise voltage controlled oscillators, low loss voltage variable filters and phase shifters.

Standard capacitance tolerance is $\pm 10\%$. Consult table below for standard configurations.

**ABSOLUTE MAXIMUM RATINGS AT 25° C
(UNLESS OTHERWISE SPECIFIED)**

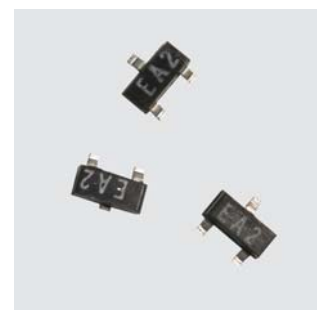
| Rating | Symbol | Value | Unit |
|---|-----------|-----------------------------|---------|
| Maximum Working Voltage | V_R | 30 | V |
| Maximum Leakage Current @25 Volts | I_R | 0.02 @ 25 °C 2.0 @125 °C | μ A |
| Thermal Coefficient of Capacitance @4 Volts | T_{CC} | 300 | ppm/ °C |
| Storage Temperature | T_{STG} | -55 to +125 | °C |
| Operating Temperature | T_{OP} | -55 to +125 | °C |

KEY FEATURES

- Highest Q
- Lowest R_s
- Large selection of capacitance values to chose from
- Low phase noise
- RoHS Compliant¹

APPLICATIONS/BENEFITS

- HF through UHF Band VCOs
- VVF (Voltage Variable Filters)
- Phase Shifters



IMPORTANT: For the most current data, consult our website: www.MICROSEMI.com
 Specifications are subject to change. Consult factory for the latest information.



These devices are ESD sensitive and must be handled using ESD precautions.

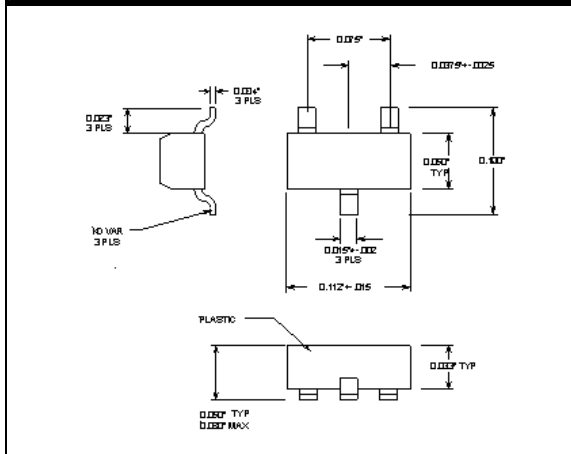
¹ Unless otherwise specified, these products are supplied with Gold terminations suitable for RoHS compliant assembly.

SOT 23 Abrupt Varactors For Moderate Bandwidth / Low Noise VCOs
ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

| MODEL NUMBER | C_T (pF) ¹ $V_R = 4V$ (+/- 10%) | Ratio $C_{T(0V)} / C_{T(-30V)}$ (Min) | Q^2 $V_R=4V$ (Min) |
|--------------|--|---|----------------------------|
| GCX1202 – 23 | 1.2 | 3.4 | 3200 |
| GCX1203 – 23 | 1.5 | 3.5 | 3000 |
| GCX1204 – 23 | 1.8 | 3.5 | 3000 |
| GCX1205 – 23 | 2.2 | 3.7 | 3000 |
| GCX1206 – 23 | 2.7 | 3.7 | 2500 |
| GCX1207 – 23 | 3.3 | 3.8 | 2500 |
| GCX1208 – 23 | 3.9 | 3.9 | 2500 |
| GCX1209 – 23 | 4.7 | 3.9 | 2000 |
| GCX1210 – 23 | 5.6 | 4.0 | 2000 |
| GCX1211 – 23 | 6.8 | 4.0 | 2000 |
| GCX1212 – 23 | 8.2 | 4.0 | 2000 |
| GCX1213 – 23 | 10 | 4.1 | 1800 |
| GCX1214 – 23 | 12 | 4.1 | 1600 |
| GCX1215 – 23 | 15 | 4.2 | 1250 |
| GCX1216 – 23 | 18 | 4.2 | 1000 |
| GCX1217 – 23 | 22 | 4.2 | 850 |

Notes

1. Capacitance is measured at $f = 1$ MHz
2. Q is determined at $V_R = 4V$, $f = 50$ MHz by $1/2\pi f R_s C_j$

PACKAGE STYLE 23-X

STANDARD CONFIGURATIONS
