

DESCRIPTION

A Frequency Linear Tuning Varactor (FLTVAR[™]) is a silicon epitaxial mesa device, designed to provide wideband Linear Tuning in VCO and filter applications.

These diodes feature superior passivation for high reliability, low leakage current, and low surface noise. They offer Q values well above ion-implanted hyperabrupt diodes.

The specifications below apply to chips, or to chips mounted on carriers. Although these chips can be provided in any of our standard packages, this is not recommended for the lower capacitance diodes, because the parallel parasitic capacitance of the package degrades linearity at high bias voltages.

This series of diodes meets RoHS requirements per EU Directive 2002/95/EC. The standard terminal finish is gold unless otherwise specified. Consult the factory if you have special requirements.

KEY FEATURES

- Wideband Linear Tuning
- Very Low Phase Noise
- Exceptional Q.
- Computer Controlled Grown Junction Epitaxy
- Functional through Ku Band
- Octave Tuning
- RoHS Compliant¹

¹ Most products are supplied with a Gold finish and are suitable for RoHS complaint assembly. Consult factory for details.

APPLICATIONS

The GC15000 series of frequency-linear tuning varactors are used in VCO's, filters, amplifiers and modulators for wide band tuning through Ku band. The frequency linear characteristics allow over one octave linear tuning in suitable circuits, with no need for external linearization. The combination of high Q and low surface noise results in low FM noise in VCO applications. They are particularly useful in modulated VCO's because of their constant sensitivity, and high modulation rate capability.

APPLICATIONS/BENEFITS

- VCOs
- Filters
- Modulators
- Amplifiers

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

| Rating | Symbol | Value | Unit |
|------------------------------------|------------------|-------------|------|
| Maximum Leakage Current @ 20 Volts | I _R | 50 | nA |
| Storage Temperature | T _{STG} | -65 to +150 | °C |
| Operating Temperature | T _{OP} | -55 to +125 | °C |

IMPORTANT:

For the most current data, consult our web site: www.microsemi.com
 Specifications are subject to change, consult the factory for further information.



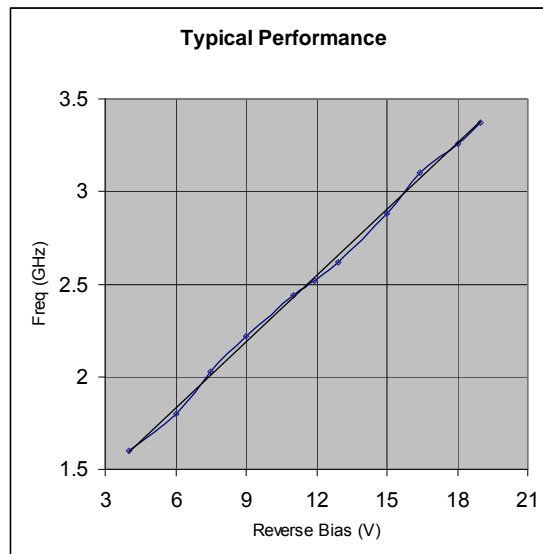
These devices are ESD sensitive and must be handled use using ESD precautions.

CHIP ELECTRICAL PARAMETERS @ 25°C (unless otherwise specified)

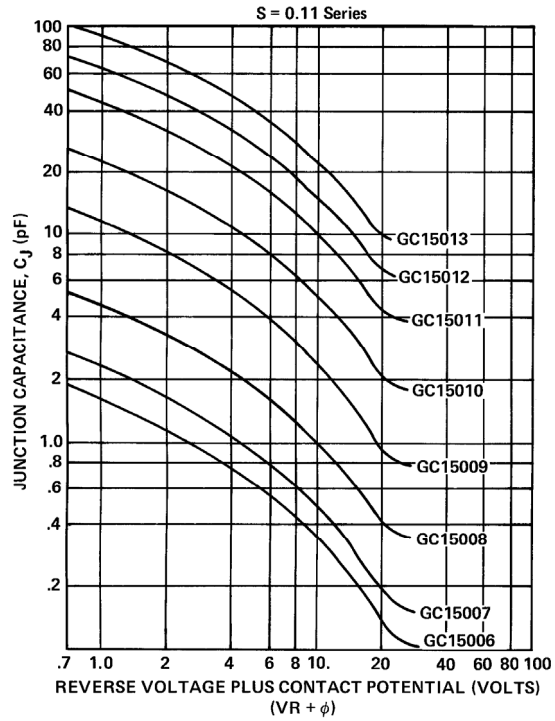
| Model Number | V _b (V) I _R =10μA (Min) | C _j (pF) ¹ @-4V (+/-10%) | C _j (pF) @-20V (Typ) | Sensitivity ² (Typ) | Tuning Ratio C _{J0} /C _{J15} (Typ) | Tuning Ratio C _{J0} /C _{J20} (Typ) | Q ³ (Typ) |
|--------------|---|--|---------------------------------------|-----------------------------------|---|---|-------------------------|
| GC15001-00 | 22 | 0.7 | 0.2 | .08 | 8:1 | -- | 1400 |
| GC15002-00 | 22 | 1.0 | 0.3 | .08 | 8:1 | -- | 1300 |
| GC15003-00 | 22 | 2.0 | 0.55 | .08 | 8:1 | -- | 1200 |
| GC15004-00 | 22 | 5.0 | 1.3 | .08 | 8:1 | -- | 1100 |
| GC15005-00 | 22 | 10.0 | 2.4 | .08 | 8:1 | -- | 900 |
| GC15014-00 | 22 | 22.0 | 6.9 | .08 | 8:1 | -- | 600 |
| GC15015-00 | 22 | 33.0 | 9.8 | .08 | 8:1 | -- | 500 |
| GC15016-00 | 22 | 48.0 | 14.0 | .08 | 8:1 | -- | 400 |
| GC15006-00 | 22 | 0.7 | 0.14 | .11 | -- | 13:1 | 1200 |
| GC15007-00 | 22 | 1.0 | 0.2 | .11 | -- | 13:1 | 1000 |
| GC15008-00 | 22 | 2.0 | 0.4 | .11 | -- | 13:1 | 900 |
| GC15009-00 | 22 | 5.0 | 0.9 | .11 | -- | 13:1 | 800 |
| GC15010-00 | 22 | 10.0 | 2.0 | .11 | -- | 13:1 | 700 |
| GC15011-00 | 22 | 22.0 | 4.1 | .11 | -- | 13:1 | 500 |
| GC15012-00 | 22 | 33.0 | 6.8 | .11 | -- | 13:1 | 400 |
| GC15013-00 | 22 | 48.0 | 10.0 | .11 | -- | 13:1 | 200 |

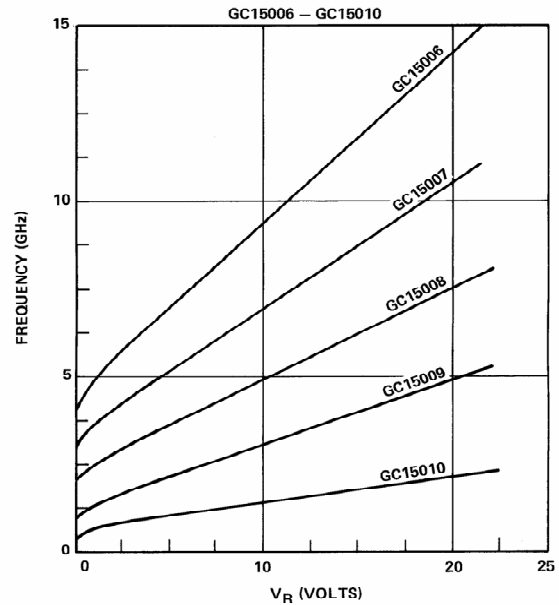
NOTES:

1. F = 1MHz. Other capacitance values are available; consult factory.
2. Sensitivity series, S = .08; V = 15 volts.
Sensitivity series, S = .11; V = 20 volts.
3. V=4 V, 50 MHz



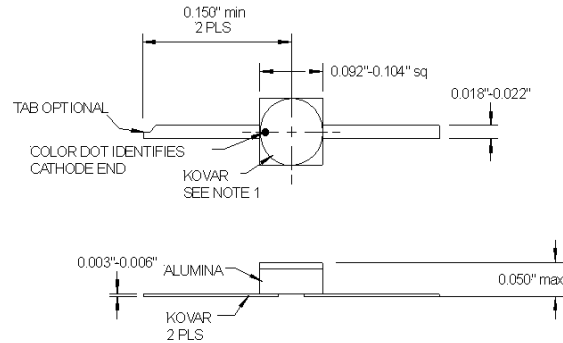
S=0.08, C-V CURVES

S=0.11, C-V CURVES

FREQUENCY RESPONSE

FREQUENCY RESPONSE


PACKAGE OPTIONS
PACKAGE STYLE 00


Notes:
 Chip style package for hybrid circuits
 Dimensions vary by model number
 Consult factory for details
 Order as GC15xxxx – 00

PACKAGE STYLE 17


Notes:
 Hermetic – Stripline -Surface Mount Package
 Order as GC15xxxx – 17

PACKAGE STYLE 450A - E


Notes:
 Non-Hermetic – Surface Mount Package
 Order as GC15xxxx – 450A or 450B

MANY OTHER PACKAGE STYLES AVAILABLE ON REQUEST
 CONSULT FACTORY

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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