30 VOLT ABRUPT JUNCTION VARACTOR DIODES

DESCRIPTION

The GC1500 series varactors are silicon abrupt junction devices. They offer the highest Q and lowest series resistance available in a 30 Volt silicon varactor.

APPLICATIONS

The GC1500 series varactors are used for narrow to moderate band width tuning. They are available in values appropriate for VHF through KU band 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 ±10% Other capacitance values and custom mechanical configurations are also available. All specifications shown are based on style 30 package and include .18 pF case capacitance. Consult package outline section of this catalog for other case styles available. Complete electrical and mechanical data is also provided.

RATINGS

Minimum Voltage Breakdown: 30 V at 10μA

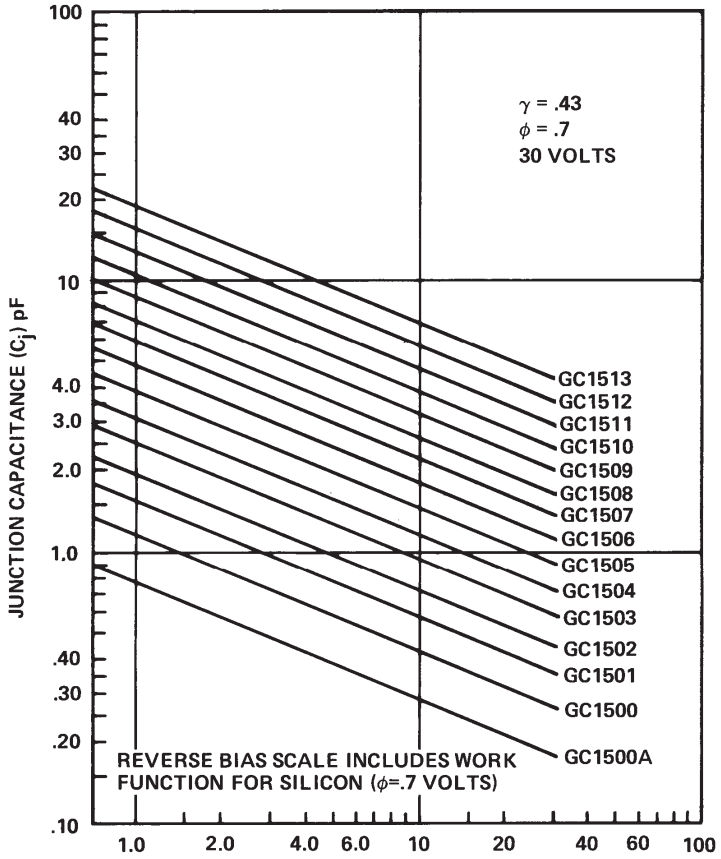
Maximum Leakage Current at:

25 V and 25°C	0.02 μA
25 V and 125°C	2.00 μA

Capacitance-Temp. Coefficient: 300 ppm/°C at V_R=-4V

Operating Temperature: -55°C to +150°C

Storage Temperature: -65°C to +200°C



Typical Junction Capacitance vs Reverse Bias

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ELECTRICAL SPECIFICATIONS: T_A = 25°C

MODEL NUMBER[1]	TOTAL CAPACITANCE[2] (AT-4V, 1 MHz) Ct-4 (pF)	QUALITY FACTOR[3] (AT-4V, 50 MHz) Q-4 (MIN)	CAPACITANCE RATIO[2] C_{T0}/C_{T30} (MIN)
GC1500A[4]	0.4	5000	4.2
GC1500B	0.6	4000	3.0
GC1500	0.8	3900	3.3
GC1501	1.0	3800	3.4
GC1502	1.2	3800	3.4
GC1503	1.5	3600	3.5
GC1504	1.8	3500	3.5
GC1505	2.2	3500	3.7
GC1506	2.7	3300	3.7
GC1507	3.3	3100	3.8
GC1508	3.9	2700	3.9
GC1509	4.7	2600	3.9
GC1510	5.6	2600	4.0
GC1511	6.8	2400	4.0
GC1512	8.2	2200	4.0
GC1513	10.0	2200	4.2

NOTES:

1. When ordering, specify the desired case style by adding its number as a suffix to the model number. Some limitations apply - consult factory for details.
2. These values include a package capacitance of .18 P_F.
3. Q is calculated from: $Q=\frac{1}{2\pi f R_S C_j}$ where f=50 MHz and
   R_s = Series resistance measured a 1 GHz using transmission loss techniques. Capacitance is measured at 1 MHz.
4. GC1500A only available in Die Form.