SUPER HYPERABRupt Tuning Varactor Diodes

Features
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior mid range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

Applications
- TCXOs, VCXOs
- Low voltage wireless open loop VCOs
- Low voltage wireless phase locked loop VCOs
- Phase shifters

Specifications
- Reverse breakdown voltage at 10 µA DC (at 25°C): 12 V min
- Maximum reverse leakage current at –10 V (at 25°C): 0.05 µA DC
- Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
- Operating junction temperature: –55°C to +125°C
- Storage temperature: –55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance C_T (pF) at –2 V</th>
<th>Total Capacitance C_T (pF) at –7 V</th>
<th>Total Capacitance C_T (pF) at –10 V</th>
<th>Q min at –2 V (10 MHz)</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>max</td>
<td>min</td>
<td>max</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>68</td>
<td>6.1</td>
<td>4.2</td>
<td>75</td>
</tr>
<tr>
<td>100</td>
<td>150</td>
<td>13.0</td>
<td>8.6</td>
<td>50</td>
</tr>
</tbody>
</table>

SOT-23 Package - Consult factory for additional package configurations.
All dimensions are in /mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.
SUPER HYPERABRupt TUNING VARACTOR DIODES

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior mid range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode Style
- Available in chip form (add suffix -000)

APPLICATIONS
- TCXOs, VCXOs
- Low voltage wireless open loop VCOs
- Low voltage wireless phase locked loop VCOs
- Phase shifters

SPECIFICATIONS
- Reverse breakdown voltage at 10 µA DC
  (at 25°C): 12 V min
- Maximum reverse leakage current at –10 V
  (at 25°C): 0.05 µA DC
- Device dissipation at 25°C: 250 mW (derated
  linearly to zero at +125°C)
- Operating junction temperature: –55°C to +125°C
- Storage temperature: –55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance</th>
<th>Capacitance Ratio</th>
<th>Capacitance Ratio</th>
<th>Q min at</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_T (pF) at –1 V</td>
<td>C_T at –1 V min</td>
<td>C_T at –1 V max</td>
<td>–4 V</td>
<td>Single</td>
</tr>
<tr>
<td></td>
<td>CT at –3 V min</td>
<td>CT at –6 V max</td>
<td>(50 MHz)</td>
<td>GVD20433-001</td>
</tr>
<tr>
<td>3.00</td>
<td>3.60</td>
<td>1.4</td>
<td>3.3</td>
<td>1500</td>
</tr>
<tr>
<td>5.85</td>
<td>7.15</td>
<td>1.6</td>
<td>3.4</td>
<td>1200</td>
</tr>
<tr>
<td>10.35</td>
<td>12.65</td>
<td>1.6</td>
<td>3.4</td>
<td>1000</td>
</tr>
<tr>
<td>15.50</td>
<td>18.50</td>
<td>1.6</td>
<td>3.5</td>
<td>900</td>
</tr>
<tr>
<td>45.00</td>
<td>54.00</td>
<td>1.6</td>
<td>3.5</td>
<td>750</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.
All dimensions are in / mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.
SUPER HYPERABRUPT TUNING VARACTOR DIODES

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior mid range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

APPLICATIONS
- TCXOs, VCXOs
- Low voltage wireless open loop VCOs
- Low voltage wireless phase locked loop VCOs
- Phase shifters

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC (at 25°C): 12 V min
Maximum reverse leakage current at –10 V (at 25°C): 0.05 µA DC
Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
Operating junction temperature: –55°C to +125°C
Storage temperature: –55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance C_T (pF) at –1 V</th>
<th>Total Capacitance C_T (pF) at –2.5 V</th>
<th>Total Capacitance C_T (pF) at –8 V</th>
<th>Q min at –4 V (50 MHz)</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>max</td>
<td>max</td>
<td>GVD20442-001</td>
<td>GVD20442-004</td>
</tr>
<tr>
<td>13.0</td>
<td>6.5</td>
<td>10.0</td>
<td>2.7</td>
<td>750</td>
</tr>
<tr>
<td>13.0</td>
<td>6.5</td>
<td>10.0</td>
<td>2.7</td>
<td>350</td>
</tr>
<tr>
<td>17.0</td>
<td>8.5</td>
<td>13.0</td>
<td>3.2</td>
<td>600</td>
</tr>
<tr>
<td>17.0</td>
<td>8.5</td>
<td>13.0</td>
<td>3.2</td>
<td>300</td>
</tr>
<tr>
<td>26.0</td>
<td>13.0</td>
<td>20.0</td>
<td>4.7</td>
<td>500</td>
</tr>
<tr>
<td>26.0</td>
<td>13.0</td>
<td>20.0</td>
<td>4.7</td>
<td>225</td>
</tr>
<tr>
<td>36.0</td>
<td>18.0</td>
<td>27.0</td>
<td>6.2</td>
<td>400</td>
</tr>
<tr>
<td>36.0</td>
<td>18.0</td>
<td>27.0</td>
<td>6.2</td>
<td>150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Capacitance C_T (pF) at –1 V</th>
<th>Total Capacitance C_T (pF) at –2.5 V</th>
<th>Total Capacitance C_T (pF) at –4 V</th>
<th>Q min at –4 V (50 MHz)</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>max</td>
<td>max</td>
<td>GVD20450-001</td>
<td>GVD20450-004</td>
</tr>
<tr>
<td>9.0</td>
<td>4.5</td>
<td>6.5</td>
<td>3.0</td>
<td>400</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.
All dimensions are in /mm.
Unless otherwise specified, the tolerance on dimensions is ±0.004 / 0.1.
SUPER HYPERABRUPT TUNING VARACTOR DIODES
Surface Mount Low Parasitic Package (SMLP)

FEATURES
• Mesa epitaxial silicon construction
• Silicon dioxide passivated
• Fits footprint for SOD-323, SOD-123 and smaller
• High frequency (VHF to 8 GHz)
• Available on carrier and reel
• Available in chip form (add suffix -000)
• Two package styles including lower cost, flat top version
• Alternate notched termination version available, contact factory for outline drawing

APPLICATIONS
• PCS
• WANS
• DECT
• GSM
• TAGS
• AMPS
• Cellular

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC
(at 25°C): 12 V min
Maximum reverse leakage current at –10 V
(at 25°C): 0.05 µA DC
Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
Operating junction temperature: –65°C to +125°C
Storage temperature: –65°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance</th>
<th>Total Capacitance</th>
<th>Total Capacitance</th>
<th>Total Capacitance</th>
<th>Q min</th>
<th>Model Number*</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&lt;sub&gt;T&lt;/sub&gt; (pF) at –1 V</td>
<td>C&lt;sub&gt;T&lt;/sub&gt; (pF) at –2.5 V</td>
<td>C&lt;sub&gt;T&lt;/sub&gt; (pF) at –4 V</td>
<td>C&lt;sub&gt;T&lt;/sub&gt; (pF) at –8 V</td>
<td>at –4 V (50 MHz)</td>
<td></td>
</tr>
<tr>
<td>min</td>
<td>max</td>
<td>min</td>
<td>max</td>
<td>max</td>
<td></td>
</tr>
<tr>
<td>36.0</td>
<td>18.0</td>
<td>27.0</td>
<td>12.0</td>
<td>6.2</td>
<td>400</td>
</tr>
<tr>
<td>26.0</td>
<td>13.0</td>
<td>20.0</td>
<td>9.0</td>
<td>4.7</td>
<td>500</td>
</tr>
<tr>
<td>17.0</td>
<td>6.5</td>
<td>13.0</td>
<td>6.0</td>
<td>4.5</td>
<td>600</td>
</tr>
<tr>
<td>13.0</td>
<td>4.5</td>
<td>6.5</td>
<td>3.0</td>
<td>2.7</td>
<td>750</td>
</tr>
<tr>
<td>9.0</td>
<td>2.0</td>
<td>3.0</td>
<td>1.5</td>
<td>1.0</td>
<td>900</td>
</tr>
<tr>
<td>4.0</td>
<td>2.0</td>
<td>3.0</td>
<td>1.5</td>
<td>1.0</td>
<td>1200</td>
</tr>
<tr>
<td>1.8</td>
<td>1.1</td>
<td>1.5</td>
<td>0.8</td>
<td>0.5</td>
<td>1400</td>
</tr>
<tr>
<td>1.2</td>
<td>0.8</td>
<td>1.1</td>
<td>0.6</td>
<td>0.45</td>
<td>1600</td>
</tr>
<tr>
<td>0.6</td>
<td>0.5</td>
<td>0.8</td>
<td>0.4</td>
<td>0.35</td>
<td>1800</td>
</tr>
</tbody>
</table>

* For complete model number, select “Dash No.” from chart below.

TERMINATIONS (GOLD PLATED)
D TYP
M TYP
Bottom View
Top View
EPOXY ENCAPSULANT
SIDE VIEW FOR – 01
SIDE VIEW FOR – 11
MOUNTING PAD LAYOUT

Note: An SMLP package with three terminations sized to fit the pad layout for an SOT-23 package is also available. This package can be used for multiple diode designs (such as common cathode or common anode). Contact factory for the three-terminal SMLP outline drawing, and for further information on the multiple diode configurations.
WIDEBAND HYPERABRUPT TUNING VARACTOR DIODES

Microwave Hyperabrupt Series

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior wide range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

APPLICATIONS
- Low phase noise VCOs
- Phase locked loop VCOs
- High linearity VCOs
- Phase shifters

SPECIFICATIONS
- Reverse breakdown voltage at 10 µA DC
  (at 25°C): 20 V min
- Maximum reverse leakage current at -20 V
  (at 25°C): 0.05 µA DC
- Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
- Operating junction temperature: -55°C to +125°C
- Storage temperature: -55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance CT (pF) at -0 V</th>
<th>Total Capacitance CT (pF) at -4 V</th>
<th>Total Capacitance CT (pF) at -20 V</th>
<th>Q min at -4 V (50 MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 (pF) at -0 V</td>
<td>C1 (pF) at -4 V</td>
<td>C1 (pF) at -20 V</td>
<td></td>
</tr>
<tr>
<td>min</td>
<td>min</td>
<td>min</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>1.25</td>
<td>1.75</td>
<td>0.43 0.57</td>
</tr>
<tr>
<td>4.2</td>
<td>1.70</td>
<td>2.50</td>
<td>0.52 0.72</td>
</tr>
<tr>
<td>6.3</td>
<td>2.20</td>
<td>3.80</td>
<td>0.68 0.96</td>
</tr>
<tr>
<td>11.9</td>
<td>3.70</td>
<td>5.50</td>
<td>0.94 1.30</td>
</tr>
<tr>
<td>26.0</td>
<td>9.00</td>
<td>11.00</td>
<td>1.90 2.50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Single</th>
<th>Common Cathode</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVD30422-001</td>
<td>1000</td>
<td>GVD30422-004</td>
</tr>
<tr>
<td>GVD30422-001</td>
<td>850</td>
<td>GVD30422-004</td>
</tr>
<tr>
<td>GVD30422-001</td>
<td>700</td>
<td>GVD30422-004</td>
</tr>
<tr>
<td>GVD30422-001</td>
<td>600</td>
<td>GVD30422-004</td>
</tr>
<tr>
<td>GVD30422-001</td>
<td>400</td>
<td>GVD30422-004</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.

All dimensions are in / mm.

Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.
WIDEBAND HYPERABRUPT TUNING VARACTOR DIODES
VHF/UHF Hyperabrupt Series

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior wide range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

APPLICATIONS
- Low phase noise VCOs
- Phase locked loop VCOs
- High linearity VCOs
- Phase shifters

SPECIFICATIONS
- Reverse breakdown voltage at 10 µA DC (at 25°C): 25 V min
- Maximum reverse leakage current at ~20 V (at 25°C): 0.05 µA DC
- Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
- Operating junction temperature: -55°C to +125°C
- Storage temperature: -55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance</th>
<th>Total Capacitance</th>
<th>Q min</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_T (pF) at -3 V</td>
<td>C_T (pF) at -25 V</td>
<td>at -4 V (50 MHz)</td>
<td>Single</td>
</tr>
<tr>
<td>min</td>
<td>max</td>
<td></td>
<td>GVD30501-001</td>
</tr>
<tr>
<td>9.5</td>
<td>14.5</td>
<td>1.8</td>
<td>GVD30502-001</td>
</tr>
<tr>
<td>9.5</td>
<td>14.5</td>
<td>1.8</td>
<td>GVD30503-001</td>
</tr>
<tr>
<td>26.0</td>
<td>32.0</td>
<td>4.3</td>
<td>GVD30504-001</td>
</tr>
<tr>
<td>26.0</td>
<td>32.0</td>
<td>4.3</td>
<td>GVD30503-001</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.
All dimensions are in mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.004/0.1.
WIDEBAND HYPERABRUPT TUNING VARACTOR DIODES

VHF/UHF Hyperabrupt Series

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Superior wide range linear characteristics
- High tuning ratios
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

APPLICATIONS
- Low phase noise VCOs
- Phase locked loop VCOs
- High linearity VCOs
- Phase shifters

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC
(at 25°C): 22 V min
Maximum reverse leakage current at -20 V
(at 25°C): 0.05 µA DC
Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
Operating junction temperature: -55°C to +125°C
Storage temperature: -55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance $C_t$ (pF) at -4 V</th>
<th>Total Capacitance $C_t$ (pF) at -8 V</th>
<th>Total Capacitance $C_t$ (pF) at -20 V</th>
<th>Q min at -4 V (50 MHz)</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>max</td>
<td>min</td>
<td>max</td>
<td></td>
</tr>
<tr>
<td>18.0</td>
<td>22.0</td>
<td>7.5</td>
<td>10.5</td>
<td>160</td>
</tr>
<tr>
<td>45.0</td>
<td>55.0</td>
<td>18.0</td>
<td>25.0</td>
<td>125</td>
</tr>
<tr>
<td>100.0</td>
<td>120.0</td>
<td>39.0</td>
<td>55.0</td>
<td>80</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.
All dimensions are in /mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.004 /0.1.
MICROWAVE HYPERABRUPT TUNING VARACTOR DIODES
Surface Mount Low Parasitic Package (SMLP)

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Fits Footprint for SOD-323, SOD-123 and smaller
- High frequency (VHF to 8 GHz)
- Available on carrier and reel
- Available in chip form (add suffix -000)
- Two package styles including lower cost, flat top version
- Alternate notched termination version available, contact factory for outline drawing

APPLICATIONS
- PCS
- WANS
- AMPS
- GSM
- TAGS
- DECT
- Cellular

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC (at 25°C): 22 V min
Maximum reverse leakage current at -20 V (at 25°C): 0.05 µA DC
Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
Operating junction temperature: -65°C to +125°C
Storage temperature: -65°C to +125°C

<table>
<thead>
<tr>
<th>Model Number*</th>
<th>Dash No.</th>
<th>A</th>
<th>B</th>
<th>C₁ (pF) at -4 V</th>
<th>C₂ (pF) at -20 V</th>
<th>Q min at -4 V (50 MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVD92101</td>
<td>-011</td>
<td>0.10</td>
<td>0.050</td>
<td>0.035</td>
<td>0.050</td>
<td>0.015 ± 0.004</td>
</tr>
<tr>
<td></td>
<td>-111</td>
<td>2.5</td>
<td>1.3</td>
<td>0.89</td>
<td>1.3</td>
<td>0.38 ± 0.1</td>
</tr>
<tr>
<td>GVD92102</td>
<td>-012</td>
<td>0.12</td>
<td>0.060</td>
<td>0.035</td>
<td>0.050</td>
<td>0.020 ± 0.005</td>
</tr>
<tr>
<td></td>
<td>-112</td>
<td>3.0</td>
<td>1.5</td>
<td>0.89</td>
<td>1.3</td>
<td>0.51 ± 0.1</td>
</tr>
<tr>
<td>GVD92103</td>
<td>-013</td>
<td>0.200</td>
<td>0.100</td>
<td>0.035</td>
<td>0.050</td>
<td>0.020 ± 0.005</td>
</tr>
<tr>
<td></td>
<td>-113</td>
<td>5.08</td>
<td>2.54</td>
<td>0.89</td>
<td>1.3</td>
<td>0.51 ± 0.1</td>
</tr>
<tr>
<td>GVD92104</td>
<td>-014</td>
<td>0.075</td>
<td>0.050</td>
<td>0.035</td>
<td>0.050</td>
<td>0.015 ± 0.004</td>
</tr>
<tr>
<td></td>
<td>-114</td>
<td>1.9</td>
<td>1.3</td>
<td>0.89</td>
<td>1.3</td>
<td>0.38 ± 0.1</td>
</tr>
<tr>
<td>GVD92105</td>
<td>-015</td>
<td>0.062</td>
<td>0.042</td>
<td>0.030</td>
<td>0.050</td>
<td>0.011 ± 0.003</td>
</tr>
<tr>
<td></td>
<td>-115</td>
<td>1.6</td>
<td>1.1</td>
<td>0.76</td>
<td>1.3</td>
<td>0.28 ± 0.08</td>
</tr>
</tbody>
</table>

*For complete model number, select “Dash No.” from chart below.

TERMINATIONS (GOLD PLATED)

All dimensions are in /mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.003/0.08.

Note: An SMLP package with three terminations sized to fit the pad layout for an SOT-23 package is also available. This package can be used for multiple diode designs (such as common cathode or common anode). Contact factory for the three-terminal SMLP outline drawing, and for further information on the multiple diode configurations.
HIGH Q ABRUPT TUNING VARACTOR DIODES

FEATURES
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Economy price
- Mil grade performance
- High Q
- Available in common cathode style
- Available in chip form (add suffix -000)

APPLICATIONS
- Low phase noise VCOs
- Phase locked loop VCOs
- Moderate bandwidth VCOs

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC
(at 25°C): 30 V min
Maximum reverse leakage current at −25 V
(at 25°C): 0.05 µA DC
Device dissipation at 25°C: 250 mW (derated
linearly to zero at +125°C)
Operating junction temperature: −55°C to +125°C
Storage temperature: −55°C to +125°C

<table>
<thead>
<tr>
<th>Total Capacitance</th>
<th>Capacitance Ratio</th>
<th>Q min at −4 V (50 MHz)</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cr (pF) at −4 V</td>
<td>Cr at 0 V</td>
<td></td>
<td>Single</td>
</tr>
<tr>
<td></td>
<td>Cr at −30 V min</td>
<td></td>
<td>Common Cathode</td>
</tr>
<tr>
<td>1.2</td>
<td>3.4</td>
<td></td>
<td>GVD1202-001</td>
</tr>
<tr>
<td>1.5</td>
<td>3.5</td>
<td>3200</td>
<td>GVD1202-004</td>
</tr>
<tr>
<td>1.8</td>
<td>3.5</td>
<td>3000</td>
<td>GVD1203-001</td>
</tr>
<tr>
<td>2.2</td>
<td>3.7</td>
<td>3000</td>
<td>GVD1204-001</td>
</tr>
<tr>
<td>2.7</td>
<td>3.7</td>
<td>2500</td>
<td>GVD1205-001</td>
</tr>
<tr>
<td>3.3</td>
<td>3.8</td>
<td>2500</td>
<td>GVD1206-001</td>
</tr>
<tr>
<td>3.9</td>
<td>3.9</td>
<td>2500</td>
<td>GVD1207-001</td>
</tr>
<tr>
<td>4.7</td>
<td>4.0</td>
<td>2000</td>
<td>GVD1208-001</td>
</tr>
<tr>
<td>5.6</td>
<td>4.0</td>
<td>2000</td>
<td>GVD1209-001</td>
</tr>
<tr>
<td>6.8</td>
<td>4.0</td>
<td>2000</td>
<td>GVD1210-001</td>
</tr>
<tr>
<td>8.2</td>
<td>4.0</td>
<td>2000</td>
<td>GVD1211-001</td>
</tr>
<tr>
<td>10.0</td>
<td>4.1</td>
<td>1800</td>
<td>GVD1212-001</td>
</tr>
<tr>
<td>12.0</td>
<td>4.1</td>
<td>1600</td>
<td>GVD1213-001</td>
</tr>
<tr>
<td>15.0</td>
<td>4.2</td>
<td>1250</td>
<td>GVD1214-001</td>
</tr>
<tr>
<td>18.0</td>
<td>4.2</td>
<td>1000</td>
<td>GVD1215-001</td>
</tr>
<tr>
<td>22.0</td>
<td>4.2</td>
<td>850</td>
<td>GVD1216-001</td>
</tr>
</tbody>
</table>

SOT-23 PACKAGE - Consult factory for additional package configurations.
All dimensions are in /mm.
Unless otherwise specified, the tolerance on dimensions is ± 0.004/0.1.
## Microwave Abrupt Tuning Varactor Diodes

### Surface Mount Low Parasitic Package (SMLP)

**Features**
- Mesa epitaxial silicon construction
- Silicon dioxide passivated
- Fits footprint for SOD-323, SOD-123 and smaller
- High Frequency (VHF to 8 GHz)
- Available on carrier and reel
- Available in chip form (add suffix -000)
- Two package styles including lower cost, flat top version
- Alternate notched termination version available, contact factory for outline drawing

**Applications**
- PCS
- WANS
- AMPS
- GSM
- TAGS
- DECT
- Cellular

**Specifications**
- Reverse breakdown voltage at 10 µA DC (at 25°C): 30 V min
- Maximum reverse leakage current at -25 V (at 25°C): 0.05 µA DC
- Device dissipation at 25°C: 250 mW (derated linearly to zero at +125°C)
- Operating junction temperature: -65°C to +125°C
- Storage temperature: -65°C to +125°C

**Capacitance Table**

<table>
<thead>
<tr>
<th>Total Capacitance C_T (pF) at -4 V (±10%)</th>
<th>Capacitance Ratio C_T at 0 V C_T at -4 V min</th>
<th>Capacitance Ratio C_T at -4 V C_T at -30 V min</th>
<th>Q min at -4 V (50 MHz)</th>
<th>Model Number*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>1.5</td>
<td>1.45</td>
<td>3900</td>
<td>GVD91300 -</td>
</tr>
<tr>
<td>1.0</td>
<td>1.6</td>
<td>1.55</td>
<td>3800</td>
<td>GVD91301 -</td>
</tr>
<tr>
<td>1.2</td>
<td>1.7</td>
<td>1.60</td>
<td>3700</td>
<td>GVD91302 -</td>
</tr>
<tr>
<td>1.5</td>
<td>1.8</td>
<td>1.65</td>
<td>3600</td>
<td>GVD91303 -</td>
</tr>
<tr>
<td>1.8</td>
<td>1.9</td>
<td>1.70</td>
<td>3500</td>
<td>GVD91304 -</td>
</tr>
<tr>
<td>2.2</td>
<td>2.0</td>
<td>1.75</td>
<td>3400</td>
<td>GVD91305 -</td>
</tr>
<tr>
<td>2.7</td>
<td>2.0</td>
<td>1.80</td>
<td>3300</td>
<td>GVD91306 -</td>
</tr>
<tr>
<td>3.3</td>
<td>2.1</td>
<td>1.86</td>
<td>3100</td>
<td>GVD91307 -</td>
</tr>
<tr>
<td>3.9</td>
<td>2.1</td>
<td>1.90</td>
<td>2700</td>
<td>GVD91308 -</td>
</tr>
<tr>
<td>4.7</td>
<td>2.2</td>
<td>1.95</td>
<td>2600</td>
<td>GVD91309 -</td>
</tr>
<tr>
<td>5.6</td>
<td>2.2</td>
<td>2.00</td>
<td>2500</td>
<td>GVD91310 -</td>
</tr>
</tbody>
</table>

*For complete model number, select “Dash No.” from chart below.

**Dimensions**

All dimensions are in /mm. Unless otherwise specified, the tolerance on dimensions is ± 0.003/0.08.

Note: An SMLP package with three terminations sized to fit the pad layout for an SOT-23 package is also available. This package can be used for multiple diode designs (such as common cathode or common anode). Contact factory for the three-terminal SMLP outline drawing, and for further information on the multiple diode configurations.
MINIATURE MICROWAVE SILICON VARACTOR DIODES
Surface Mount Monolithic Package (SMMP)

FEATURES
• Multilayer construction
• Low SMT profile
• Low series inductance
• Low parasitic capacitance (0.06 pF)
• High Q
• Available on carrier and reel

APPLICATIONS
Microwave Voltage Controlled Oscillators (VCOs)
Ideal for Wide Bandwidth Applications (VHF-10 GHz)

SPECIFICATIONS
Reverse breakdown voltage at 10 µA DC
(at 25°C): See below
Maximum reverse leakage current at -10 V
(at 25°C): 0.05 µA DC
Operating junction temperature: -65°C to +125°C
Storage temperature: -65°C to +125°C

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacitance Ratio</th>
<th>Capacitance Ratio</th>
<th>Q min</th>
<th>Total Capacitance C_T at -1 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>min</td>
<td>max</td>
<td>min</td>
<td>max</td>
</tr>
<tr>
<td>GVD60100</td>
<td>2.6</td>
<td>3.8</td>
<td>2.6</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>1.4</td>
<td>2.2</td>
<td>1.4</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Reverse breakdown voltage at 10 µA DC: 15 V min

Reverse breakdown voltage at 10 µA DC: 22 V min

Models shown above supplied bulk in vials.
For 300 pc gel pack, add "-03" to the model number.
For 5000 pc carrier and reel, add "-50" to the model number.

All dimensions are in / mm,
Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.