1210-G(f_c)-H (MIR)
Acousto-Optic Modulator, 2.05 - 4.0 um

APPLICATIONS
- Modulator
- Frequency Shifter

The 1210 series are conduction cooled Germanium AO modulators/frequency shifters designed for operation in the 2.05 - 4um range. Input light must be linearly polarized, parallel to the mounting base.

SPECIFICATIONS

Operating Wavelength: A/R 2.05um, or 2.5 - 5um
Interaction Material: Single Crystal Germanium
Acoustic Velocity: 5.5mm/us
Input Impedance: 50 Ohms (nominal)
Center Frequency options (f_c):
- 1210- G60 -H 60MHz
- 1210- G80 -H 80MHz
- 1210- G105-H 105MHz

RF Bandwidth: > f_c +/- 5MHz
Insertion Loss: < 5%
A/R reflectivity: < 1% per surface

Active Aperture options (H):
- 1210-G(f_c) -2 2mm
- 1210-G(f_c) -3 3mm
- 1210-G(f_c) -4 4mm

Laser Polarization: Linear/Parallel to base (essential)

<table>
<thead>
<tr>
<th>λ (um)</th>
<th>Fc (MHz)</th>
<th>Bragg Angle (mrad)</th>
<th>Separation Angle (mrad)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.05</td>
<td>80</td>
<td>14.9</td>
<td>29.8</td>
</tr>
<tr>
<td></td>
<td>105</td>
<td>19.6</td>
<td>39.1</td>
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<tr>
<td>3.39</td>
<td>60</td>
<td>18.5</td>
<td>37.0</td>
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<tr>
<td></td>
<td>80</td>
<td>24.6</td>
<td>49.3</td>
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</table>

<table>
<thead>
<tr>
<th>λ (um)</th>
<th>Active Aperture mm</th>
<th>RF power for max' efficiency W</th>
<th>Typical Diffraction Efficiency %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.05</td>
<td>2</td>
<td>1.6</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3.2</td>
<td>87</td>
</tr>
<tr>
<td>3.39</td>
<td>2</td>
<td>4</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6.5 *</td>
<td>75 *</td>
</tr>
</tbody>
</table>

* Maximum recommended CW (or average) RF power = 4W
**Suggested RF Drivers**

**Fixed frequency (digital / analog modulation):**
- 60MHz: 521C-4-60 / 531C-4-60
- 80MHz: 522C-4 / 532C-4
- 105MHz: 523C-4-105 / 533C-4-105

**Tuneable frequency (digital / analog modulation):**
- 620C/630C-80
- 620C/630C-100
- iSPA-SF1-b/c Synthesizer-amplifier

**OUTLINE DRAWING**

*Ensure adequate heatsink path through mounting surface, especially at higher RF powers.*

**Case must not exceed 35degC**