

# M1448-G(fc)-2 , -4



## Acousto-Optic Modulator, 2.05 - 5.0 um

1724

### APPLICATIONS

- **Modulator**
- **Frequency Shifter**

The M1448 series are conduction cooled Germanium AO modulators/frequency shifters designed for operation in the 2.05 - 5um range. Input light must be linearly polarized, parallel to the mounting base.

### SPECIFICATIONS

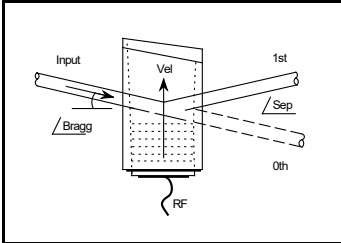
Operating Wavelength:	A/R 2.05um, or 2.5 - 5um
Interaction Material:	Single Crystal Germanium
Acoustic Velocity:	5.5mm/us
Input Impedance:	50 ohms (nominal)
Center Frequency options (fc):	
M1448-G60-2 or -4	60MHz
M1448-G80-2 or -4	80MHz
M1448-G105-2 or -4	105MHz
Active Aperture options (H):	
M1448-G(fc)-2	2mm
M1448-G(fc)-4	4mm
RF Bandwidth:	> fc +/- 5MHz
Insertion Loss:	< 5%
A/R reflectivity:	< 1% per surface
Optical rise time :	118ns per mm beam diameter.
Laser Polarization:	Linear/Parallel to base (essential)
Maximum recommended RF power:	<b>6W CW or average</b>

$\lambda$	Fc	Bragg Angle	Separation Angle
<u>um</u>	<u>MHz</u>	<u>mrad</u>	<u>mrad</u>
2.05	80	14.9	29.8
	105	19.6	39.1
3.39 / 4.0	60	18.5 / 21.8	37.0 / 43.6
	80	24.6 / 29.1	49.3 / 58.2

$\lambda$	Active Aperture	Peak RF power for max' efficiency	Diffraction Efficiency at max' recommended CW (or average) RF power
<u>um</u>	<u>mm</u>	<u>W</u>	<u>DE% (1mm beam)</u>
2.05	2	1.6	>85%
	4	3.2	>85%
3.39 / 4.0	2	4 / 6.5	>85% / >80%
	4	9 / 12.5	>75% / >60%

**ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**  
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**Quality Assured.**  
**In-house: Crystal Growth,**  
**Optical Polishing,**  
**A/R coating, Vacuum Bonding**



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### SUGGESTED RF DRIVERS

**Fixed frequency, digital / analog modulation:** ( -4 = 4W, -7 = 7W)

60MHz: 552F-4 (-7) -60

80MHz: 552F-4 (-7)

105MHz: 553F-4 (-6) -105

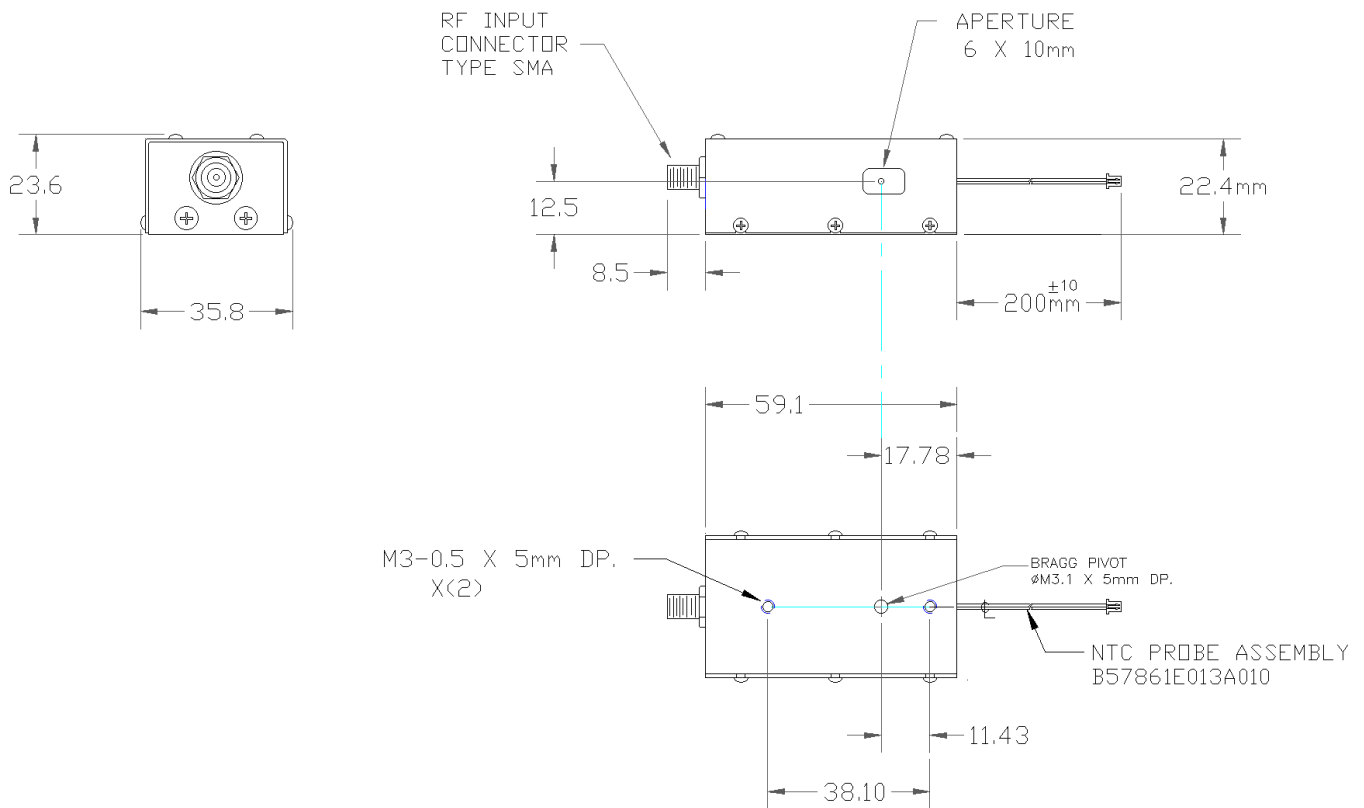
**Tunable frequency, digital / analog modulation:**

620C/630C-80

620C/630C-100

iSPA-SF1-b/c Synthesizer-amplifier

### OUTLINE DRAWING



Ensure adequate heat sinking through mounting surface, especially at high average RF powers.

**Case must not exceed 35degC**

**Options:**

-NT 10K NTC thermistor (probe assembly)

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