The DBM1199 series is an alternative to the popular DBM1186 series. The M1199 differs in that the coolant is not in direct contact with the Germanium block. These Dual Beam Modulators incorporate a novel acoustic beam steering technique to allow the user to switch between the +1 and -1 Bragg orientations. Under electronic control, the user can generate two sequential output beams from a single laser input. Independent modulation levels can be applied to the A and B first order outputs.

### SPECIFICATIONS

- **Spectral Range:** 2.5µm - 11µm
- **Operating Wavelength:** 9.4 or 10.6µm (specified)
- **Interaction Medium:** Single Crystal Germanium
- **Acoustic Velocity:** 5.5mm/µs
- **Centre Frequency (fc):** 54.0 MHz (9.4µm nominal) 50.9 MHz (10.6µm nominal)
- **RF Bandwidth (Δf):** 5MHz
- **Input Impedance:** 50Ω
- **Input VSWR:** < 1.7:1 at fc
- **Optical Insertion Loss:** < 4%
- **Reflectivity:** < 0.3%/Surface
- **Laser Polarization:** Linear Horizontal, Parallel to Base
- **Optical Power:** 300 Watts CW
- **Active Aperture:** 9 mmH x 20 mmL
- **Water Cooling (minimum):** > 2L/minute at < 20°C

### TYPICAL PERFORMANCE

- **Input beam diameter:** 7mm
- **Optical access time:** 0.83us
- **Diffraction Efficiency:** > 85%
- **Total RF Power:** 180 Watts (nominal)
- **Input Angle:** 0 mrad (+/- 10mrad)
- **Separation Angle (0th to -1st or +1st):** +/- 98.1mrad (10.6µm) +/- 92.3mrad (9.4µm)
DBM1199-G54(51)-9C
Dual Beam IR Acousto-Optic Modulator

OUTLINE DRAWING
All case parts in contact with coolant are fabricated in Anodized Aluminium

Refer application note AN0901 regarding Coolant Specification

Options:
- BR : Case parts in contact with coolant fabricated in Nickel plated Brass
- M : Metric M5 mounting hole threads

RF DRIVERS
Modulator Driver/Amplifier
iSA254-4 (54.0MHz / 9.4um)
iSA251-4 (50.9MHz / 10.6um)

Dimensions: mm

1. This device requires water cooling to prevent thermal runaway. The integral NC thermal interlock switch opens at 35 degrees Centigrade.

2. The water cooled case parts are aluminium, it is recommended that a corrosion inhibitor be added to the cooling system.

NOTES:

Dimensions:

Refer application note AN0901 regarding Coolant Specification

Options:
- BR : Case parts in contact with coolant fabricated in Nickel plated Brass
- M : Metric M5 mounting hole threads

RF DRIVERS
Modulator Driver/Amplifier
iSA254-4 (54.0MHz / 9.4um)
iSA251-4 (50.9MHz / 10.6um)