The DBM1186 series 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. This model is optimized for pulsed laser applications.

### SPECIFICATIONS

- **Spectral Range:** 2.5μm - 11μm
- **Operating Wavelength:** 9.3 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:** 0.83μs
- **Diffraction Efficiency:** > 85% (88% typical)
- **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)
DBM1186-G54(51)-9C
Dual Beam IR Acousto-Optic Modulator

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

Dimensions: mm

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

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