

# MGAS40

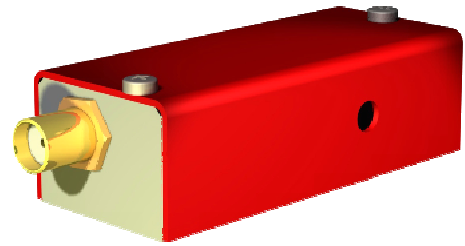
# AO Modulator/Shifter

## Glass modulator/Shifter for 1300-1550 nm lasers

- 1.3  $\mu\text{m}$  • 1.55  $\mu\text{m}$  • Random Polar

These modulators have been specially designed for Low infrared range operation from 1300 to 1600 nm.

They can also be used as fixed frequency shifters @40 MHz as well as variable frequency shifters with a frequency range up to 40 +/- 1 MHz.



### Specifications

|  | <b>MGAS40</b>                                     |
|--|---|
| <b>Material-Acoustic mode</b>  | Dopped glass                                      |
| <b>Acoustic Velocity</b>   | Nom V=2520 m/s                                    |
| <b>Optical Wavelength range</b>  | 1300-1600 nm                                      |
| <b>Transmission</b>  | > 95 %  |
| <b>Optical Input / Output polarizations</b>                              | Random or Linear                                  |
| <b>Aperture</b>  | 1 x 2 mm <sup>2</sup>                             |
| <b>Carrier frequency / Frequency shift</b>                               | 40 MHz  |
| <b>Separation angle</b>  | 20.6 mrd @1300 nm                                 |
| <b>Diffraction efficiency<br/>(with TEM00 beam, M<sup>2</sup> ≤ 1.1)</b> | > 80 %  |
| <b>Rise time</b>   | 270 ns /mm (min 160 ns)                           |
| <b>Amplitude modulation bandwidth</b>                                    | > 3 MHz (-3 dB, @600 $\mu\text{m}$ )              |
| <b>Static extinction ratio</b>   | > 2000/1  |
| <b>Max optical power density</b>   | 0.5 W / mm <sup>2</sup>                           |
| <b>Input impedance</b>   | Nom 50 $\Omega$                                   |
| <b>V.S.W.R.</b>  | Nom < 1.5/1                                       |
| <b>RF Power</b>  | Nom 0.3 W, ≤ 0.5 Watt                             |
| <b>Connector</b>   | SMA   |
| <b>Size / Weight</b>   | (Lxlxh) 50.9 x 22.4 x 15.8 mm <sup>3</sup> / 50 g |
| <b>Operating Temperature</b>   | 10 to 40 °C                                       |

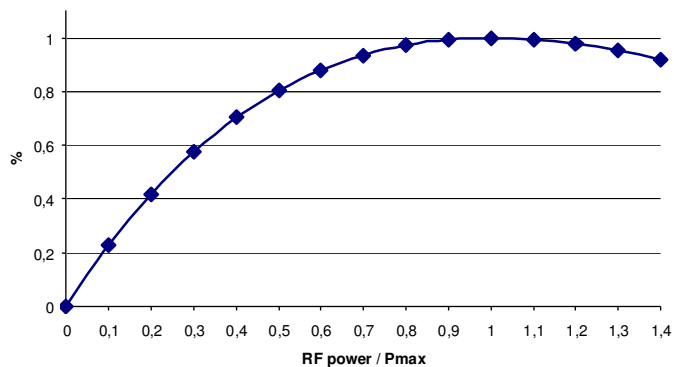
### Relative Diffraction Efficiency vs RF Power

→ Separation angle ( $\Delta\theta$ ) is wavelength ( $\lambda$ ) sensitive:

$$\Delta\theta = \frac{\lambda F}{V}$$

→ RF power (P) is wavelength ( $\lambda$ ) sensitive:

$$\frac{P_1}{P_2} = \frac{\lambda_1^2}{\lambda_2^2}$$



### MGASxx-Ay

**xx** = frequency MHz (40, on request 35 MHz)  
**Y** = (aperture, mm) = 1

### Outline Drawing

sizes in mm

