

MCQ80-A2-L1064-Z32

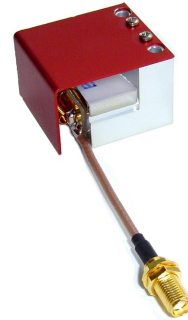
AO MODULATOR/SHIFTER/PULSE PICKER

Product Overview

These modulators and Pulse Pickers are made of Quartz and due to their hard coating with low reflectivity, they have got a high damage threshold. They are designed for short cavities with an optical length of 32 mm and their fast rise time makes them a fast modulator for high power applications. Additionally, they can be used as frequency shifter at +/- 40 MHz.

Features

- 1.06 μm design
- Linear polarization
- Air Cooled
- High Damage threshold



Access to your operating manual

Technical Specifications

Parameter	Specification
Material-Acoustic mode-Velocity	Crystal QUARTZ - 5740 m/s
Optical Wavelength range	1030-1080 nm
Transmission	>99% with hard V-coating
Input / Output Polarization	Linear perpendicular to baseplate
Active Aperture	2 x 2 mm ²
Carrier Frequency / Frequency shift	+/- 80 MHz (other on request)
Operating mode	Bragg
Separation Angle (0-1)	14.8 mrd @ 1064 nm
Rise / Fall time	115 ns / mm
Diffraction Efficiency	Nom 85 % with TEM00 laser beam, $M^2 \leq 1.1$ 1st order beam ellipticity 96% for a 1.7mrd optical full divergence
Analog Amplitude modulation bandwidth (-3 dB)	4.2 MHz @ 1 mm beam diameter
Max optical power density	> 500 MW/cm ²
Input impedance	Nom 50 Ω
V.S.W.R.	Nom < 1.2:1
RF Power / Connector	nom 15 W / SMA
Optical length	32 mm
Heat Exchange	Conduction through baseplate
Size / Weight	(LxIxh) 33 x 36.5 x 25.8 mm ³ / 35 g / IN PRO 343
Operating Temperature	+10 to +40°C Non condensing
Storage Temperature	-40 to +50°C Non condensing

Rise Time (T_r) is beam diameter (Φ) sensitive:

$$T_r = 0.66 \frac{\Phi}{V}$$

Amplitude modulation bandwidth (F_{-3dB}) is rise time (T_r) sensitive:

$$F_{-3dB} = \frac{0.48}{T_r}$$

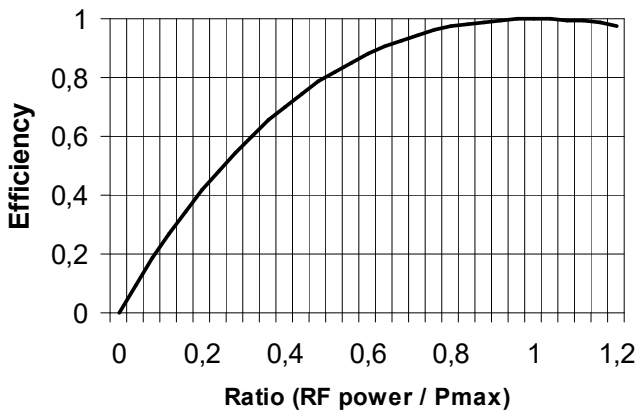
Separation angle ($\Delta\theta$) is wavelength (λ) sensitive:

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

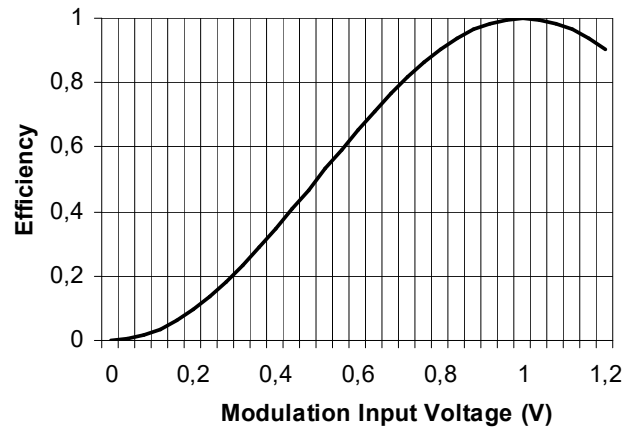
RF power (P) is wavelength (λ) sensitive:

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

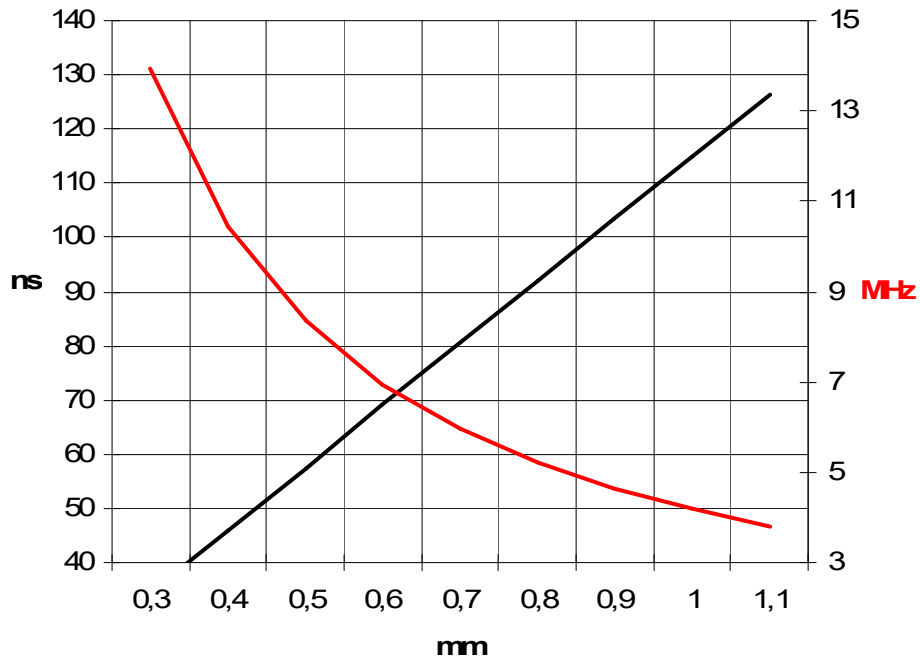
Relative Efficiency versus RF power



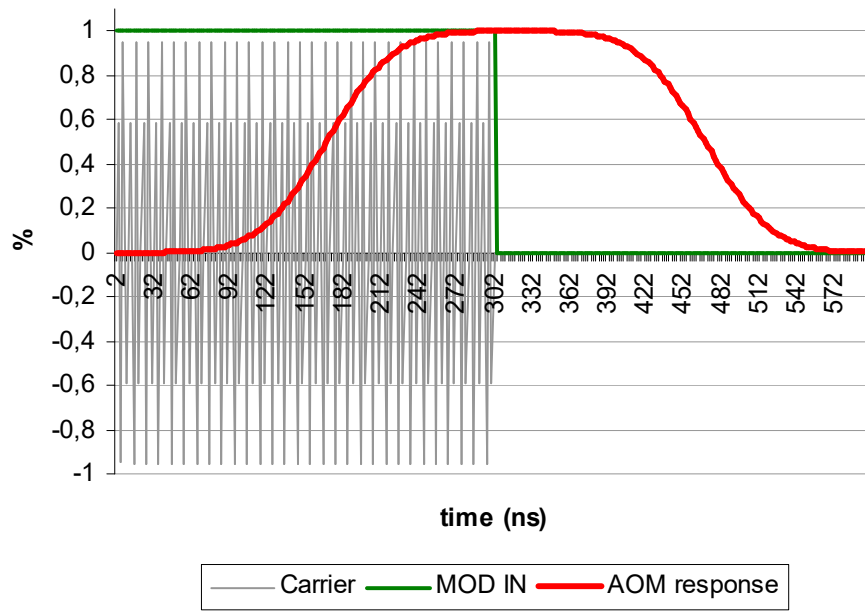
AO relative Efficiency vs driver MOD IN



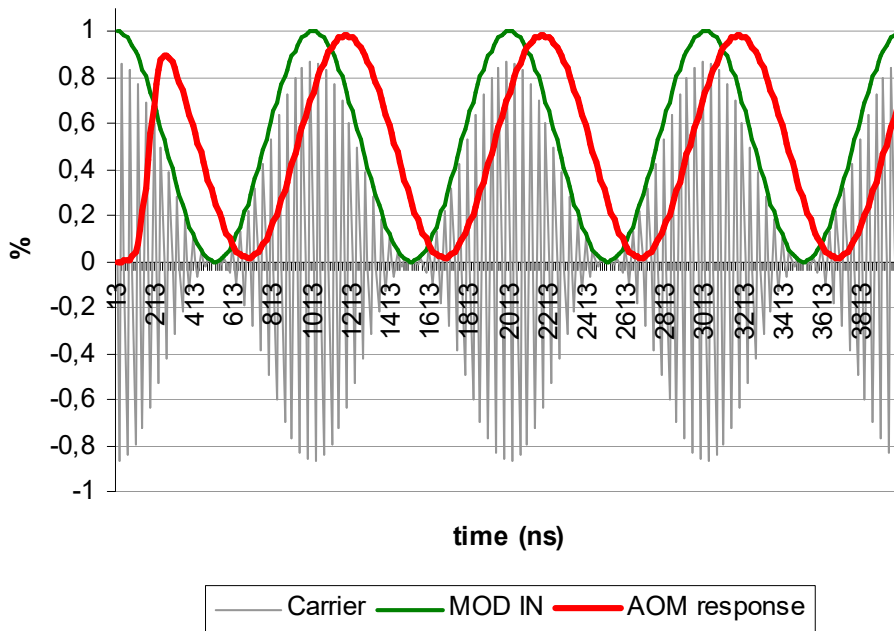
Rise Time (black) / Analog Modulation BW (-3dB) vs Beam diameter



Relative Efficiency / AOM temporal response



Relative Efficiency / AOM temporal response (1MHz)



2 Holes $\varnothing 3,6$
Through

2 Threaded Holes M3
Depth 5mm Maxi

Optical Axis

Variable length of cable and
connector in function of product reference

22,5 Nominal (tolerance "optical axis" 20.5 to 22.5)

Optical Axis

Threaded Hole M3
Depth 8,5mm

Product reference + "-Cxx" + Connector


*"-Cxx" = length of cable in cm
ex : "-C35" = Cable 35cm

*Rf connector:

- "Sa" = SMA Bulkhead Crimp
- "Sap" = SMA Straight Plug
- "Sac" = SMA Angle Plug
- "Sc" = SMC
- "Scc" = SMC Angle Plug
- "Bc" = BNC

ex: QCQ...-C6Sa = QCQ with 6cm cable and
SMA connector.

The cap can be removed

B		23/04/15	G.M	Modif axe optique vue A4.
A		07/04/15	G.M	Plan initial / Initial Drawing
Indice Index	Date	Auteur Author		Modifications
Conception Design		G.M		PLAN D'INTERFACE / OUTLINE DRAWING
Vérification Checking		FLF		
Tolérance Tolerance		ISO 2768mK		Référence / Reference
Echelle Scale		1:1		IN-PRO-343
Format A4		Ce document est la propriété de A.A.SA. Il est strictement interdit de reproduire ce document ou une partie sans l'autorisation de A.A.SA. This document is the property of A.A.SA. It is strictly prohibited to reproduce this document or a part without the authorization of A.A.SA.		 <p>A.A. SA OPTO-ELECTRONIQUE DIVISION 18, rue Nicolas Appert F-91898 ORSAY tel : 08 11 09 76 76 fax : 01 76 91 50 31</p>
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