

MT110-Ax-xx – MT110-BxAx-xx

Product Overview

These free space modulators operate at 110MHz and at various wavelength ranges covering the 450-700nm, 700-1100nm and 980-1100nm. The intended application can be amplitude modulation as well as frequency shifting (fixed and variable) or low resolution deflection.

FEATURES

- Fast rise time/Access time
- Linear polarization
- High diffraction efficiency



SPECIFICATIONS (T=25°C)

PARAMETER	RATING	UNIT
Material-Acoustic mode-Velocity	TeO ₂ -L - 4200	m/s
Carrier Frequency / Frequency shift	+/-110	MHz
Transmission	≥95, nom 98	%
Input / Output Polarization	Linear Vertical	
Rise/fall time (T _r)	160	ns/mm
Static Extinction Ratio	>33	dB
Input impedance	50	Ω
V.S.W.R.	< 1.2:1	
Connector	SMA female	
Size	59.5 x 22.4 x 17.3	mm ³
Weight	Nom 100	g
Packaging	IN PRO 004	
Operating Temperature (non condensing)	+10 to +40	°C
Storage Temperature (non condensing)	-20 to +50	°C
RoHS Compliance	Yes	

Versions

	MT110-A1-400.442	MT110-A1-VIS	MT110-A1-IR	MT110-A1-1064
Wavelength	400-442nm	450-700nm	700-1100nm	980-1100nm
Active aperture	1x2 mm ²	1x2 mm ²	1x2 mm ²	1x2 mm ²
Minimum rise time	16 ns (Ø 0.1 mm)	16 ns (Ø 0.1 mm)	16 ns (Ø 0.1 mm)	16 ns (Ø 0.1 mm)
Separation angle (0-1)	>10.5 mrd	>11.8 mrd	>18.3 mrd	>25.6 mrd
Diffraction efficiency	>85 %	>85 %	>85 %	>75 %
Maximum RF power	1 W	1 W	2.2 W	2.2 W
Maximum Laser power density	0.1 W/mm ²	5 W/mm ² @633nm	10 W/mm ²	10 W/mm ²
Option Variable frequency	110+/-25 MHz MT110-B50A1-400.442 Efficiency typ >75 %	110+/-25 MHz MT110-B50A1-VIS Efficiency typ >70 %	110+/-25 MHz MT110-B50A1-IR Efficiency typ >65 %	110+/-25 MHz MT110-B50A1-1064 Efficiency typ >55 %

MT110-Ax-xx – MT110-BxAx-xx

	MT110-A1.5-400.442	MT110-A1.5-VIS	MT110-A1.5-IR
Wavelength	400-442nm	450-700nm	700-1100nm
Active aperture	1.5x2 mm ²	1.5x2 mm ²	1.5x2 mm ²
Minimum rise time	48 ns (Ø 0.3 mm)	48 ns (Ø 0.3 mm)	48 ns (Ø 0.3 mm)
Separation angle (0-1)	>10.5 mrd	>11.8 mrd	>18.3 mrd
Diffraction efficiency typ	>85 %	>85 %	>85 %
Maximum RF power	1 W	1.3 W	2.2 W
Maximum Laser power density	0.1 W/mm ²	5 W/mm ² @633nm	10 W/mm ²
Option Variable frequency	110+/-25 MHz MT110-B50A1.5-400.442 Efficiency typ >70 %	110+/-25 MHz MT110-B50A1.5-VIS Efficiency typ >60 %	110+/-25 MHz MT110-B50A1.5-IR Efficiency typ >55 %

$$T_r = 0.66 \frac{\phi}{V} * F_{-3dB} = \frac{0.48}{T_r} * \Delta\theta = \frac{\lambda F}{V} * \frac{P_1}{P_2} = \frac{\lambda_1}{\lambda_2}$$

OUTLINE DRAWING IN PRO 004, mm

