

10/20 GHz LiNbO₃ Analog Intensity Modulators

KGMXAN-LN-10/20

Description

The KGMXAN-LN series are high performance intensity modulators designed for analog fiber optic links and high bandwidth analog applications operating at frequencies up to 20 GHz.

The KGMXAN-LN's performance parameters meet the requirements of today's most demanding analog transmission links for military and civil applications. They are specially suitable for microwave links and antenna remoting.

Features

- High Second Harmonic Suppression
- High Bandwidth (up to 20 GHz)
- Broad wavelength range, work in C band and L band
- Bias electrode separated from RF input for easy implementation : no need for bias T
- Low drive voltage

Options

- Internal monitoring photodiode
- Choice of input and output fibers
- 1300 nm band version
- 10 GHz version
- CMD model with integrated RF driver

Related Equipments

- Optimized external RF drivers: KGDR-GA series
- Bias Voltage Controller: KGMB-1000
- KGModBox's

Specifications

Electrical		Min	Typ	Max
V_{π} DC electrodes	V		6.5	7
KGMXAN-LN-10 electro- optic bandwidth S21 @-3 dB	GHz	10	12	
KGMXAN-LN-20 electro- optic bandwidth S21 @-3 dB	GHz	18	20	
KGMXAN-LN-10/20 V_{π} RF electrodes @ 50 kHz	V		5.1	5.5
KGMXAN-LN-10 V_{π} RF electrodes @ 10 GHz	V		5.5	6
KGMXAN-LN-20 V_{π} RF electrodes @ 20 GHz	V		7.5	8

Electrical return loss S11 0-20GHz	dB		- 12	-10
Ripple	dBre		0.5	1
Second harmonic suppression @ 2 MHz	dB		70	
Input 1 dB compression point @ 1.5 GHz	dBm		16	
Input 3rd order intercept (IIP3) @ 1.5 GHz	dBm		27	
Input resistance RF connector	Ω		40	
Input resistance DC connector	Ω		>1 M	
Internal photodiode responsivity (ref: input power)	A/W	0.015	0.025	0.035

Optical

Crystal	Lithium Niobate X-Cut Y-Prop			
Waveguide process	Proton Exchange			
DC extinction ratio	dB	20	22	
Insertion loss	dB		-4	-5
Optical return loss	dB		-40	
Wavelength dependent loss (1480-1600 nm)	dB		0.5	1
Chirp parameter		-0.1	0	0.1
Extinction ratio of internal photodiode	dB		3	6

Interfaces

Input fiber	polarization maintaining , Panda type length : 1.5 meter, buffer diameter : 400 μ m
Output fiber	single mode type , SMF-28 length : 1.5 meter, buffer diameter : 250 μ m
Output fiber (option)	polarization maintaining , Panda type length : 1.5 meter, buffer diameter : 400 μ m
Package size	100 x 15 x 9.5 mm ³
Input RF connector	Wiltron Female K
DC connectors	pin feed through diameter 1.0 mm
Photodiode connectors	pin feed through diameter 1.0 mm

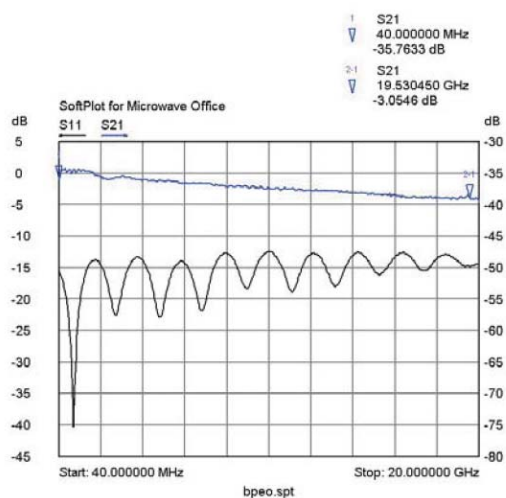
Environmental

Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

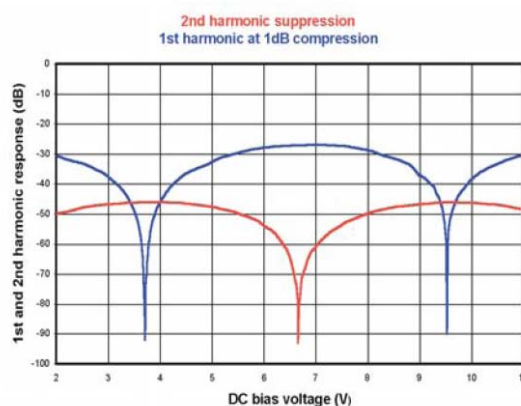
Maximum Ratings

Maximum voltage on DC input	\pm 20V
Maximum RF input power	+28dBm
Maximum optical input power	+23dBm

Typical curves

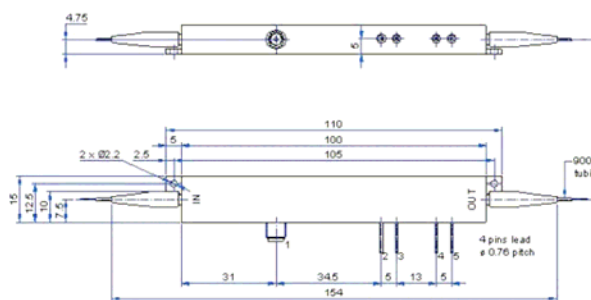
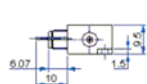


electrical return loss
and electro-optic bandwidth



— first harmonic @ 1 dB comp. point
— second harmonic level

Package footprint



dimensions in mm

- 1 RF INPUT
- 2 GROUND
- 3 BIAS INPUT
- 4 PHOTODIODE CATHODE
- 5 PHOTODIODE ANODE