



PM-XXX-10

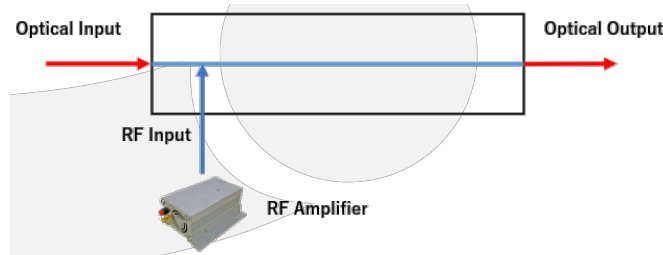
785nm, 10 GHz Phase Modulator



- この変調器は、10GHz LiNbO3モジュレーターです。
- XXXは波長で、785nm, 850nm, 1064nm, 1310nm, 1550nmを取り揃えております。
- 変調器は、低い駆動電圧で位相変調する事が出来ます。
- 低い挿入電圧を最大の送信電圧に変換します。
- この変調器は、偏光維持 (PM) 入力及び出力ファイバーを使用しているためその他の光学系コンポーネントとの統合が容易に出来ます。

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|----------|---|---|
| FEATURES | <ul style="list-style-type: none"> • Up to 10 GHz Bandwidth • Low Optical Loss • 785 nm operating wavelength | <ul style="list-style-type: none"> • Low Drive Voltage • Minimal Back Reflections • Polarization Maintaining |
| USE IN | <ul style="list-style-type: none"> • Coherent Communications • Optical Chirping • Optical Sensing | <ul style="list-style-type: none"> • FM Spectroscopy • Frequency Shifting • Laser Linewidth Broadening |

FUNCTIONAL DIAGRAM



SPECIFICATIONS

GENERAL

Input Optical Power	20 mW max.
Operating Wavelength	785 ± 20 nm
Insertion Loss	3.0 dB typ., 3.5 dB max.
Extinction Ratio	≥ 20 dB min
Optical Return Loss	≤ 30 dB
S21 Bandwidth (RF Port)	7 GHz min, 10 GHz typical @ -3 dB
S11 Return Loss	≤ -10 dB @ 10 GHz
Vπ (RF Port)	6.8 V typ. @ 1 GHz; 10V typ. @ 10 GHz
RF Input Power	+27 dBm max.
Impedance	50 Ω typ.

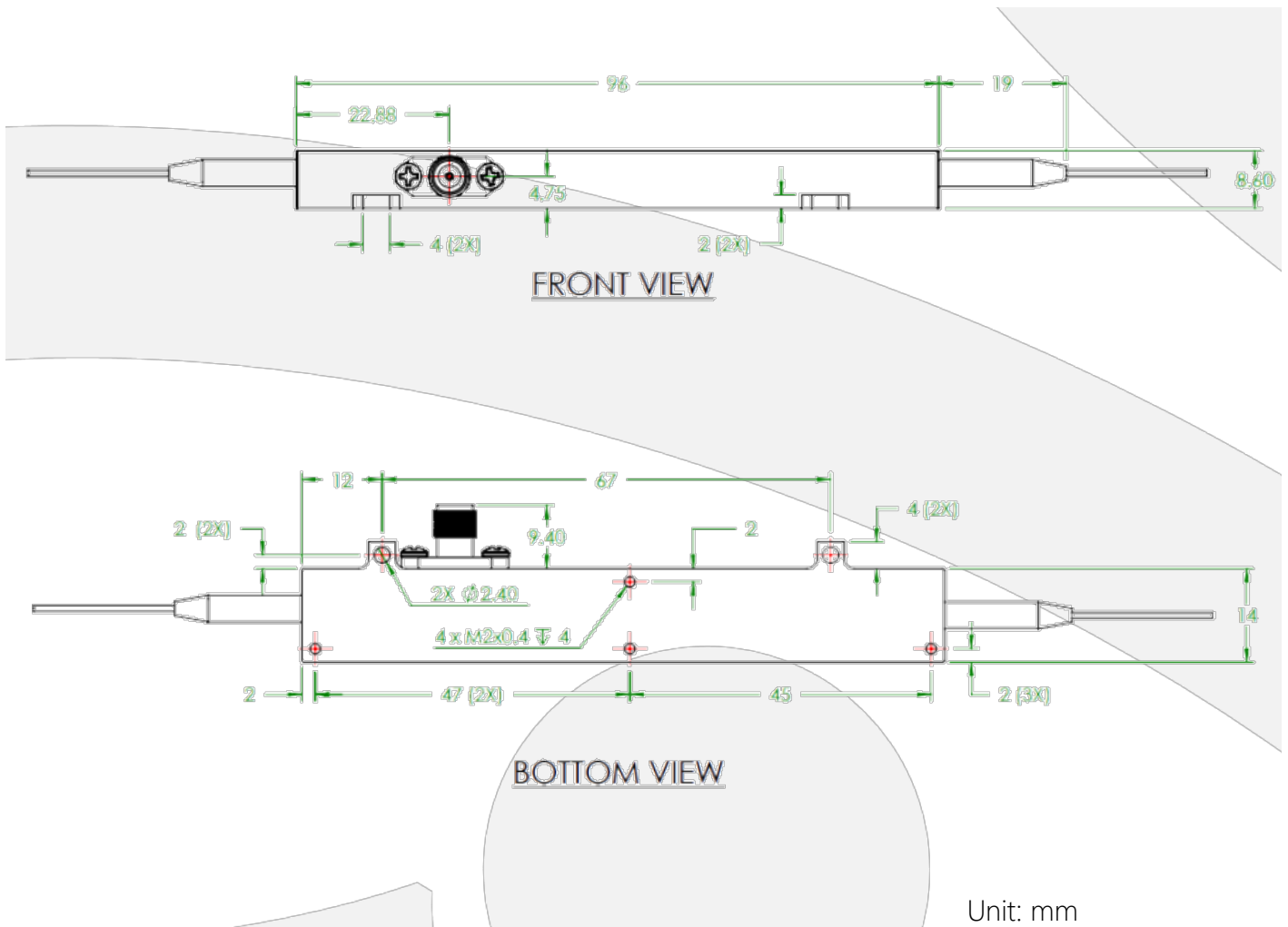
MECHANICAL

Operating Temperature (Standard)	-55 °C to +75 °C
Storage Temperature	-60 °C to +90 °C
Operating Humidity	0% to 90% Relative Humidity
Input/Output Fiber Type	Corning PM85-U400
Input/Output Connector	PM FC/APC, request for others
Material	LiNbO3
RF Port Connectors	K Connector
Cabling	900 μm tubing
Dimensions	3.783" x 0.981" x 0.640"



詳しい問い合わせ：有限会社アミスター
 〒146-0085 東京都大田区久が原1-5-7-302
 TEL:03-6410-4277 FAX:03-6410-4278
 E-mail:info@amistar.jp

MECHANICAL DRAWING

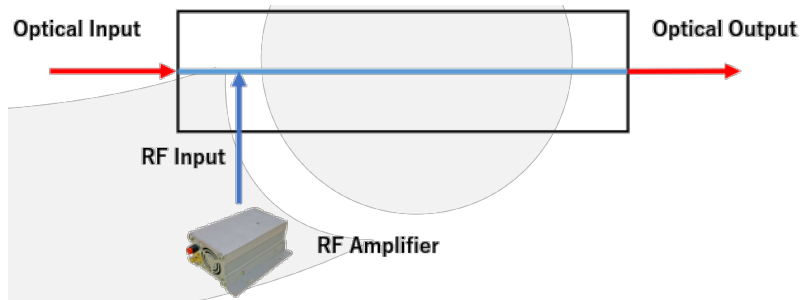




850nm, 10 GHz Phase Modulator

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|----------|---|---|
| FEATURES | <ul style="list-style-type: none"> • Up to 10 GHz Bandwidth • Low Optical Loss • 850 nm operating wavelength | <ul style="list-style-type: none"> • Low Drive Voltage • Minimal Back Reflections • Polarization Maintaining |
| USE IN | <ul style="list-style-type: none"> • Coherent Communications • Optical Chirping • Optical Sensing | <ul style="list-style-type: none"> • FM Spectroscopy • Frequency Shifting • Laser Linewidth Broadening |

FUNCTIONAL DIAGRAM



SPECIFICATIONS

GENERAL

Input Optical Power	20 mW max.
Operating Wavelength	850 ± 20 nm
Insertion Loss	3.0 dB typ., 3.5 dB max.
Extinction Ratio	≥ 20 dB min
Optical Return Loss	≤ 30 dB
S21 Bandwidth (RF Port)	7 GHz min, 10 GHz typical @ -3 dB
S11 Return Loss	≤ -10 dB @ 10 GHz
V π (RF Port)	6.8 V typ. @ 1 GHz; 10V typ. @ 10 GHz
RF Input Power	+27 dBm max.
Impedance	50 Ω typ.

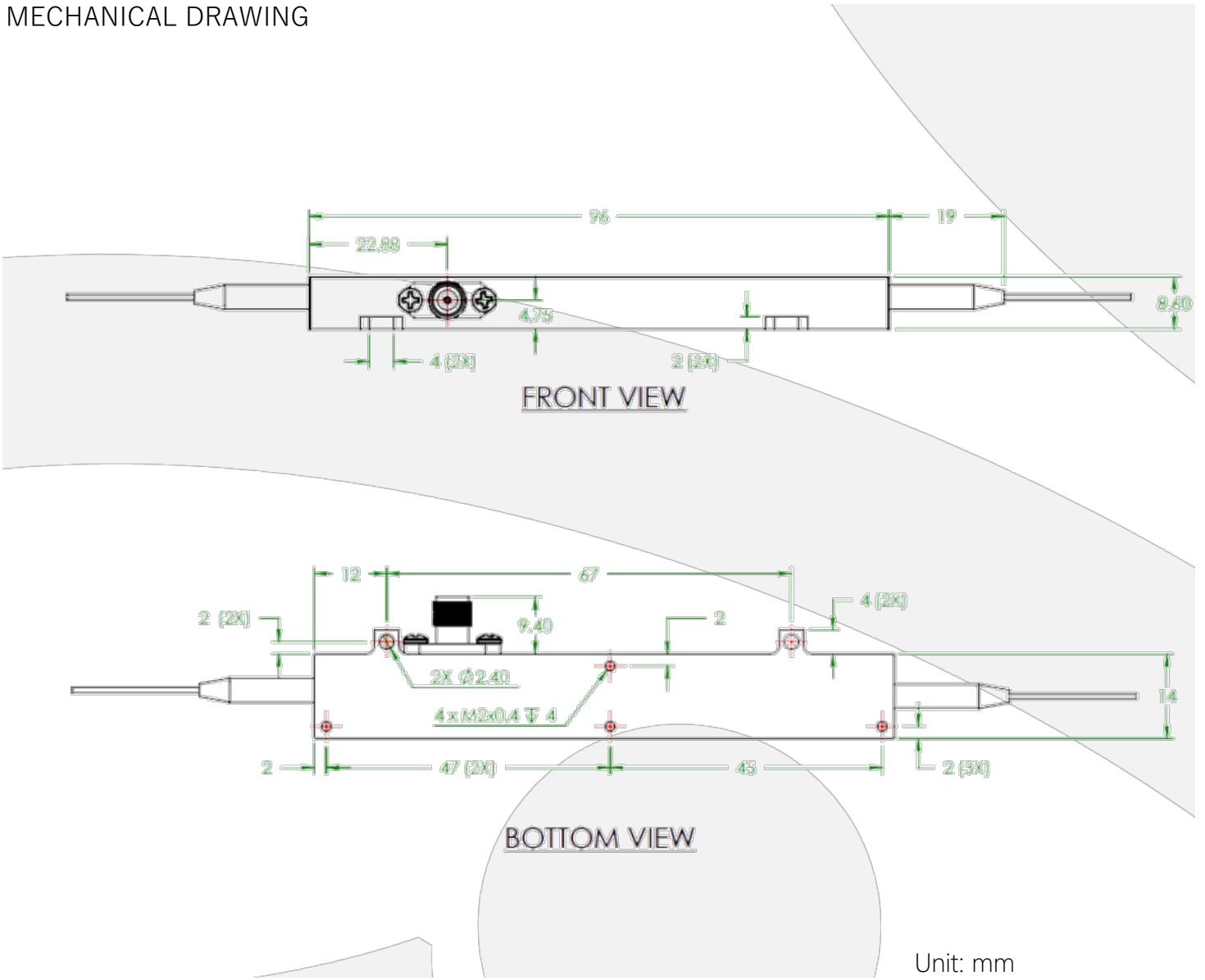
MECHANICAL

Operating Temperature (Standard)	-55 °C to +75 °C
Storage Temperature	-60 °C to +90 °C
Operating Humidity	0% to 90% Relative Humidity
Input/Output Fiber Type	Corning PM85-U400
Input/Output Connector	PM FC/APC, request for others
Material	LiNbO3
RF Port Connectors	K Connector
Cabling	900 μ m tubing
Dimensions	3.783" x 0.981" x 0.640"



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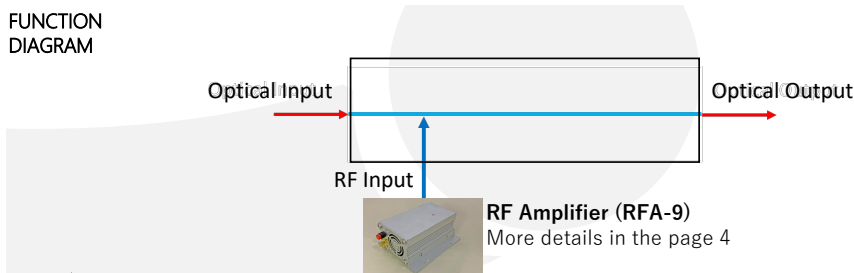
MECHANICAL DRAWING



1064nm, 10 GHz Phase Modulator

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|----------|---|--|
| FEATURES | <ul style="list-style-type: none"> • 1030 nm to 1070 nm • X-cut APE Process • 10 GHz Bandwidth • Low Optical Loss | <ul style="list-style-type: none"> • Minimal Back Reflections • Polarization Maintaining |
|----------|---|--|

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|--------|--|---|
| USE IN | <ul style="list-style-type: none"> • Coherent Communications • Optical Chirping • Optical Sensing | <ul style="list-style-type: none"> • FM Spectroscopy • Frequency Shifting • Laser Linewidth Broadening |
|--------|--|---|

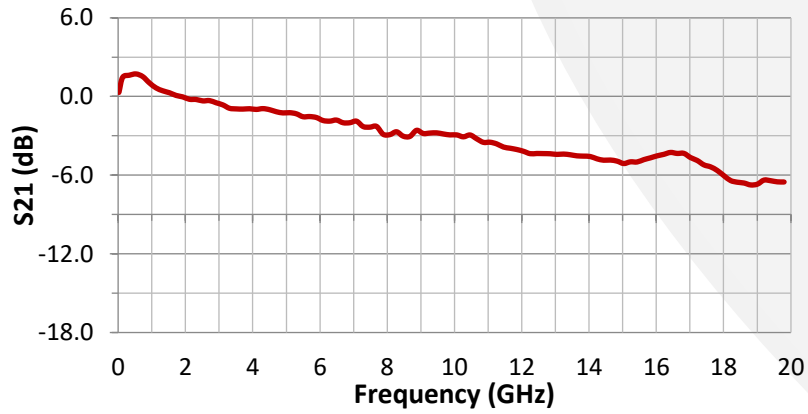


SPECIFICATIONS

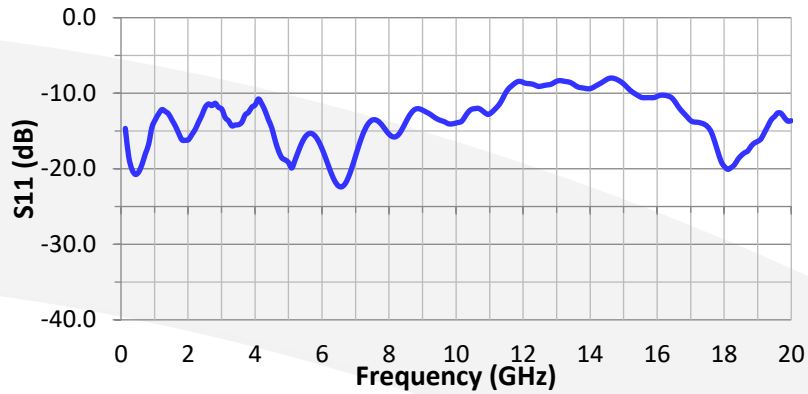
GENERAL	Input Optical Power	60 mW max
	Operating Wavelength	1030 nm to 1070 nm
	Insertion Loss	3.0 dB typical, 3.5 dB max
	Chip Polarization Extinction Ratio	> 60 dB
	Pigtail Polarization Extinction Ratio	≥ 20 dB
	Process	Proton Exchange
	Optical Return Loss	≥ 30 dB
	S ₂₁ Bandwidth	7 GHz min, 10 GHz typical @ -3 dB
	S ₁₁ Return Loss	≤ -10 dB @ 10 GHz
	V _π	6.8 V typical @ 1 GHz 10 V typical @ 10 GHz
	RF Input Power	+27 dBm max
	Impedance	50 Ω typical
	MECHANICAL	Operating Temperature
Storage Temperature		-60°C to +90°C
Operating Humidity		0% to 90% Relative Humidity
Input Fiber		Panda, PM 980
Output Fiber Type		Panda, PM 980
Input Connector		PM FC/APC, others available
Output Connector		PM FC/APC; others available
RF Port Connectors	K Connector	
Cabling	900 μm tubing	
Dimension	3.783" x 0.981" x 0.640"	



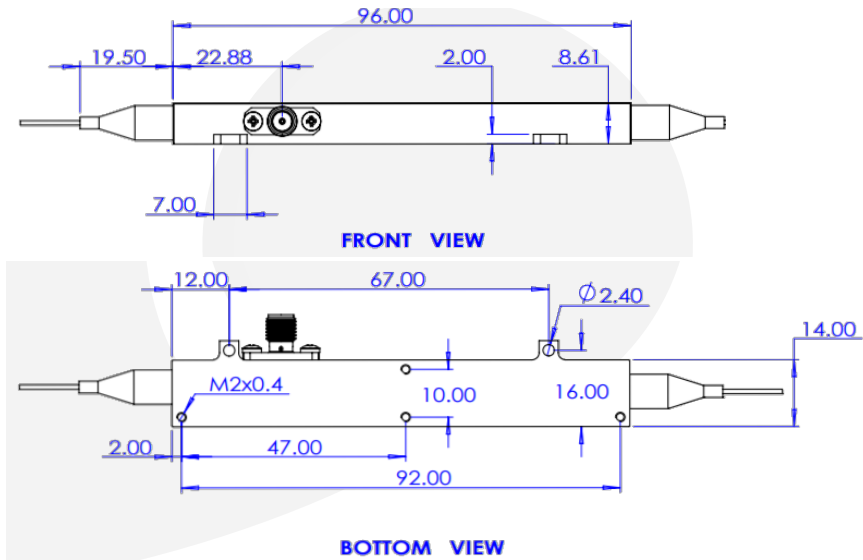
TYPICAL S21
RESPONSE



TYPICAL S11
RESPONSE



MECHANICAL
DRAWING



Available
Accessories

- RFA-9



RFA-9 is a high gain RF amplifier module with 30dBm output and 10V peak to peak. It offers cost-effective solutions for microwave and analog link. Please contact Optilab for more detail.



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1310nm, 10 GHz Phase Modulator

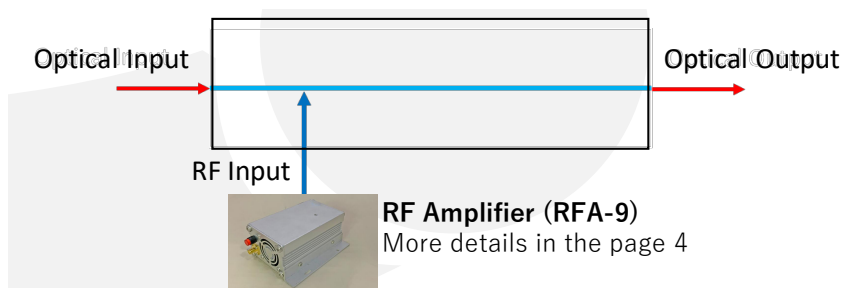
FEATURES

- 10GHz Bandwidth
- X-cut APE Process
- Low Insertion Loss
- Low Drive Voltage
- 1270 nm to 1370 nm
- Minimal Back Reflections
- Chip PER over 60dB

USE IN

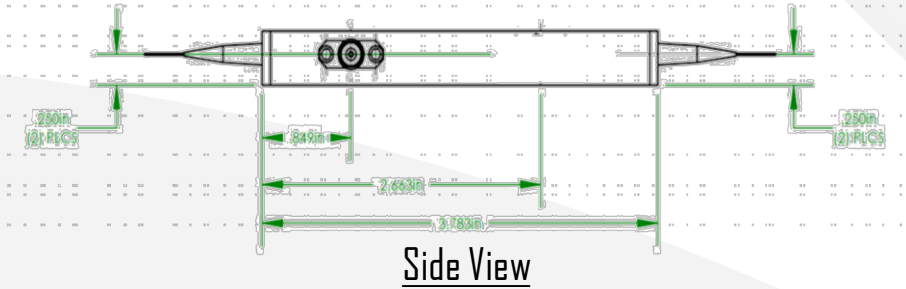
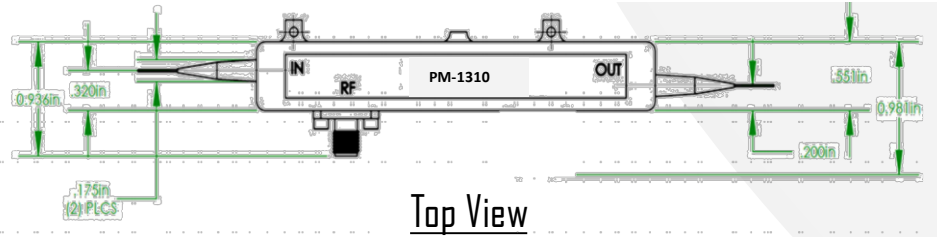
- Optical Chirping
- Research & Development
- Laser Linewidth Broadening
- FM Spectroscopy
- Frequency Shifting

FUNCTION DIAGRAM



SPECIFICATIONS

GENERAL	Input Optical Power	50 mW max
	Operating Wavelength	1270 nm to 1370 nm
	Insertion Loss	4.0 dB typical
	Chip Polarization Extinction Ratio	> 60 dB
	Pigtail Polarization Extinction Ratio	≥ 20 dB
	Process	Proton Exchange
	Optical Return Loss	≥ 30 dB
	S_{21} Bandwidth	8 GHz typical @ -3 dB
	V_{π}	8.8V typ @ 1GHz, 14V typ @ 10GHz
	RF Input Power	+30 dBm max
Impedance	50 Ω typical	
MECHANICAL	Operating Temperature	-55°C to +75°C
	Storage Temperature	-60°C to +90°C
	Operating Humidity	0% to 90% Relative Humidity
	Input Fiber	Panda, PM 13-U25D
	Output Fiber Type	Panda, PM 13-U25D
	Input Connector	PM FC/APC, others available
	Output Connector	PM FC/APC; others available
	RF Port Connectors	K Connector
	Cabling	900 μ m tubing
	Dimension	3.783" x 0.981" x 0.640"



RFA-9-M

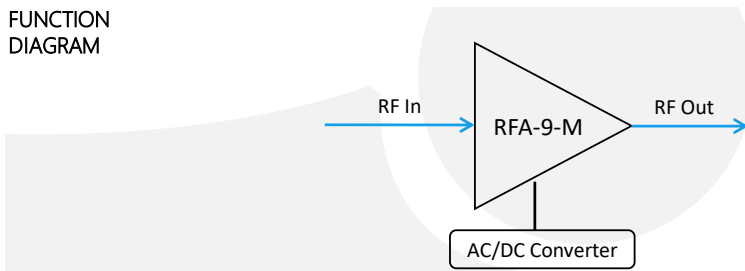
9 GHz High Gain RF Amplifier-Module, 30 dBm



- 薄膜GaAsFET技術を特徴としたRF増幅器モジュールです。
- バランスのとれた回路優れたダイナミックレンジ低反射減衰量で安定した動作が保証されております。RFゲインは動作範囲で35dBを越えています。
- 低ノイズ、高ゲイン、線形設計であるため光リンクでのRFアナログ変調増幅や5Gワイヤレスアプリケーションにも最適です。

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|---|---|
| <p>FEATURES</p> <ul style="list-style-type: none"> • Up to 37 dB Gain • Operational Bandwidth 3 to 9 GHz • Excellent Gain Flatness | <ul style="list-style-type: none"> • Low Noise Figure 3.5 dB • Integrated Heat Sink • 30 dBm Saturation Output |
| <p>USE IN</p> <ul style="list-style-type: none"> • Analog RF Amplification • 5G Wireless Antenna | <ul style="list-style-type: none"> • RF over Fiber Link • Test & Measurement |

FUNCTION
DIAGRAM

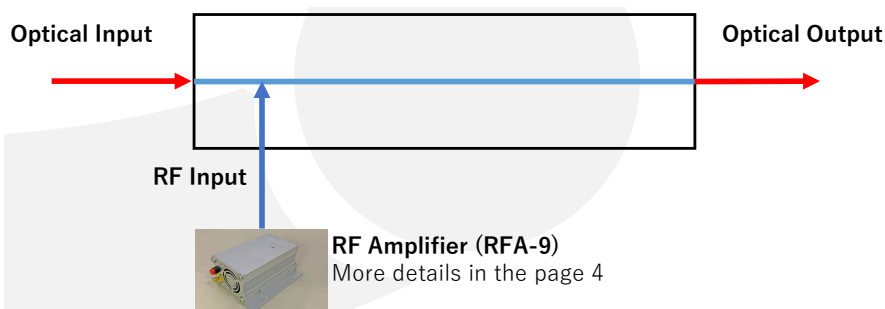




1550nm, 10 GHz Phase Modulator

FEATURES	<ul style="list-style-type: none"> • 10 GHz Bandwidth • Low Optical Loss • Low Drive Voltage 	<ul style="list-style-type: none"> • 1525 nm to 1565 nm • Minimal Back Reflections • Polarization Maintaining
USE IN	<ul style="list-style-type: none"> • Coherent Communications • Optical Chirping • Optical Sensing 	<ul style="list-style-type: none"> • FM Spectroscopy • Frequency Shifting • Laser Linewidth Broadening

FUNCTIONAL DIAGRAM

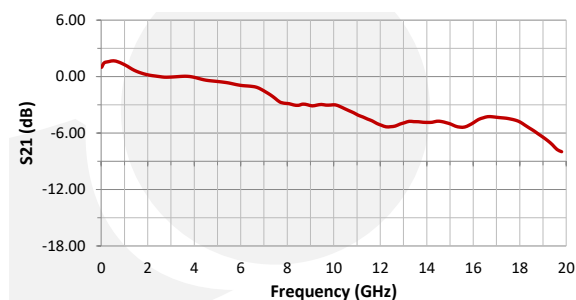


SPECIFICATIONS

GENERAL

Input Optical Power	40 mW max.
Operating Wavelength	1525 nm to 1570 nm
Insertion Loss	3 dB typ., 3.5 dB max.
Polarization Extinction Ratio	≥ 21 dB
Optical Return Loss	≥ 30 dB
S21 Bandwidth	9 GHz typ. @ -3 dB
S11 Return Loss	≤ -10 dB @ 5 GHz
V_{π}	10.5 V typ., 11 V max @ 1 GHz 17 V typ., 18 V max @ 10 GHz
RF Input Power	+30 dBm max.
Impedance	50 Ω typ.

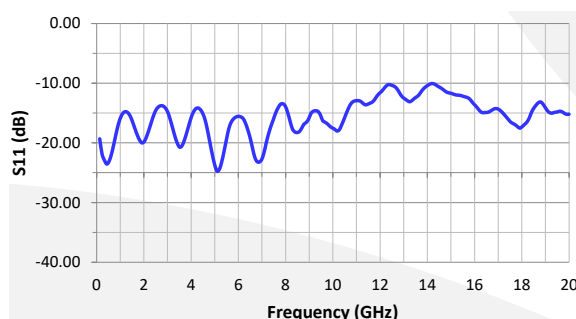
TYPICAL S21 RESPONSE



MECHANICAL

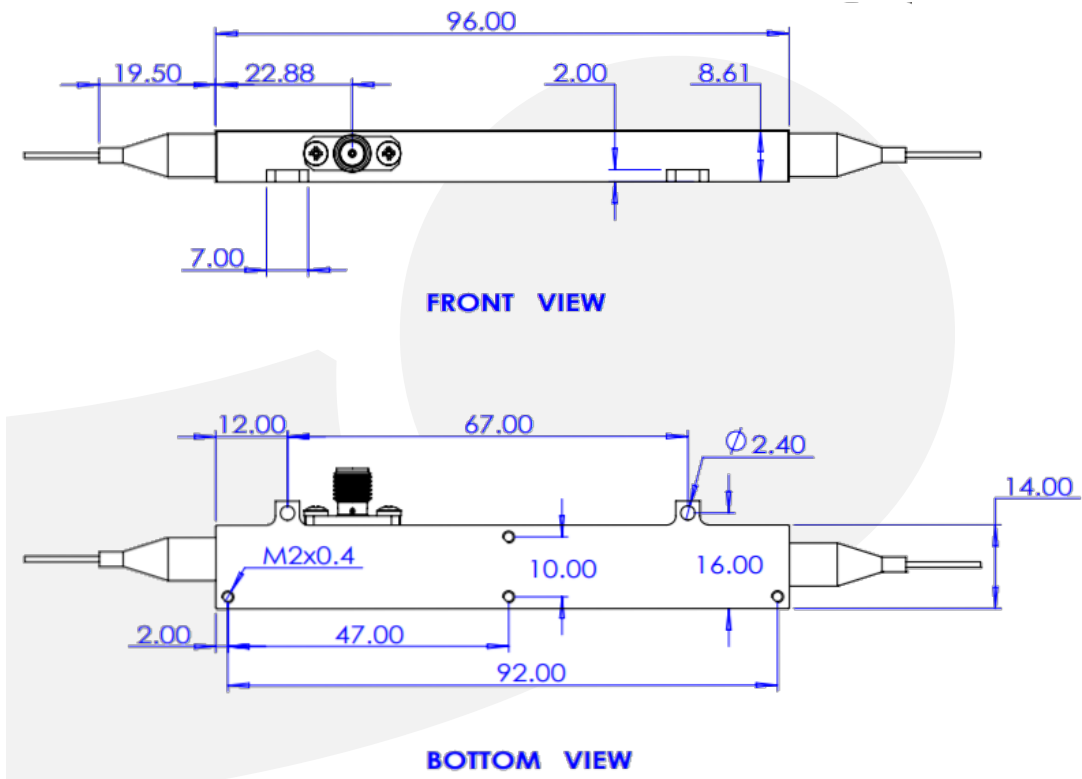
Operating Temperature	-55°C to +75°C
Storage Temperature	-60°C to +90°C
Operating Humidity	0% to 90% Relative Humidity
Input/Output Fiber	Panda - PM 1550
Input/Output Connector	PM FC/APC, request for others
RF Port Connectors	K Connector
Cabling	900 μ m tubing
Dimensions	3.783" x 0.981" x 0.640"

TYPICAL S11 RESPONSE



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MECHANICAL DRAWING



Available Accessories

- RFA-9



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