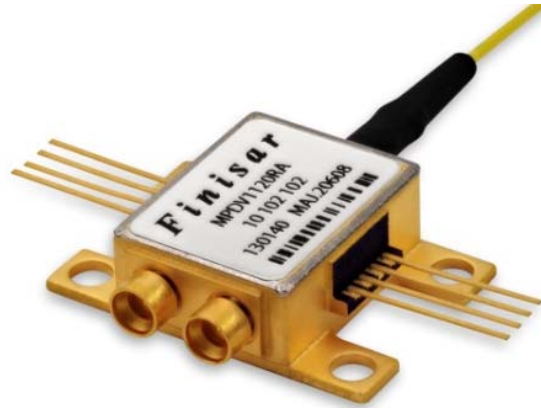

Product Specification

35 GHz SMD Photodetector

MPDV1120RA

PRODUCT FEATURES

- XLMD MSA footprint compliant package
- Waveguide-integrated pin-photodiode
- Typical 35 GHz bandwidth
- Single ended AC coupled output



APPLICATIONS

- 43 Gb/s communication systems
- Transponder and line card designs

The single output photodetector module MPDV1120RA contains a waveguide-integrated pin-photodiode (PD), designed to exhibit optimized high frequency performance in both, amplitude and phase. A linear response up to an optical input power of 10 dBm enables to drive subsequent decision circuits of communication systems directly. The pin-photodiode with on-chip integrated bias network in conjunction with a blocking capacitor for AC coupling is the best choice for 44 Gb/s applications.

ORDERING INFORMATION

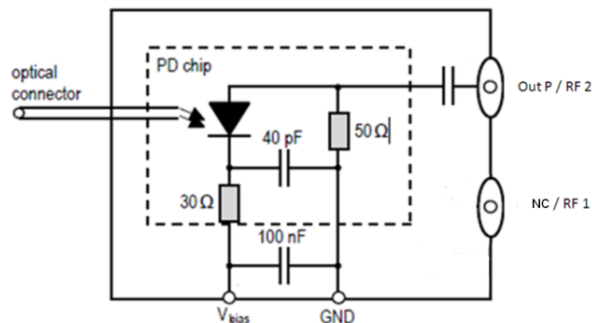
MPDV1120RA-GM-LP

- | | |
|-----|--------------------------------------|
| RA: | = single ended, AC coupled output |
| GM: | = GPPO® compatible, male |
| LP: | = LC/PC optical connector (standard) |

I. Pin Description

# Pin	Symbol	Description
1	V_{bias}	photodiode supply
2,7	GND	ground
3,4	RFU	reserved for future use – please do not connect, internally connected to ground
5,6,8	NC	reserved for future use – not connected
RF1	NC	not connected
RF2	Out P	positive RF output

II. Block Diagram



III. Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photo Diode Reverse Voltage	V_{PD}		-0.3		4	V
Average Optical Input Power	P_{opt}	NRZ			16	dBm
ESD, Output Pins	V_{ESD}	C= 100 pF, R= 1.5 kΩ, HBM	-250		250	V
Fiber Bend Radius			10			mm



Notice

Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product.

Environmental Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{Case}		0	25	75	°C
Relative Humidity	RH	non condensing	5		85	%
Storage Temperature	T_{sto}		-40		85	°C

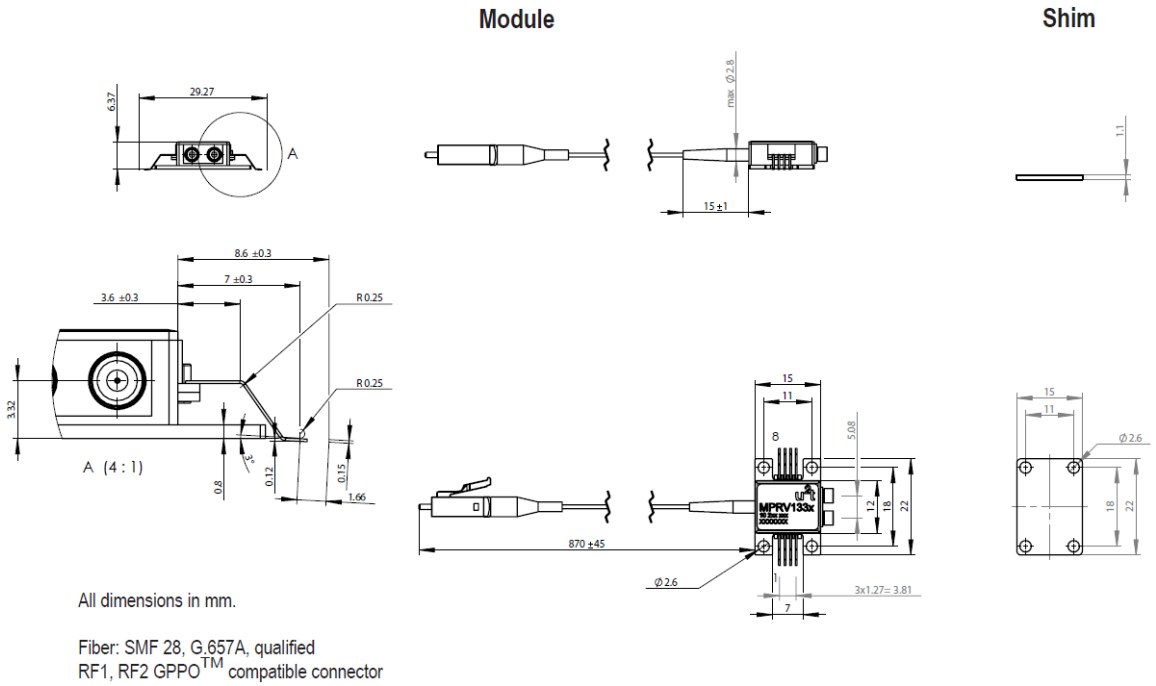
IV. Operating Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Average Optical Input Power	P_{OPT}	40 Gb/s, NRZ			10	dBm
Wavelength Range	λ		1525	1550	1570	nm
Photodiode Bias Voltage	V_{PD}		3.1	3.3	3.5	V

V. Electro-Optical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Fiber length				1230	1280	
Photodiode Dark Current	I_{dark}			10	1000	nA
Photodiode DC Responsivity	R	optimum polarization	0.5	0.6		A/W
DC Responsivity Change Over Temperature	ΔR	100 GHz optical frequency range			0.7	dBo
Polarization Dependent Loss	PDL			0.3	0.9	dB
Optical Return Loss	ORL		27	30		dB
3dB Cut-off Frequency	f_{3dB}	$P_{opt} = -3$ dBm	31			GHz
4dB Cut-off Frequency	f_{4dB}	$P_{opt} = -3$ dBm	46			GHz
Output Reflection Coefficient	S_{22}	0.5 - 10 GHz		-10		dB
		10 - 35 GHz		-5		
Notes:						
1. Typical optical and electrical specifications refer to typical operation conditions						

VI. Mechanical Specifications



VII. Revision History

Revision	Date	Description
A1	04/09/2014	• Document created.

Notes

- Any trademarks used in this document are properties of their respective owners.
- Finisar Corporation reserves the right to make changes without notice.

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