

# 10458D 10 GHz High Power PIN Photodiode Receiver



The 10458 PIN microwave photodiode receiver incorporates a high-speed planar PIN photodiode with low-noise bias and monitor electronics. The unit installs in EMCORE's System 10000 3 RU equipment rack providing a highly reliable, high power photodiode receiver. The receiver is well matched over the operating frequency band, thereby simplifying high-speed integration.



## Applications

- Antenna Remoting
- Military Communications
- Phased Array Antennas
- Electronic Warfare (EW) Systems
- Delay Lines for Radar Calibration

## Features

- Highly Reliable Planar Photodiode Technology
- High Power Capability
- Bandwidth Up to 10 GHz
- Good RF Matching, 12 dB Typical

## Performance Highlights

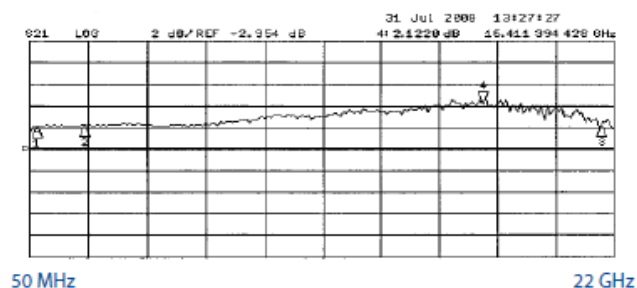
Parameter	Min	Typ	Max	Units
Storage Temperature	-40	-	+85	°C
Operating Temperature	-10	25	+50	°C
Responsivity	0.7	-	-	A/W
Receiver Gain (1 GHz)	-9.1	-	-	dB (A/W)
Dark Current (25°C)	-	-	5	nA
Max Current	-	-	10	mA
Optical Input	-	-	11	dBm
RF Return Loss	8	12	-	dB
Optical Wavelength Range	1280	-	1580	nm
Optical Return Loss	-	-	-40	dB
Module DC Current (Pin 1)	-	-	200	mA

## RF Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Units
Bandwidth	$f_{3dB}$	10458D	0.05	-	10	GHz
Impedance	Z	Resistively Matched SMA Connector	-	50	-	Ohm
S21 Flatness	-	50 MHz - 10 GHz	-	2	4	dB p-p

Specified characteristics apply for the recommended operating conditions at beginning of life, 25°C unless noted otherwise.

## Typical S21 Data



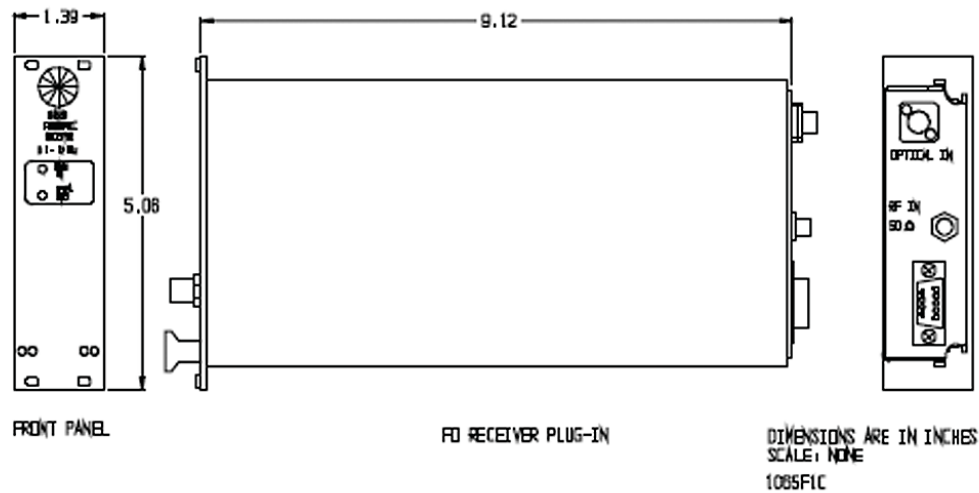
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## Pinout

Pin Number	Description
1	+15 VDC
2	No Connection
3	No Connection
4	Ground
5 <sup>1</sup>	Ground
6 <sup>1</sup>	Photodiode Current Monitor 1 V / 1mA
7 <sup>1,2</sup>	Received Optical Power Alarm
8 <sup>1</sup>	No Connection
9 <sup>1</sup>	No Connection

1. Pins 5-9 can be monitored at the rear of the System 10000 chassis
2. Open collector alarm, external 1K pull-up required. Capable of sinking 20 mA

## Outline Information



## Ordering Information

Model Number	Description
10458D-SA	Receiver 10 GHz, SMA, AC Coupled, SC/APC
10458D-FA	Receiver 10 GHz, SMA, AC Coupled, FC/APC
10990A	System 10000 Equipment Chassis, 3 RU
10901G-NA	System 10000 Power Supply, US Power Cord
10901G-UK	System 10000 Power Supply, UK Power Cord
10901G-EU	System 10000 Power Supply, EU Power Cord