

10458C, D, E, F

PIN Microwave Photodiode Receiver

MICROWAVE



The 10458 PIN microwave photodiode receiver incorporates a high-speed planar PIN photodiode, with low-noise bias and monitor electronics. The units install in Emcore's System 10000 3RU 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.



Features

- Highly reliable planar photodiode technology
- High power capability
- Bandwidth up to 22 GHz
- Good RF matching, 12 dB typ.

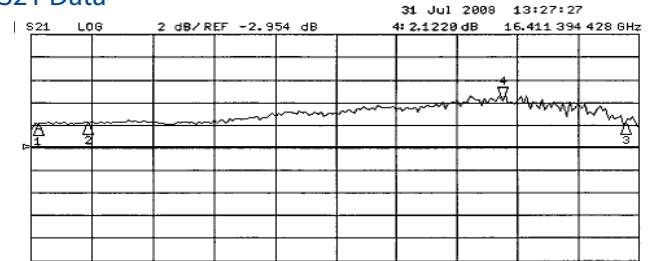
Performance Highlights

Parameter	Min	Typical	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 (25C)	-	-	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

Applications

- Antenna Remoting
- Military Communications
- Phased Arrays
- EW
- Delay Lines for Radar Calibration

Typical S21 Data



50 MHz

22 GHz

RF Characteristics

Parameter	Symbol	Condition	Min	Typical	Max	Units
Bandwidth	f_{3dB}	10458C	0.05	-	5	GHz
		10458D	0.05	-	10	
		10458E	0.05	-	20	
		10458F	0.05	-	22	
Impedance	Z	Resistively matched SMA connector	-	50	-	Ohm
S21 Flatness	-	50 MHz - 5 GHz (C)	-	2	4	dB p-p
		50 MHz - 10 GHz (D)	-	2	4	
		50 MHz - 20 GHz (E)	-	3	5	
		50 MHz - 22 GHz (F)	-	5	6	

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

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Ordering Information

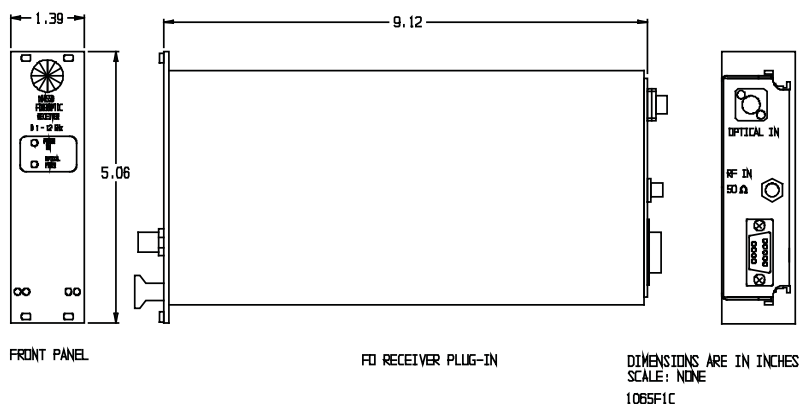
Model Number	Description
10458C-SA	Receiver 5 GHz, SMA, AC Coupled, SC/APC
10458C-FA	Receiver 5 GHz, SMA, AC Coupled, FC/APC
10458D-SA	Receiver 10 GHz, SMA, AC Coupled, SC/APC
10458D-FA	Receiver 10 GHz, SMA, AC Coupled, FC/APC
10458E-SA	Receiver 20 GHz, SMA, AC Coupled, SC/APC
10458E-FA	Receiver 20 GHz, SMA, AC Coupled, FC/APC
10458F-SA	Receiver 22 GHz, SMA, AC Coupled, SC/APC
10458F-FA	Receiver 22 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

Pinout

Pin Number	Description
1	+15VDC
2	No Connection
3	No Connection
4	Ground
5 ¹	Ground
6 ¹	Photodiode Current Monitor 1v / 1 mA
7 ^{1,2}	Received Optical Power Alarm
8 ¹	No Connection
9 ¹	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 Drawing



Rev: May 12, 2009