

10458C - 5 GHz

High Power PIN Photodiode Receiver



MICROWAVE



The 10458C 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 5 GHz
- Good RF matching, 12 dB typ.

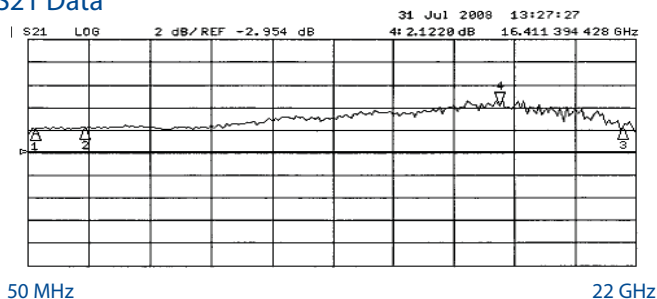
Performance Highlights

| 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



RF Characteristics

| Parameter | Symbol | Condition | Min | Typical | Max | Units |
|--------------|-----------|-----------------------------------|------|---------|-----|--------|
| Bandwidth | f_{3dB} | 10458C | 0.05 | - | 5 | GHz |
| Impedance | Z | Resistively matched SMA connector | - | 50 | - | Ohm |
| S21 Flatness | - | 50 MHz – 5 GHz | - | 2 | 4 | dB p-p |

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

10458C - 5 GHz

High Power PIN Photodiode Receiver



MICROWAVE

Ordering Information

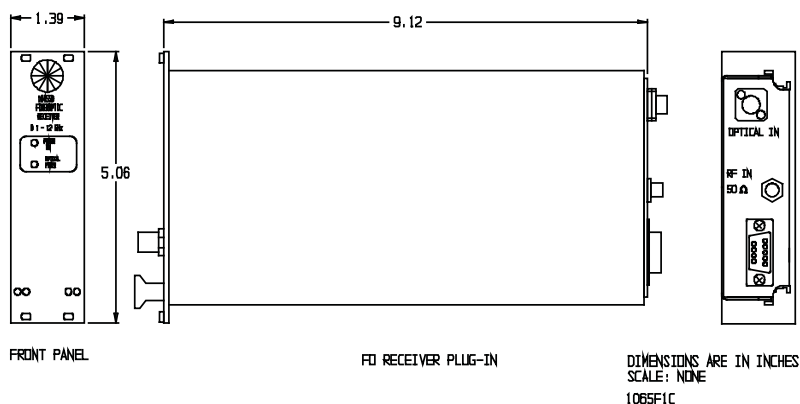
| Model Number | Description |
|--------------|------------------------------------------|
| 10458C-SA | Receiver 5 GHz, SMA, AC Coupled, SC/APC |
| 10458C-FA | Receiver 5 GHz, SMA, AC Coupled, FC/APC |
| 10990A | System 10000 Equipment Chassis, 3 RU |
| 10901G-NA | System 10000 Power Supply, US Power 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: December 10, 2010