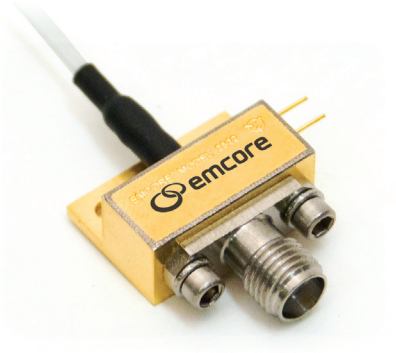
2522 Microwave Packaged Photodiode

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Applications

- Antenna Remoting
- Military Communications
- Phased Arrays
- Electronic Warfare (EW) Systems
- Delay Lines

Features

- Highly Reliable Planar Photodiode Technology
- FC/APC or SC/APC
- High Power Capability
- High Breakdown Voltage
- Bandwidth up to 22 GHz
- Good RF matching, 12 dB typ.
- Hermetically Sealed

The 2522 packaged photodiode incorporates a high-speed planar PIN photodiode to provide a highly reliable, high-power photodiode component. This package is well suited for receiver applications with optical preamplification. The diode is well matched over the microwave frequency band, thereby simplifying high-speed integration.

GENUINE ORTEL TECHNOLOGY

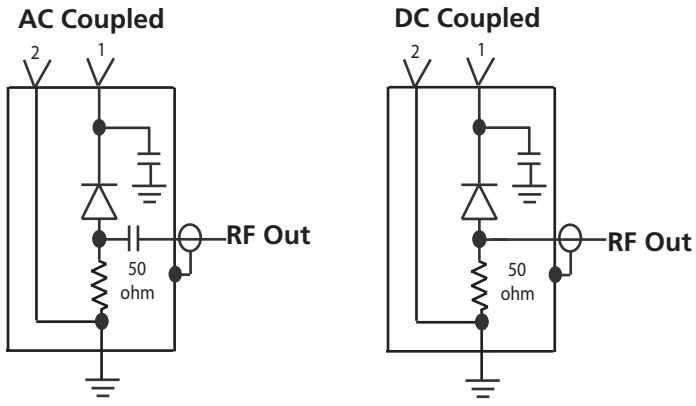
Performance Highlights

Parameter	Min	Typical	Max	Units
Operating Temperature	-40	25	+85	°C
Bandwidth	0.05	-	22	GHz
Responsivity, 1310 / 1550 nm	0.7	-	-	A/W
Dark Current (25 C)	-	-	5	nA
Max Optical Input	-	-	10	dBm
Max Current	-	-	12	mA
RF Return Loss	8	12	-	dB
Group Delay	-	40	-	ps, p-p
Optical Wavelength Range	1280	-	1580	nm
Breakdown Voltage (IR = 10 µA)	15	-	-	V
Optical Return Loss	-	-	-40	dB
Photodiode Bias Voltage	-	5	12	V
Storage Temperature	-40	-	+85	°C

Pinout

Model Number	Symbol	Function
1	V_{PD}	Photodiode Bias
2	GND	Case Ground

Schematic



- For DC coupled version, do not connect RF output to a DC voltage greater than the photodiode's bias voltage.

Information contained herein is deemed to be reliable and accurate as of the issue date. EMCORE reserves the right to change the design or specifications at any time without notice.

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Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Units
Storage Case Temperature Range	T_{STG}	-40	85	˚C
Forward Current	I_F	-	5	mA
Reverse Bias Voltage	V_R	-	15	V
Lead Soldering Temperature/Time	-	-	250/5	˚C/sec
Relative Humidity (non-condensing)	RH	-	85	%

Electrical/Optical Characteristics

Parameter	Symbol	Condition	Min	Typical	Max	Units
Operating Temperature	T_{OP}	Referenced to base of package	-40	25	85	˚C
Bias Voltage	V_R	-	-	5	12	V
Capacitance	C	-	-	-	0.15	pF
Optical Input			-	-	10	dBm
Responsivity	R	1310 / 1550 nm	0.7	-	-	A/W
Dark Current	I_{DARK}	25°C 85°C	- -	- -	5 50	nA
Optical Return Loss	ORL	-	-	-	-40	dB
Wavelength	λ	-	1280	-	1580	nm

RF Characteristics

Parameter	Symbol	Condition	Min	Typical	Max	Units
Bandwidth	f					
AC Coupled		2522A 2522B 2522C	0.05 0.05 0.05	- - -	10 20 22	GHz
DC Coupled		2522A 2522B 2522C	0.01 0.01 0.01	- - -	10 20 22	
Impedance	Z	Resistively matched SMA connector	-	50	-	Ohm
Flatness - AC Coupled	S21	50 MHz – 10 GHz 50 MHz – 20 GHz (B & C only) 50 MHz – 22 GHz (C only)	- - -	2 3 4	4 5 6	dB p-p
Flatness - DC Coupled		10 MHz – 10 GHz 10 MHz – 20 GHz (B & C only) 10 MHz – 22 GHz (C only)	- - -	2 3 4	4 5 6	
Return Loss	RL		8	12	-	dB
Group Delay Flatness [2]	GD		-	< 40	-	ps, p-p

1. Specified characteristics apply for the recommended operating conditions at beginning of life, 25°C, unless noted otherwise.
2. 5% smoothing.

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2522 Microwave Packaged Photodiode

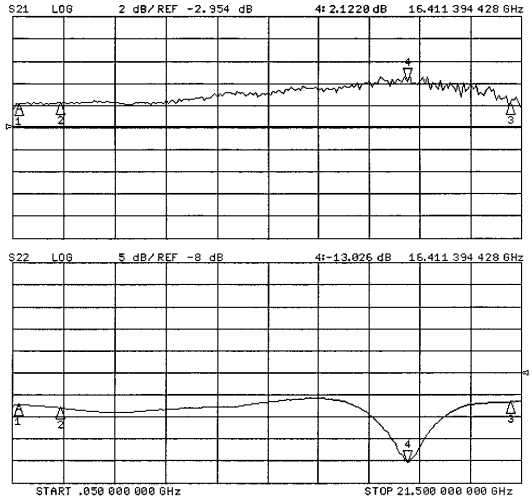
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Ordering Information – Model Number Options

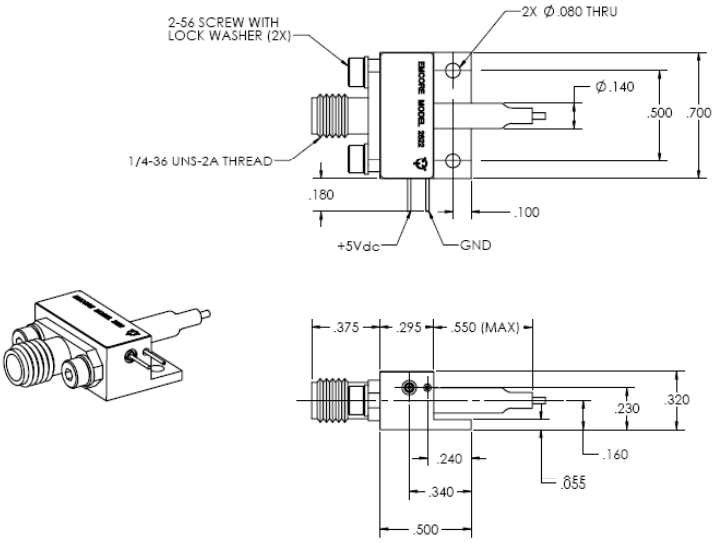
Model Number	Description
2522A-SF-AC-SA	Photodiode 10 GHz, SMA, AC Coupled, SC/APC
2522B-SF-AC-SA	Photodiode 20 GHz, SMA, AC Coupled, SC/APC
2522C-SF-AC-SA	Photodiode 22 GHz, SMA, AC Coupled, SC/APC
2522A-SF-DC-SA	Photodiode 10 GHz, SMA, DC Coupled, SC/APC
2522B-SF-DC-SA	Photodiode 20 GHz, SMA, DC Coupled, SC/APC
2522C-SF-DC-SA	Photodiode 22 GHz, SMA, DC Coupled, SC/APC

Model Number	Description
2522A-SF-AC-FA	Photodiode 10 GHz, SMA, AC Coupled, FC/APC
2522B-SF-AC-FA	Photodiode 20 GHz, SMA, AC Coupled, FC/APC
2522C-SF-AC-FA	Photodiode 22 GHz, SMA, AC Coupled, FC/APC
2522A-SF-DC-FA	Photodiode 10 GHz, SMA, DC Coupled, FC/APC
2522B-SF-DC-FA	Photodiode 20 GHz, SMA, DC Coupled, FC/APC
2522C-SF-DC-FA	Photodiode 22 GHz, SMA, DC Coupled, FC/APC

Typical S21 / S22 Data



Outline Drawing



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