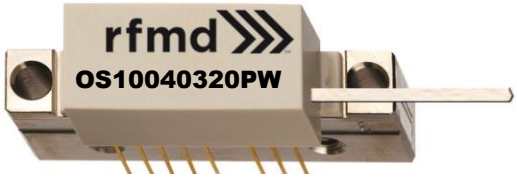
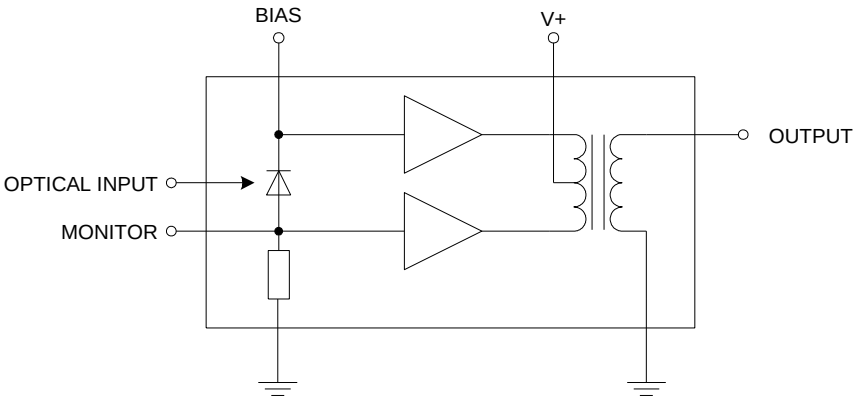
OS10040320PW

GaAs Optical Receiver
40MHz to 1000MHz



Package: SOT-115J

The OS10040320PW is a hybrid high dynamic range optical receiver amplifier module. Two of the module pins are for connection to 24V (DC), one for amplifier supply voltage, the other for the PIN diode bias. The module contains a single mode optical input suitable for wavelengths from 1290nm to 1600nm, a terminal to monitor the PIN diode current, and an electrical output with an impedance of 75Ω.



Features

- Superior Return Loss Performance
- Extremely Low Distortion
- Optimal Reliability
- Very Low EINC
- Standard CATV Outline
- Excellent Flatness
- 260mA Max. at 24V+

Applications

- 40MHz to 1000MHz CATV Amplifier Systems

Ordering Information

OS10040320GW-012	Box with 3 Pieces
OS10040320GW-013	Box with 3 Pieces
OS10040320GW-014	Box with 3 Pieces
OS10040320GW-015	Box with 3 Pieces
OS10040320GW-016	Box with 3 Pieces
OS10040320GW-017	Box with 3 Pieces

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RF Micro Devices Inc. 7628 Thorndike Road, Greensboro, NC 27409-9421
For sales or technical support, contact RFMD at +1.336.678.5570 or customerservice@rfmd.com.

DS140319

Absolute Maximum Ratings

Parameter	Rating	Unit
Frequency Range	40 to 1000	MHz
Optical Input Power (continuous)	5	mW
ESD Sensitivity according to MIL Standard 1686C (Human Body Model; R = 1.5kΩ, C = 100pF)	500	V
Storage Temperature	-40 to +85	°C
Operating Mounting Base Temperature	-20 to +85	°C
Minimum Fiber Bending Radius	35	mm
Maximum Tensile Strength	5	N

Caution! ESD sensitive device.

RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2011/65/EU.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
General Performance					**V+ = 24V; T_{MB} = 30°C; Z_L = 75Ω**
Responsivity	3000	3150		V/W	f = 1000MHz, λ = 1310nm
Slope[1]	0		2.0	dB	f = 40MHz to 1000MHz
Flatness of O/E Response		<0.7	1.0	dB	f = 40MHz to 1000MHz (measured peak to valley)
Optical Input Return Loss	45.0			dB	
Output Return Loss	15.0	17.0		dB	f = 40MHz to 1000MHz
Equivalent Input Noise		4.5	5.0	pA/ √Hz	f = 40MHz to 400MHz
		5.0	5.5	pA/ √Hz	f = 400MHz to 1000MHz
Spectral Sensitivity	0.88			A/W	λ = (1310 ± 20)nm
	0.90			A/W	λ = (1550 ± 20)nm
Optical Wavelength	1290		1600	nm	
Total Current Consumption (DC)		255	260	mA	module pin 4 and 5 connected to V+
Photodiode Bias Current		6.0	10.0	mA	
Distortion Data					**V+ = 24V; T_{MB} = 30°C; Z_L = 75Ω**
Second Order Distortion[2]		-75	-70	dBc	fm = 54MHz; f1 = 187.25MHz; f2 = 133.25MHz
		-72	-67	dBc	fm = 446.5MHz; f1 = 97.25MHz; f2 = 349.25MHz
		-70	-65	dBc	fm = 548.5MHz; f1 = 109.25MHz; f2 = 439.25MHz
		-65	-61	dBc	fm = 746.5MHz; f1 = 133.25MHz; f2 = 613.25MHz
		-64	-60	dBc	fm = 854.5MHz; f1 = 133.25MHz, f2 = 721.25MHz
Third Order Distortion[3]		-75	-70	dBc	fm = 55.25MHz; f1 = 109.25MHz; f2 = 133.25MHz; f3 = 187.25MHz
		-75	-70	dBc	fm = 445.25MHz; f1 = 193.25MHz; f2 = 349.25MHz; f3 = 97.25MHz.
		-72	-68	dBc	fm = 547.25MHz; f1 = 217.25MHz; f2 = 439.25MHz; f3 = 109.25MHz
		-72	-67	dBc	fm = 745.25MHz; f1 = 133.25MHz; f2 = 265.25MHz; f3 = 613.25MHz
		-72	-67	dBc	fm = 853.25MHz; f1 = 133.25MHz; f2 = 265.25MHz; f3 = 721.25MHz

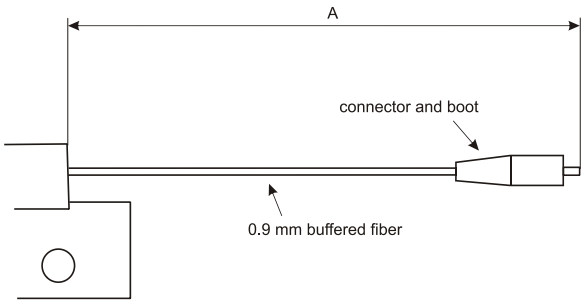
1. Slope is defined as the difference between the O/E response at the start frequency and the O/E response at the stop frequency.
2. Two laser test; each laser with 40% OMI; Popt = 1mW (total).
3. Three laser test: each laser with 60% OMI: Popt = 1mW (total).

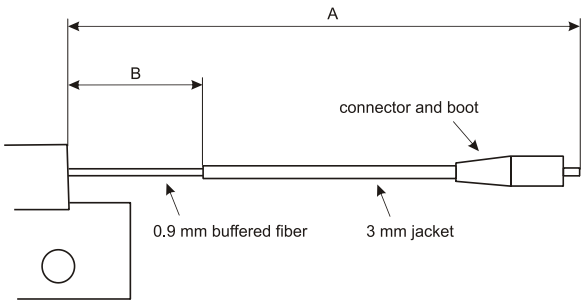
Cable Lengths and Connector Types

Tab	Dimension A				Optical Connector Type
	Inches	Tolerance	mm	Tolerance	
-012	33.4	-4 to +0.5	848	-102 to +13	FC/APC
-013	33.4	-4 to +0.5	848	-102 to +13	SC/APC
-014	37.5	-3.5 to +0.5	952	-89 to +13	FC/APC
-015	37.5	-3.5 to +0.5	952	-89 to +13	SC/APC
-016	21.1	-1.5 to +0.5	536	-38 to +13	FC/APC
-017	21.1	-1.5 to +0.5	536	-38 to +13	SC/APC

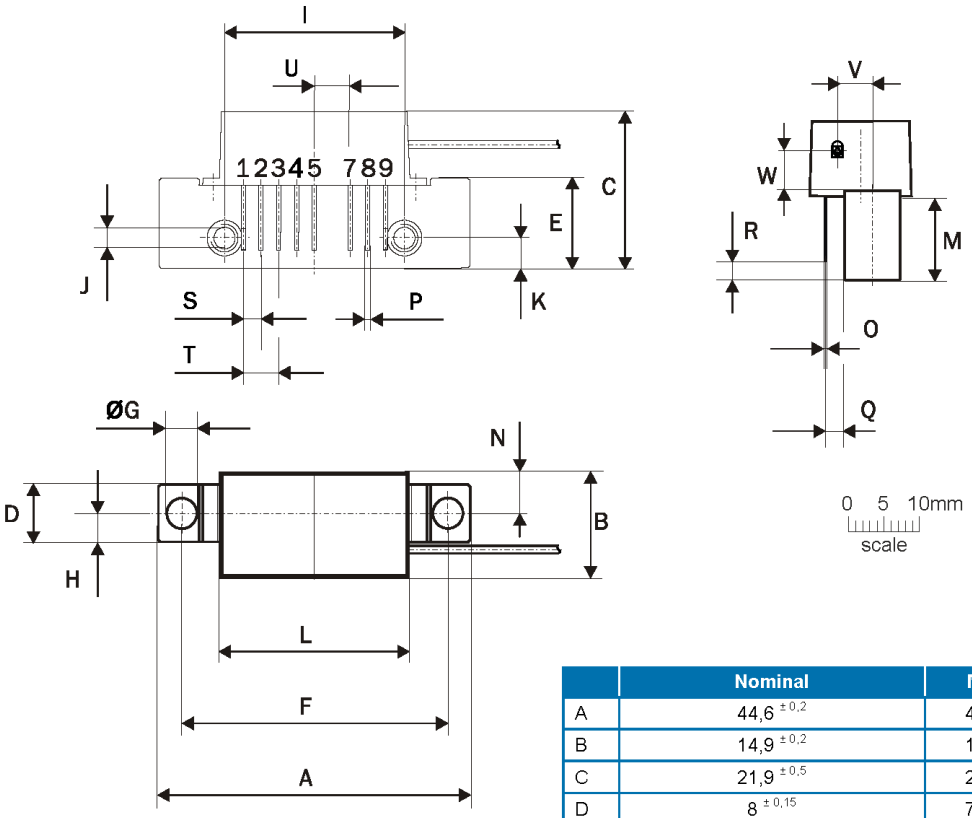
Cable Lengths and Connector Types (continued)

Tab	Dimension B	
	Inches	mm
-012	No outer jacket	
-013	No outer jacket	
-014	0.325 to 0.550	8.3 to 14.0
-015	0.325 to 0.550	8.3 to 14.0
-016	0.325 to 0.550	8.3 to 14.0
-017	0.325 to 0.550	8.3 to 14.0



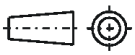


Package Drawing (Dimensions in millimeters)



Notes:

European Projection



	Nominal	Min	Max
A	44,6 ± 0,2	44,4	44,8
B	14,9 ± 0,2	14,7	15,1
C	21,9 ± 0,5	21,4	22,4
D	8 ± 0,15	7,85	8,15
E	12,6 ± 0,15	12,45	12,75
F	38,1 ± 0,2	38,0	38,2
G	4 +0,2 / -0,05	3,95	4,2
H	4 ± 0,2	3,8	4,2
I	25,4 ± 0,2	25,2	25,6
J	UNC 6-32	-	-
K	4,2 ± 0,2	4,0	4,4
L	28,7 ± 0,2	28,5	28,9
M	11,6 ± 0,5	11,1	12,1
N	5,8 ± 0,4	5,4	6,2
O	0,25 ± 0,02	0,23	0,27
P	0,45 ± 0,03	0,42	0,48
Q	2,54 ± 0,3	2,24	2,84
R	2,54 ± 0,5	2,04	3,04
S	2,54 ± 0,25	2,29	2,79
T	5,08 ± 0,25	4,83	5,33
U	5,08 ± 0,25	4,83	5,33
V	5,0 ± 0,2	4,8	5,2
W	5,35		

Pinning:

Pin	Name
1	PHOTODIODE CURRENT MONITOR
2-3	GND
4	PHOTODIODE BIAS
5	V+
6	
7-8	GND
9	OUTPUT