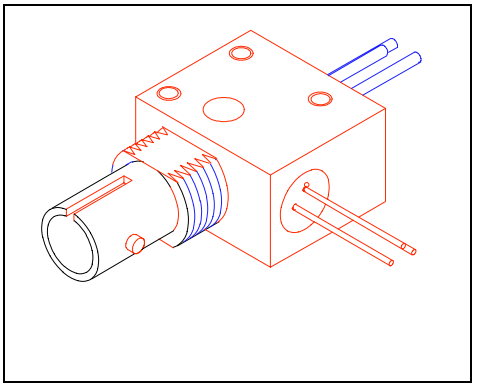
HOD3021-212/BBA

Single Fiber Duplex Modules

FEATURES

- Full duplex over single fiber
- DC to 85 MHz link bandwidth
- 2 km+ link budget
- 40 dB isolation
- Low profile ST housing
- Other options available



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DESCRIPTION

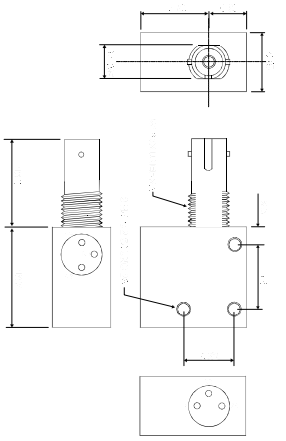
The Honeywell HODxxxx series of dual wavelength 'Fiber Duplexers' allow communication over a single optical fiber. Applications include full duplex data transmission, multiplexing two signals to a single fiber, LED coupled power measurements and reflected power measurements, depending upon the configuration of the duplexer.

The HOD3021-212/BBA comprises an 1300 nm LED and a 850 nm PIN diode and it's corresponding part, HOD4013-132/BBA, comprises a 850 nm LED and a 1300 nm PIN diode. The pair facilitate full duplex communication over a single fiber and are designed to be used where a dual fiber solution is not possible or economical. Alternatively the duplexer can be used to double the capacity of an existing system.

Each part consists of an on-axis port and an off-axis port loaded with the appropriate components, these are then coupled to the single fiber via integral lenses and a 3 dB wavelength differentiating mirror within the duplexer body. In this configuration the two pairs of components can communicate in opposing directions simultaneously and independently of each other. Links of 2 km+ are possible with this duplexer pair depending upon the receiver circuitry used. The duplexer housing is low profile, being the same height as a standard ST, the component ports are positioned to the rear and side of the housing.

Other standard options are available on request. These include two LEDs in one duplexer for single fiber multiplexing, PIN + Preamp receivers, VCSEL emitters or any other preferred components. Housing options include SMA, SC or FC/PC optical ports or a high profile housing for mounting duplexers closely side by side.

OUTLINE DIMENSIONS in inches (mm)



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Pinout

1. Anode
2. Cathode
3. Not connected

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ELECTRO-OPTICAL SPECIFICATIONS 1300nm LED

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Fiber Coupled Power	P_{OC}	12 -19.0	28 -17.0		µW dBm	I_F = 100 mA 50/125 µm fiber
Forward Voltage	V_F		1.4	1.7	V	I_F = 100 mA
Reverse Voltage	V_R			2.0		I_R = 2 µA
Peak Wavelength	λ_P	1290		1350	nm	I_F = 100 mA DC
Spectral Bandwidth	$\Delta\lambda$			170	nm	I_F = 100 mA DC
Response Time 10-90% 90-10%	 t_R t_F		 2.5 2.5	 4 4	 ns	 I_F = 100 mA, 50% Duty Cycle, f = 12.5 MHz
Analog Bandwidth	BWE		115		MHz	I_F = 100 mA
P_O Temperature Coefficient	$\Delta P_O/\Delta T$		-0.03		dB/°C	I_F = 100 mA
Capacitance	C		15	50	pF	V_F = 0 V, f = 1 MHz

ELECTRO-OPTICAL SPECIFICATIONS 850nm PIN Diode

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Flux Responsivity	R	0.40	0.45		A/W	λ = 850 nm
Active Area	A		1		mm²	
Dark Current	I_D		1.0	5.0	nA	V_R = 5 V, f = 1 MHz
Reverse Voltage	BVR		5.0		V	
Response Time 10-90% 90-10%	 t_R t_F		 3.5 3.5	 	 ns 	 λ = 820 nm, R_L = 50 Ω
Capacitance	C			3.5 20	pF	V_R = 20 V, f = 1 MHz V_R = 0 V, f = 1 MHz
Isolation	I_{CX}		40		dB	I_F (LED) = 100 mA DC

ABSOLUTE MAXIMUM RATINGS

Storage temperature	-45 to +125°C
Operating temperature	-40 to +85°C
Lead solder temperature	260°C, 10 s
Continuous forward current	150 mA (LED)
Reverse voltage	2 V (LED)

Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational section of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.

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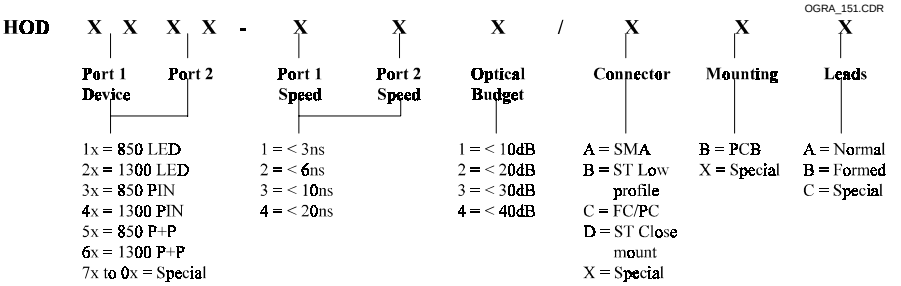
Fig. 1 Ordering Information - Duplexer Part Numbering Scheme



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