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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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Data Sheet



Cable description

The AFBR-HUXYYYYZ series of plastic fiber optic cables are constructed of a single step-index fiber sheathed in a black polyethylene jacket. The duplex fiber consists of two simplex fibers joined with a zipcord web.

Cables comply with UL VW-1 flame retardant specification (UL file #E116331 / Style #5538).

Cables are available in unconnectorized options. Refer to the Ordering Guide for part number information.

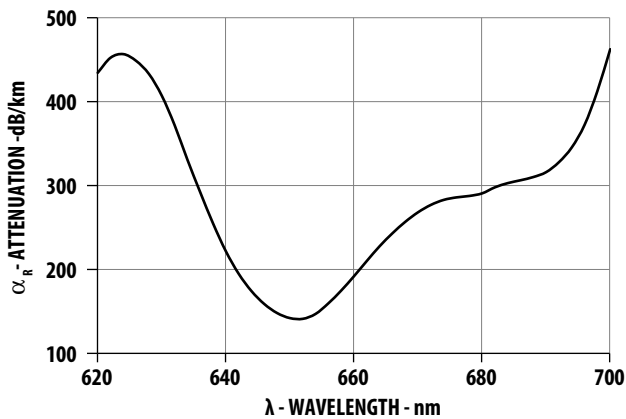


Figure 1. Typical POF attenuation vs. wavelength

Features

- Compatible with Avago Versatile Link Family of connectors and fiber optic components
- 1 mm diameter Plastic Optical Fiber (POF) in 1 grade with 0.19 dB/m typical attenuation (-40°C to +85°C)
- Halogen-free
- High performance extra low loss POF with 0.19dB/m typical attenuation (-40°C to +85°C)

Applications

- Industrial data links for factory automation and plant control
- Intra-system links; board-to-board, rack-to-rack
- Telecommunications switching systems
- Computer-to-peripheral data links, PC bus extension
- Proprietary LANs
- Digitalized video
- Medical instruments
- Reduction of lighting and voltage transient susceptibility
- High voltage isolation

Plastic Optical Fiber Specifications: AFBR-HUXYYZ

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Recommended Storage Temperature	T _S	-55	+85	°C	
Recommended Operating Temperature	T _O	-40	+85	°C	
Recommended Installation Temperature	T _i	-20	+70	°C	1
Short Term Tensile Force (simplex)	F _T		50	N	2, 3
Short Term Bend Radius	r	20		mm	2, 4, 5
Long Term Bend Radius	r	35		mm	6, 4, 5
Long Term Tensile Load (simplex)	F _T		1	N	6, 3
Flexing (r=20mm)			1000	Cycles	7, 8

UL VW-1 Flame Retardant

Mechanical Characteristics, T_A = -40°C to +85°C unless otherwise specified

Parameter	Symbol	Min.	Typ. ^[12]	Max.	Unit	Note
Numerical Aperture	NA		0.48			9
Diameter Core and Cladding	DC	0.94	1.00	1.06	mm	
Diameter Jacket	DJ	2.13	2.20	2.27	mm	Simplex cable
Refractive Index	Core Cladding		1.492			
			1.412			
Mass per Unit Length/Channel			5.2		g/m	10
Cable Leakage Current	IL		<5x10 ⁻⁵		nA	1KV, l=0.11meters

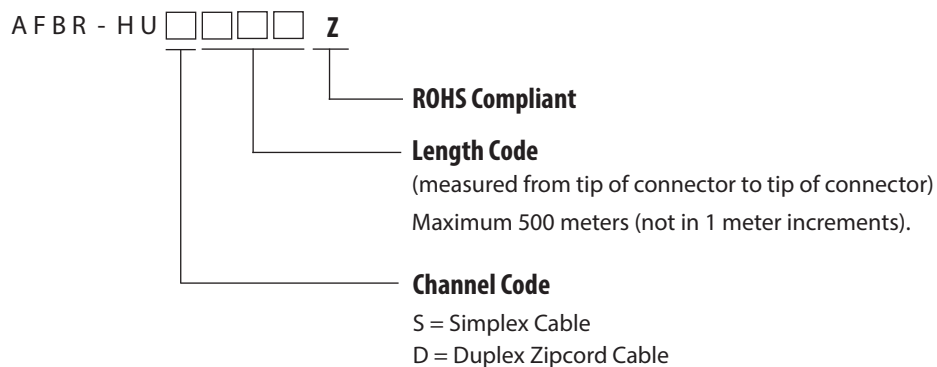
Optical Characteristics, T_A = -40°C to +85°C unless otherwise specified

Parameter	Symbol	Min.	Typ. ^[12]	Max.	Unit	Note
Cable Attenuation Source: 660nm LED, 0.5 NA (HFBR-15xxZ)	α _O	0.15	0.19	0.23	dB/m	
Reference attenuation Source: 650nm monochromatic, 0.15NA	α _R		0.15	0.19	dB/m	
Propagation Delay Constant	l/v		5.0		ns/m	11

Notes:

1. Installation temperature is the range over which the cable can be bent and pulled without damage. Below -20°C the cable becomes brittle and should not be subjected to mechanical stress.
2. Short term: 30mins.
3. Fail criteria for tensile force test: elongation higher than 5% of original length.
4. Bend angle is 90°. Bend radius is the radius of the mandrel around which the cable is bent.
5. Fail criteria for bend radius test: increase in attenuation higher than 0.5dB.
6. Long term: 24hours.
7. Bend angle is ±90°. Bend radius is the radius of the mandrel around which the cable is bent.
8. Fail criteria for flexing test: increase in attenuation higher than 0.5dB.
9. Fiber length longer than 2 meters.
10. Without connectors
11. Propagation delay constant is the reciprocal of the group velocity for propagation delay of optical power. Group velocity is $v=c/n$, where c is the velocity of light in free space (3×10^8 m/s) and n is the effective core index of refraction.
12. Typical data measured at 25°C.

Ordering Guide for POF Cable



Note: Not all possible combinations reflect available part numbers.
Please contact your local Avago representative for a list of current available cable part numbers.

For Example:

AFBR-HUS500Z is a Simplex, 500m cable

AFBR-HUD100Z is a Duplex, 100m cable

Cable Length Tolerances:

The plastic cable length tolerances are: +10% / -0%

Ordering Guide for POF Connectors and Accessories

Plastic Optical Fiber Connectors

HFBR-4501Z	Gray Simplex Connector/Crimp Ring
HFBR-4511Z	Blue Simplex Connector/Crimp Ring
HFBR-4503Z	Gray Simplex Latching Connector with Crimp Ring
HFBR-4513Z	Blue Simplex Latching Connector with Crimp Ring
HFBR-4506Z	Parchment Duplex Connector with Crimp Ring
HFBR-4516Z	Gray Duplex Latching Connector with Crimp Ring
HFBR-4505Z	Gray Adapter (Bulkhead/Feedthrough)
HFBR-4515Z	Blue Adapter (Bulkhead/Feedthrough)

Plastic Optical Fiber Accessories

HFBR-4522Z	500 HFBR-0500 Products Port Plugs
HFBR-4525Z	1000 Simplex Crimp Rings
HFBR-4526Z	500 Duplex Crimp Rings
AFBR-4594Z	Polishing Kit (one polishing tool, two pieces 600 grit abrasive paper, and two pieces 3 µm pink lapping film)
HFBR-4597Z	Plastic Fiber Crimping Tool

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