



specification

Product Name	FBT SPLITTER	Product Modle	1X2/FBT
File Numbers	HBY-20210724-01A	Version	2021-0A
Production part no		PO Numbers	
			
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1 Product Structure (Unit: 3*60MM)



2 Specification

2.1 Optical Characteristics (exclude connector loss)

TYPE	FBT 1*2														
Working Wavelength(nm)	1310. 1490. 1550														
Working Bandwidth(nm)	±40														
Splitting Ratio	1: 99	2: 98	3:97	5:95	10:90	15:85	20: 80	25: 75	30: 70	35: 65	40: 60	45: 55	50: 50		
Insertion Loss(dB)	21.5/0.25	18.5/0.25	16.6/0.3	14.3/0.35	11.0/0.59	9.00/0.90	7.60/1.20	6.60/1.50	5.70/1.80	5.00/2.30	4.40/2.60	3.80/3.00	3.30/3.30		
RL(dB)	≥ 50														
PDL(dB)	≤0.2														
Directivity(dB)	≥55														
Working Temperature(℃)	-40~+85														
Diameter,material and Color	Bare fiber SMF-28e G657A1 (connect: without conector)														
Fiber Length	1.0M														

Note: if with connector. On the basis of the above requirements, the insertion loss will increase by no less than 0.2dB, and other indicators are the same.



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2.2 Optical cable and other requirements

Category		Specification	Remarks
Fiber Cable	Type NO:3	G657A1	
	Outer diameter /MaterialNO:3	Ø0.9/Hytrel	
	Input endface Length:L1	1.0±0.03m -white	
	Output endface Length:L2	1.0±0.03m--Blue	Ratio-1/2/3/5/10/15/20/25/30 /35/40/45/50
		1.0±0.03m--Orange	Ratio-99/98/97/95/90/85/80/7 5/70/65/60/55/50
Connector type	Input endface NO:1	SC APC	
	Output endface NO:2	SC APC	

Insertion Loss

Test Wavelength:1310-1550 nm

RequiredValue: For details, please see specification.

Test can be performed on any channel



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4 Return Loss

Test Wavelength : 1310-1550 nm

Required Value : >50 dB

Test can be performed on any channel

5 Directivity

Test wavelength : 1310-1550 nm

Required Value : >55 dB

Required testing interface QTY=log22(Output interface):log2(2)=1

6 Polarization Dependent Loss-PDL

Test Wavelength : 1310-1550 nm

Required Value : < 0.2dB

Required testing interface QTY=log22(Output interface):log2(2)=1

7 Insert/Pull Test

Loss should be within the following limits in reference to the initial value

Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions: :

Pull/Insert : 500 times

Record a data every 10 times

Data is recorded 50 times in total

Clean pins and adapter's elastic sleeve before recording very time

Not mechanical damage, such as deformation, loss, corrosion, relaxation and other phenomena

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

8 Tensile Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions:



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Load: 5 N

Tensile variation in process of testing: 0.5N/s

Duration:60s

Tensile Point:0.3m distance from fiber cable ends

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

9 Torsion Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 55 dB in process of Testing

The test shall be conducted under the following conditions: :

applied force:15N

The distance between the Torsion point and shell underside is 22 ~ 28cm

Max Torsion Angle: $\pm 180^\circ$ ☒ number of torsions: 100 times

Torsion Speed : 10 Times/min. ☒ Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

10 High and Low Temperature Cycling Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions: :

High Temperature=+75°C , Temperature rate of change:1 °C / min

Low Temperature=-25°C , Temperature change rate 1 °C / min

High and low temperature points to stay four hours separately

Duration: 96h

Cycles: 12 times

2 hours returned to 25°C

Keep 2 hours at 25°C,then test

Insertion value should be tested at least one time per 10 mins. in process of testing.

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1



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11 Low Temperature Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions: :

Temperature= -25°C

Duration:96H

2 hours returned to 25°C from -25°C

Test after Keeping 2 hours at 25°C

Insertion value should be tested at least one time per 60 mins. in process of testing.

Test Wavelength 1310-1550nm

Required testing interface QTY= $\log_{22}(\text{Output interface})$: $\log_{2}(2)=1$

12 Dry Heat Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions: :

Temperature= $+75^{\circ}\text{C}$

Duration: 96h

2 hours returned to 25°C

Test after Keeping 2 hours at 25°C

Insertion value should be tested at least one time per 60 mins. in process of testing.

Test Wavelength 1310-1550nm

Required testing interface QTY= $\log_{22}(\text{Output interface})$: $\log_{2}(2)=1$

13 Salt Spray Test

Loss should be within the following limits in reference to the initial value

variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of Testing

The test shall be conducted under the following conditions: :

Salt Spray concentration: 5%

Condition : 35°C , 48H

Test its optical performance at room temperature, and record data



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Place in salt spray chamber from the test system, heated to 35 °C, then keep 48H
Lower the temperature to room temperature, then remove the samples to place 2H, test the optical performance after wiping

No mechanical damage, such as deformation, loss, corrosion, relaxation and other phenomena

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

14 Vibration Test:

Loss should be within the following limits in reference to the initial value

Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

Frequency: 10-55 Hz

Amplitude: 0.75mm (1.52mm Max)

Cycles: 15 times

Time: 90 min divided in three perpendicular directions

Every 5 seconds to test the attenuation of at least one port

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

15 Humidity test

Loss should be within the following limits in reference to the initial value

Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

Temperature = +40°C

humidity = 93%

Duration: 96 h

25°C 2 hours returned to 25°C

Test after Keeping 2 hours at 25°C

Insertion value should be tested at least one time per 60 mins. in process of testing.

Test Wavelength 1310-1550nm

Required testing interface QTY=log22(Output interface):log2(2)=1

16 Water Immersion Test

Loss should be within the following limits in reference to the initial value



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Variation value of Insertion Loss should be ≤ 0.50 dB in process of testing

The difference between Initial Value and final test value should be ≤ 0.30 dB

Return loss should be ≥ 50 dB in process of testing

The test shall be conducted under the following conditions:

elevation of water: 15 mm

Temperature : 43°C

Soaking time: 168 h

Insertion value should be tested at least one time per 10 mins. in process of testing.

Test Wavelength 1310-1550 nm

Required testing interface $QTY = \log_2(\text{Output interface}) : \log_2(2) = 1$

17 Flame Retardant Requirements

Test standard

HB: UL94 standard anti-flame retardant is the lowest grade.

Ask for 3 to 13 mm thick samples, the burning rate of less than 40 mm per minute

Samples less than 3 mm thick, the burning rate per minute less than 70 mm or 100 mm sign is extinguished

V-2: After samples twice fire test for 10 seconds the flame extinguished within 60 seconds and Blazers fall.

V-1: After samples twice fire test for 10 seconds the flame extinguished within 60 seconds and No Blazers fall

V-0: After samples twice fire test for 10 seconds the flame extinguished within 30 seconds. No Blazers fall

Optical splitter, Optical cable and ABS housings should comply with the above flame retardant V0



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18 Product Packaging Information

18.1 Inner packing (MM)

	Size (MM)	165×145×75
	N.W.(KG/2PCS)	0.02
	QTY (PCS/Box)	2
	G.W. (KG/Box)	0.05

18.2 Outer packing

	Size (MM)	460×320×480
	QTY (PCS/Box)	600
	N.W.(KG/Box)	7.0
	G.W. (KG/Box)	8.5

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