

DCM-G.652-C-Fxx series • dispersion
compensator

Technical index

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1.0 PRODUCT DESCRIPTION

ITU G.652 standard single-mode fiber has dispersion in C-Band, the typical value is 16.6ps/nm Km dispersion. Dispersion limits the transmission distance of 1550nm optical fiber system and the available bandwidth.

There are several methods of optical fiber dispersion compensation. Practice proved that the dispersion compensation fiber module (DCF, DCM) is the method is simple, the most economical, effective. It can not only effectively extra dispersion compensation of standard single mode fiber, dispersion slope compensation can also be 100% standard single mode fiber.

DCM-G.652-C-Fxx dispersion compensation fiber module, is negative dispersion compensation based on optical fiber technology, can effectively compensate for G.652 standard single-mode fiber transmission band of 1525 ~ 1565nm dispersion and dispersion slope characteristic.

2.0 Product feature

- Adapt to standard single mode optical fiber G.652, 1525~1565nm transmission channel
- Excellent dispersion compensation feature can eliminate the influence to system's index, because of residual dispersion.
- G.652 100% C band dispersion compensation fiber
- Dispersion compensation value range is 10~120Km optional.
- Low insertion loss
- Low polarization mode dispersion
- Excellent performance price ratio

3.0 Main application

- G.652 standard single mode fiber, 1525 ~ 1565nm wavelength range and chromatic dispersion slope compensation
- DWDM system in the long distance, the long distance fiber link
- CATV long trunk
- Long distance optical fiber link, satellite, microwave

4.0 Technical index

Feature		Index			Supplement	
		Min.	Typ.	Max.		
Working wavelength	(nm)	1525		1565		
Through power	(dBm)	30				
Effectivity area	(μm^2)		20			
Nonlinearity (n_2/A_{eff})	(W^{-1})		1.4×10^{-9}			
SBS threshold	(dBm)	+6				
Optical fiber connector		SC/APC, FC/APC				
Return loss	(dB)			-45		
Compensated optical fiber length	(Km)		10		F10	
			20		F20	
			30		F30	
			40		F40	
			50		F50	
			60		F60	
			70		F70	
			80		F80	
			90		F90	
			100		F100	
			110		F110	
			120		F120	
Dispersion value	1525nm	(ps/nm)	-159		-145	F10
			-315		-293	F20
			-472		-440	F30
			-629		-588	F40
			-786		-735	F50
			-942		-883	F60
			-1097		-1033	F70
			-1251		-1183	F80
			-1406		-1333	F90
			-1560		-1482	F100
			-1714		-1632	F110
			-1868		-1782	F120
	1545nm	(ps/nm)	-170		-165	F10
			-337		-332	F20
			-515		-498	F30
			-673		-664	F40

			-860		-830	F50
			-1009		-996	F60
			-1205		-1160	F70
			-1340		-1328	F80
			-1545		-1494	F90
			-1671		-1660	F100
			-1895		-1826	F110
			-2001		-1990	F120
	1565nm	(ps/nm)	-184		-168	F10
			-364		-340	F20
			-546		-511	F30
			-727		-682	F40
			-909		-853	F50
			-1090		-1024	F60
			-1269		-1198	F70
			-1448		-1371	F80
			-1627		-1545	F90
			-1805		-1718	F100
			-1984		-1892	F110
			-2162		-2066	F120
Optical fiber insert loss (1525~1565nm)	(dB)		1.2	2.1	F10	
			1.8	2.7	F20	
			2.5	3.4	F30	
			3.2	4.1	F40	
			3.9	4.8	F50	
			4.5	5.5	F60	
			5.3	6.2	F70	
			6.0	6.9	F80	
			6.7	7.7	F90	
			7.4	8.4	F100	
			8.1	9.1	F110	
	8.8	9.8	F120			
Residual dispersion slope	(nm ⁻¹)	0.00299	0.00360	0.00421		
Polarization dependence loss (PDL)	(dB)		0.1			
wavelength dependence loss WDL (1530nm~1565nm)	(dB)			0.5	F10	
				0.6	F20	
				0.6	F30	
				0.6	F40	
				0.7	F50	

				0.7	F60
				0.8	F70
				0.8	F80
				0.8	F90
				0.8	F100
				0.9	F110
				0.9	F120
Polarized mode dispersion (PMD)	(ps)		0.1	0.3	F10
			0.2	0.4	F20
			0.2	0.4	F30
			0.2	0.5	F40
			0.2	0.5	F50
			0.2	0.6	F60
			0.2	0.6	F70
			0.3	0.7	F80
			0.3	0.7	F90
			0.3	0.8	F100
			0.3	0.8	F110
			0.3	0.8	F120
Dispersion optical fiber length	(Km)	0.85	1.0	1.2	F10
		1.7	2.0	2.4	F20
		2.5	3.0	3.1	F30
		3.5	4.1	4.8	F40
		4.4	5.1	6.0	F50
		5.2	6.1	7.2	F60
		6.1	7.1	8.4	F70
		7.0	8.1	9.6	F80
		7.8	9.2	10.6	F90
		8.5	10.2	11.5	F100
		9.3	11.3	12.7	F110
10.2	12.3	13.8	F120		
Work Temp.	(°C)	-5		+70	
Store Temp.	(°C)	-40		+85	
Work humidity	(%)	0		85	
Store humidity	(%)	0		85	
Size	(mm)	483×279×44			(W)×(D)×(H)

5.0 PRODUCT SERIES

Model number	Compensate optical fiber length (Km)	Dispersion value 1545nm (ps/nm)	Polarize mode dispersion(ps)	Insert loss (dB)
DCM-G.652-C-F10	10	-165	0.1	1.2
DCM-G.652-C-F20	20	-332	0.2	1.8
DCM-G.652-C-F30	30	-498	0.2	2.5
DCM-G.652-C-F40	40	-664	0.2	3.2
DCM-G.652-C-F50	50	-830	0.2	3.9
DCM-G.652-C-F60	60	-996	0.2	4.5
DCM-G.652-C-F70	70	-1160	0.2	5.3
DCM-G.652-C-F80	80	-1328	0.3	6.0
DCM-G.652-C-F90	90	-1494	0.3	6.7
DCM-G.652-C-F100	100	-1660	0.3	7.4
DCM-G.652-C-F110	110	-1826	0.3	8.1
DCM-G.652-C-F120	120	-1990	0.3	8.8

6.0 Model explanation

DCM - G.652 - C - F□□ - □□ - □ / □□

Product series	Fiber	Wavelength		Compensating fiber length		Connector		Exterior		Optical port position	
		C	C-Band 1528~1565nm	10	10Km	LA	LC/APC	1U	19" 1RU	F	Front panel
Dispersion compensator module	G.652	C	C-Band 1528~1565nm	20	20Km	LP	LC/UPC	ML	Modulator	B	Back panel
	G.655			30	30Km	SA	SC/APC				
				40	40Km	SP	SC/UPC				
				50	50Km	FA	FC/APC				
				60	60Km	FP	FC/UPC				
				70	70Km						
				80	80Km						
				90	90Km						
				100	100Km						
				110	110Km						
				120	120Km						