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Model OT-DCM-G Dispersion Compensation Module

Features / Benefits

APPLICATIONS

- Increase Distance and Decrease BER of Digital Fiber Optic Links
- Reduce Distortion in Analog Fiber Optic Links
- Cancel Out Dispersion Caused by Standard SMF-28 Fiber

FEATURES

- Can be Selected for a Wide Range of Distances
- Wide Optical Bandwidth
- No Need for Precisely Tuned Channel Wavelengths
- Works with Both Analog and Digital Signal Formats

Overview

The OT-DCM-G Series Fiber-Based Dispersion Compensation Module removes distortion from optical signals that have traveled long distances over standard, positive dispersion, SMF-28 fiber. In digital systems, this dispersion limits the maximum transmission distance at a given data rate and causes increased BER. In analog systems, this dispersion manifests itself as second order distortion in the signal. The BER in digital systems and CSO in analog systems increases sharply with increasing SMF-28 fiber lengths. The OT-DCM-G Dispersion Compensation Module cancels out the fiber's positive dispersion, increasing transmission distance and enhancing the fidelity of all types of optical signals.

Operating Specifications

Parameter	Units	Specification
Operating Wavelength	nm	C-Band: 1525-1565
PDL (Polarization Dependent Loss)	dB	≤0.3
RDS @ 1545nm	nm^{-1}	0.0036 ±20%
SBS Threshold	dBm	6 Min
Nonlinear Coeff.	W^{-1}	$1.4*10^{-9}$ Max
Effective Area (A_{eff})	μm^2	20 Min
Operating Temperature	°C	-5 to +70
Storage Temperature	°C	-40 to +85
Relative Humidity[A]	%	<90
Connector Return Loss	dB	<-55
Module Return Loss	dB	<-55
Optical Connector		SC/APC or FC/APC
Package Dimensions	in. mm	19" W x 1.72" H x 11.81" D 482.6 W x 43.2 H x 300 D

Notes: A) Non-condensing environment only

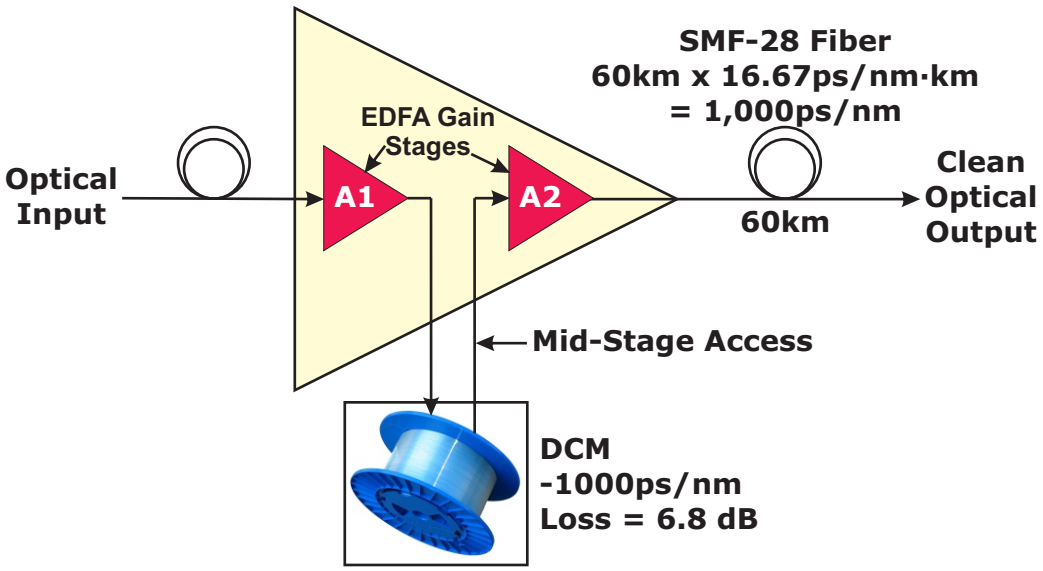

Figure 1 - Typical DCM Application

Part Numbers and Optical Dispersion Performance

Model	SMF-28 Fiber Compensation Distance (km)	Dispersion @1545nm (ps/nm)	Max PMD (ps)	Max Insertion Loss (dB)
OT-DCM-G05	5	-85 ±5	0.4	2.0
OT-DCM-G10	10	-170 ±5	0.4	2.7
OT-DCM-G20	20	-340 ±10	0.4	3.5
OT-DCM-G30	30	-505 ±15	0.5	4.0
OT-DCM-G40	40	-670 ±20	0.6	4.4
OT-DCM-G50	50	-835 ±25	0.7	5.6
OT-DCM-G60	60	-1000 ±30	0.7	6.8
OT-DCM-G70	70	-1170 ±35	0.8	7.4
OT-DCM-G80	80	-1340 ±40	0.8	8.0
OT-DCM-G90	90	-1510 ±45	0.9	8.8
OT-DCM-G100	100	-1680 ±50	0.9	9.5
OT-DCM-G110	110	-1845 ±55	1.0	10.2
OT-DCM-G120	120	-2010 ±60	1.0	11.0

Note: Each DCM module is designed to compensate for a specific amount of dispersion. For example, the OT-DCM-G10 is designed to compensate for 10 km of G.652 fiber dispersion, and the OT-DCM-G100 is designed to compensate for 100 km of G.652 fiber dispersion. The units can be ordered for compensation distance from 5km to 120km.