



U N I T

Specification
of
Fiber Bragg Grating

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1.General

This document covers the specification of **Fiber Bragg Grating**

2.Product Name

Table 1. Products List

Product Name	Channel Signal	Dimension	Temperature Compensating
FBG-50G-M< λ >	50GHz	ϕ 0.25 mmFiber	No
FBG-50G-TC-M< λ >	50GHz	ϕ 6×70mm	Yes
FBG-100G-M< λ >	100GHz	ϕ 0.25 mmFiber	No
FBG-100G-TC-M< λ >	100GHz	ϕ 6×70mm	Yes

* λ is Center Wavelength(ITU- λ)

3.Specification

3-1. For 100GHz Signal Fiber Bragg Grating

Item	Unit	Non-Temperature Compensated		Temperature Compensated	
		Spec.	Typical	Spec.	Typical
Operating Wavelength	nm	1527 ~ 1565			
Channel Signal	GHz	100			
Operating Temperature	°C	25 ± 5		0 ~ 65	
Storage Temperature	°C	-40 ~ 85			
Center Wavelength	nm	λ_s (ITU- λ)			
Optical Fiber	-	Corning SMF28 Compatible			
• Transmission Characteristics					
Insertion Loss *1 (@ ~ λ_s -0.8nm, λ_s +0.8nm ~)	dB	≦ 0.5	0.2	≦ 0.5	0.2
Insertion Loss Ripple *1 (@ ~ λ_s -0.8nm, λ_s +0.8nm ~)	dBp-p	≦ 0.3	0.1	≦ 0.3	0.1
Rejection @-30dB Band Width	nm	≧ 0.4	0.45	≧ 0.4	0.45
PDL *1 (@ ~ λ_s -0.8nm, λ_s +0.8nm ~)	dBp-p	≦ 0.1	0.05	≦ 0.1	0.05
PMD *1 (@ ~ λ_s -0.8nm, λ_s +0.8nm ~)	ps	≦ 0.5	0.3	≦ 0.5	0.3
• Reflectance Characteristics					
Insertion Loss *1 (@ λ_s)	dB	≦ 0.5	0.2	≦ 0.5	0.2
Insertion Loss Ripple *1 (@ λ_s ±0.15nm)	dBp-p	≦ 0.1	0.07	≦ 0.1	0.07
FWHM	nm	≧ 0.6	0.9	≧ 0.6	0.9
Adjacent CH Cross Talk (@ λ_s ±0.8nm) *1	dB	≧ 25	28	≧ 25	28
Other CH Cross Talk *1 (@ ~ λ_s -1.6nm, λ_s +1.6nm ~)	dB	≧ 28	31	≧ 28	31

PDL (@ $\lambda_s \pm 0.05\text{nm}$) *1	dBp-p	≤ 0.1	0.05	≤ 0.1	0.05
• Thermal Characteristics					
Center Wavelength Drift	pm/°C	≤ 15.0	12.0	≤ 1.0	0.5

*1 We ensure the range of $\pm 0.05\text{nm}$ of the ITU Wavelength.

3-2. For 50GHz Signal Fiber Bragg Grating

Item	Unit	Non-Temperature Compensated		Temperature Compensated	
		Spec.	Typical	Spec.	Typical
Operating Wavelength	nm	1527 ~ 1565			
Channel Signal	GHz	50			
Operating Temperature	°C	25 \pm 5		0 ~ 65	
Storage Temperature	°C	-40 ~ 85			
Center Wavelength	nm	λ_s (ITU- λ)			
Optical Fiber	-	Corning SMF28 Compatible			
• Transmission Characteristics					
Insertion Loss *1 (@ $\sim \lambda_s - 0.4\text{nm}, \lambda_s + 0.4\text{nm} \sim$)	dB	≤ 0.5	0.2	≤ 0.5	0.2
Insertion Loss Ripple *1 (@ $\sim \lambda_s - 0.4\text{nm}, \lambda_s + 0.4\text{nm} \sim$)	dBp-p	≤ 0.2	0.1	≤ 0.2	0.1
Rejection @-30dB Band Width	nm	≥ 0.2	0.3	≥ 0.2	0.3
PDL *1 (@ $\sim \lambda_s - 0.4\text{nm}, \lambda_s + 0.4\text{nm} \sim$)	dBp-p	≤ 0.1	0.05	≤ 0.1	0.05
• Reflectance Characteristics					
Insertion Loss *1 (@ λ_s)	dB	≤ 0.5	0.2	≤ 0.5	0.2
Insertion Loss Ripple *1 (@ $\lambda_s \pm 0.05\text{nm}$)	dBp-p	≤ 0.1	0.07	≤ 0.1	0.07
FWHM	nm	≥ 0.3	0.35	≥ 0.3	0.35
Adjacent CH Cross Talk (@ $\lambda_s \pm 0.4\text{nm}$) *1	dB	≥ 23	27	≥ 23	27
Other CH Cross Talk *1 (@ $\sim \lambda_s - 0.8\text{nm}, \lambda_s + 0.8\text{nm} \sim$)	dB	≥ 26	30	≥ 26	30
PDL (@ $\lambda_s \pm 0.05\text{nm}$) *1	dBp-p	≤ 0.1	0.05	≤ 0.1	0.05
• Thermal Characteristics					
Center Wavelength Drift	pm/°C	≤ 15.0	12.0	≤ 1.0	0.5

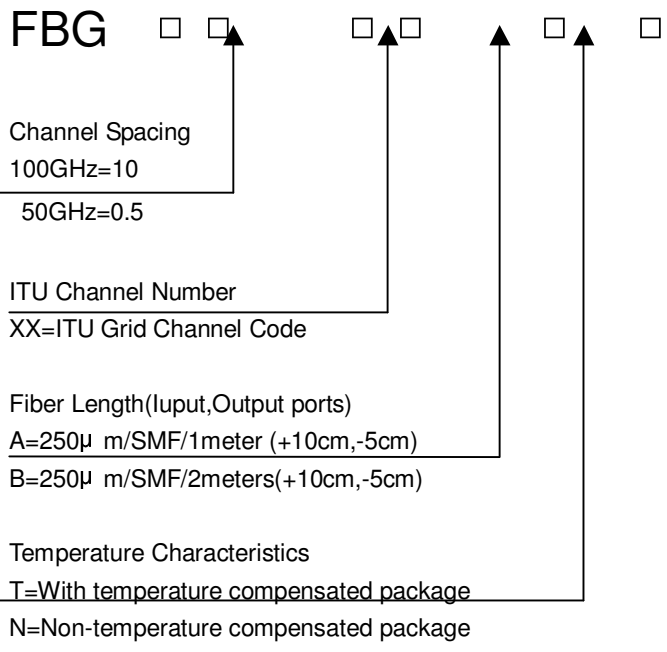
*1 We ensure the range of $\pm 0.05\text{nm}$ of the ITU Wavelength.

3. Packaging

Products are packed by suitable method.

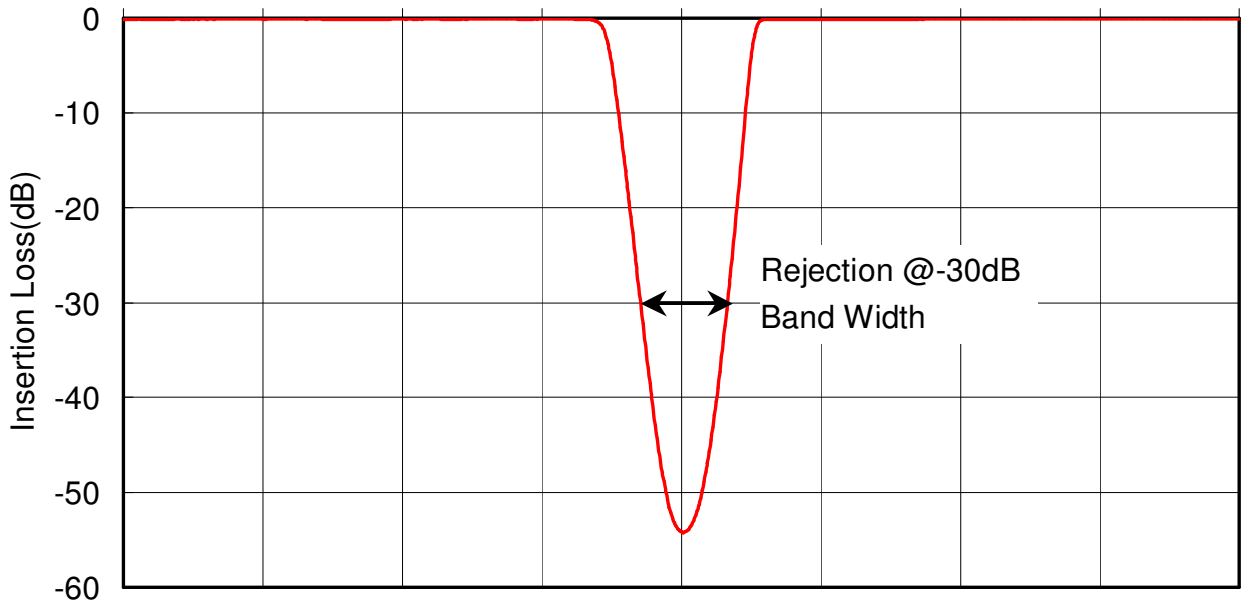
Name of products and name of manufacture are marked.

4. Ordering Information

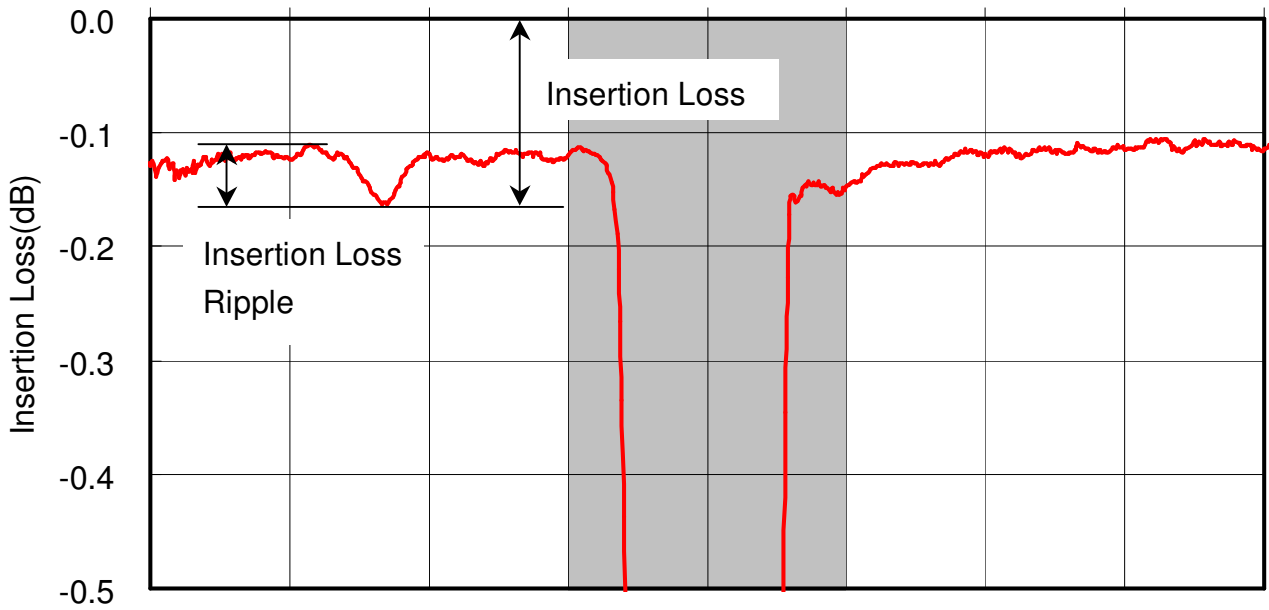


Reference

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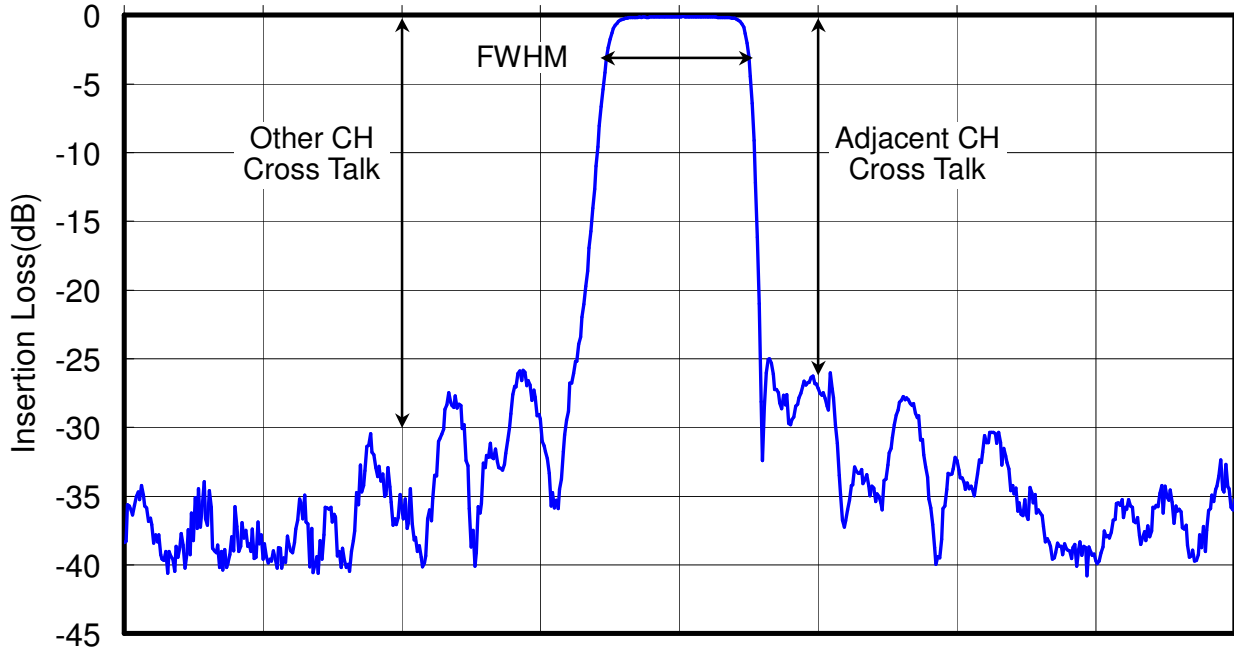


$\lambda/2$ $\lambda/2$ $\lambda/4$ $\lambda/2$ $\lambda/4$ $\lambda/2$ $\lambda/2$



$\lambda/2$ $\lambda/2$ $\lambda/4$ $\lambda/2$ $\lambda/4$ $\lambda/2$ $\lambda/2$

<Reflectance>



$\lambda_c \pm 0.2$ $\lambda_c \pm 0.2$ $\lambda_c \pm 0.1$ λ_c $\lambda_c \pm 0.1$ $\lambda_c \pm 0.2$ $\lambda_c \pm 0.2$



$\lambda_c \pm 0.1$

λ_c

$\lambda_c \pm 0.1$