

Plastic Optical Fiber for Automobile

Yuji Watanabe , AGC Inc.

Fiber specification of POF for automobile

IEC Sub category		New
Type		Perfluorinated GI-POF
Operation temperature range (°C)		-40 ~ 105
Core dia.(μm)		55
Fiber dia.(μm)		490
NA		0.22
Attenuation (dB/km)	at 850 nm	≤ 100
	at 980 nm	≤ 85
Bandwidth (EMBc) (MHz*km)	At 850 and 980 nm	≥ 200

Same transceiver can be applicable to GOF and POF, because POF has;

- Similar core diameter and NA as GOF
- Same operation wavelength (850 nm and 980 nm)

Aging test results

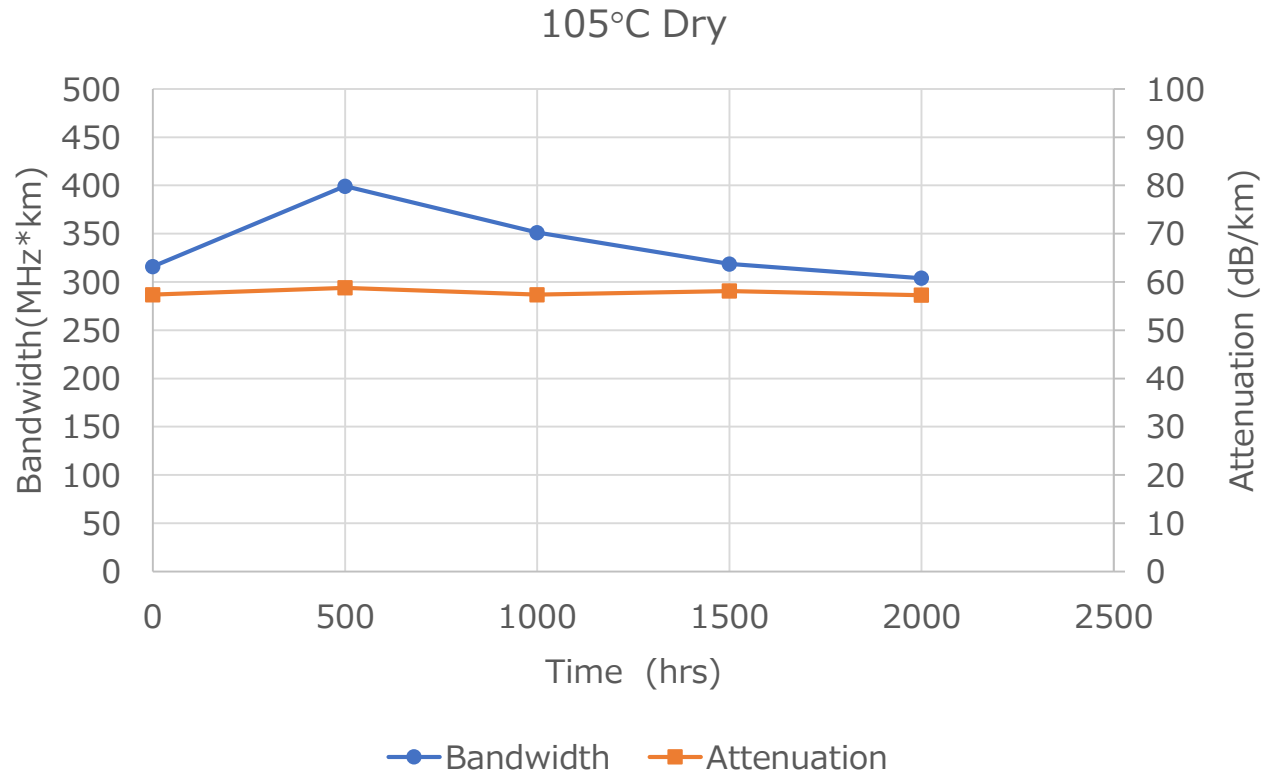


Fig. Aging test results at 105°C for automobile grade GI-POF (@850nm)

Proposal

- My proposal is to define max channel insertion loss for each data rate irrespective of fiber medium

Parameter	2.5G	5G	10G	25G	Unit
Power budget	16.28*1			14.28*1	dB
Max channel insertion loss	TBD			TBD	dB
Fiber medium	GOF/POF*2				-

*1 S.Swanson, Table 300-10 Proposed IEEE 802.3cz PMD, MDI and Media Baseline Text, Dec. 15, 2020

*2 Max reach for POF at each data rate will be defined by simulation

Thank you for your attention.



Your Dreams, Our Challenge