

DPSK Demodulator

Features

- Low insertion loss&PDL
- Wide bandwidth
- Low temperature-dependent frequency shift (TDFS)
- Low polarization-dependent frequency shift (PDFS)
- Central wavelength tunable

Applications

- DPSK signal demodulation
- Data rate optimization
- Extend transmission distances



Electrical Specifications

Parameter	Symbol	Min	Max	Unit	Note
Thermal tuning voltage		0	5	V	
Thermal tuning power consumption			1	W	Typically 0.1W
RTD temperature range		-5	80	°C	
RTD characteristics					See Note 6

Note $R(T)=R_0 \times (1+AT+BT^2+CT^3)$, where T is temperature in degree C, $R_0=1000$ ohm, $A=3.9083 \times 10^{-3}$, $B=-5.7753.9083 \times 10^{-7}$, $C=-4.183 \times 10^{-12}$ for $T < 0$, $C=0$ for $T > 0$.

Optical Specifications

Parameter	Symbol	Min	Max	Unit	Note
Wavelength range (C-band)		1527	1567	nm	
Free Spectral Range (FSR)	FSR			GHz	
FSR error ^[1]	Δ FSR		1	%	
Insertion loss (including connectors) ^[1]	IL		2.2	dB	typically 1.7 dB
Insertion loss difference (between the two receiving ports) ^[1]	Δ IL		0.7	dB	
Temperature dependent loss	TDL		0.5	dB	
Extinction ratio ^[1]		18		dB	
PMD ^[1]			0.1	ps	
PDL ^[1]			0.2	dB	
PDFS (polarization dependent frequency shift) ^[1]	PDFS		1	%	percentage of FSR
TDFS (temperature dependent frequency shift) ^[2]	TDFS		± 0.5	GHz/ $^{\circ}$ C	
Optical path mismatch after interferometer (between the two receiving ports) ^[1]			1	ps	
Return loss	RL	40		dB	
Optical input power	Pin		300	mW	Per input port
Thermal tuning range at 4.75 ^[4]	TTR	100		GHz	50-GHz FSR
Net TTR (TTRmin ^[5] -70x TDFS)		83		GHz	50-GHz FSR
Thermal tuning time constant ^[3]			1	Sec	

Note [1] Over wavelength range and all polarization states

Note [2] Frequency shift due to ambient temperature change

Note [3] Defined as the time required to reach half of the tuning range

Note [4] Unless otherwise stated, all specifications are EOL (20 years) and over the operating environments