DWDM SFP Optical Transceiver

Features

- Wavelength available in C-band ITU-T grid wavelengths
- Suitable for use in 100GHz channel spacing DWDM systems
- DWDM SFP MSA Compliant
- Cold Start up Wavelength Compliance
- Low Power Dissipation <1.3W Maximum
- -5ºC to 70ºC Operating Case Temperature
- Diagnostic Performance Monitoring of module temperature, supply Voltages, laser bias current, transmit optical power, receive optical power, Laser temperature and TEC current
- Extended link budget with APD receiver technology
- RoHS compliant

Applications

- SFP Transceivers for DWDM SONET/ SDH
- Ethernet IEEE 802.3ae
- Fiber Channel

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.3	4.0	V
Storage Temperature	Tst	-40	85	ºC
Data AC Voltage	TX+-AC	-	2.4	Vpp
Data DC Voltage	TX+-DC	-0.5	2.5	V
Optical Input Received Power	PIN	-	+5	dBm

Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Operating Case temperature	Tca	-5	-	70	ºC
Total Current	Icc	-	-	380	mA
Module Power Dissipation	Pm	-	0.8	1.3	W

Transmitter Specifications – Optical

Parameter	Symbol	Min	Typical	Max	Unit
Data Rate Multirate	Mra	155	1250	2667	Mbps
Center Wavelength (SOL)△	λc	λc -25		λc +25	pm
Center Wavelength (EOL)▲	λc	λc -100		λc +100	pm
Optical Transmit Power	Po	0	2	4	dBm
Optical Transmit Power (disabled)	PTX_DISABLE	-	-	-40	dBm
Extinction Ratio	ER	8.2		-	dB
Channel Spacing	Δf	-	100	-	GHz
Jitter Generation	TJP-P	-	-	70	mUI
Spectral Width (-20dB)	Dl20	-	0.1	0.3	nm
Side Mode Suppression Ratio	SMSR	30	-	-	dB
Eye Mask	Compliant with Bell core GR-253-CORE & ITU G.957 for SONET/SDH and with IEEE 802.3ae for Ethernet and Fibre Channel				

△ Laser- Start of Life

▲Laser End of life

Transmitter Specifications – Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	VccTX	3.13	3.3	3.47	V
PECL/CML Input	VtxDIFF	500	-	1600	mV
Input Rise/Fall	TR / TF	-	-	160	ps
TX-Fault Fault	Vf	2	-	Vcc	V
TX-Fault Normal	Vn	Vee	-	Vee+0.5	V
TX_DISABLE (asserted)	VDH	2	-	Vcc	V
TX_DISABLE (negated)	VDL	Vee	-	Vee+0.8	V

APD Receiver Specifications – Optical

Parameter	Symbol	Min	Typical	Max	Unit
Receiver Sensitivity (80km)	Rsens-1	-	-28	-30	dBm
Receiver Sensitivity (120km)	Rsens-1	-	-30	-32	dBm
Receiver Sensitivity (OSNR = 20dB)	Rsens-2	-	-	-24	dBm
Maximum Input Power	RX-overload	-9	-	-	dBm
Input Operating Wavelength	λ	1528	-	1564	nm
Reflectance	Rrx	-	-	-27	dB
Loss of Signal Asserted		-40	-	-	dBm
LOS De-Asserted		-	-	-28	dBm
LOS Hysteresis		0.5	-	-	dB

APD Receiver Specifications – Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	VccRX	3.13	3.3	3.47	V
Differential Output Swing	Vout P-P	370	-	2000	mV
Rise/Fall Time	Tr / Tf	-	-	175	ps
Loss of Signal –Asserted	VOH	2	-	Vcc	V
Loss of Signal –Negated	VOL	Vee	-	Vee+0.5	V

Digital Diagnostic Monitoring A/D Accuracy

Parameter	Range	Accuracy	Unit
Temperature	-40~100	± 3	℃
Voltage	0~Vcc	0.1	V
Bias Current	0~120	5	mA
TX Power	0~5	± 2	dBm
RX Power	-32~-8	± 2	dBm
TEC Current	-1200~1200	± 65	mA
LD Temperature	20~70	± 0.25	℃

Ordering information

MSA Standard:

Part Number	Product Description
SFP-EX-DW-"yy"-CC	DWDM, 1.25Gbps, 40km,-5ºC ~ +70ºC, With Digital Diagnostic Monitoring
SFP-ZX-DW-"yy"-CC	DWDM, 1.25Gbps, 80km,-5ºC ~ +70ºC, With Digital Diagnostic Monitoring
SFPEZX-DW-"yy"-CC	DWDM, 1.25Gbps, 120km,-5ºC ~ +70ºC, With Digital Diagnostic Monitoring
yy=20~59 (ITU Channel C-band)	

Cross-Platform/OEM Compatible:

Part Number	Product Description
SFP-EX-DW-"yy"-CCxx	DWDM, 1.25Gbps, 40km,-5ºC ~ +70ºC，With Digital Diagnostic Monitoring
SFP-ZX-DW-"yy"-CCxx	DWDM, 1.25Gbps, 80km,-5ºC ~ +70ºC，With Digital Diagnostic Monitoring
SFPEZX-DW-"yy"-CCxx	DWDM, 1.25Gbps, 120km,-5ºC ~ +70ºC，With Digital Diagnostic Monitoring
yy=20~59 (ITU Channel C-band)	

xx=TP, Cisco, Juniper & Ciena compatible
xx=AL, Alcatel compatible