SP-SM55080D-GP

1550nm SFP+ single-Mode Transceiver, With Diagnostic Monitoring
Duplex SFP+ Transceiver
RoHS 6 Compliant

Features

- 1550nm cooled EML Transmitter
- High sensitivity APD Receiver
- Distance up to 80km over SMF
- Single 3.3V Power supply and TTL Logic Interface
- Duplex LC Connector Interface
- Hot Pluggable
- Power Dissipation < 1.5 W
- Dispersion Tolerance 1600ps/nm
- Operating Case Temperature
  Standard: 0℃~+70℃
- Compliant with SFF-8431 MSA
- Compliant with SFF-8432 MSA
- Compliant with SFF-8472 MSA

Applications

- 10GBASE-ER/EW
- 10G FC
- Other Optical Links

Ordering information

Part No.	Description
SP-SM55080D-GP	SFP+ ZR 10Gbs 1550nm LC DDM SMF EML laser 80km

Absolute Maximum Ratings*note3

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_S	-40	+85	°C
Supply Voltage	V_{CC}	-0.5	3.6	V

*Note3: Exceeding any one of these values may destroy the device permanently.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T_C	0		+70	°C
Power Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Power Supply Current	I_{CC}			455	mA
Surge Current	I_{Surge}			+30	mA
Baud Rate	SP-SM55080D-GP			10.3	Gbit/s

Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
CML Inputs(Differential)	Vin	150		1200	mVpp	AC coupled inputs
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		Vcc+0.3	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage - High		2		Vcc+0.3	V	Io = 400μA; Host Vcc
Tx_FAULT Output Voltage - Low		0		0.5	V	Io = -4.0mA
Receiver						
CML Outputs (Differential)	Vout	350		700	mVpp	AC coupled outputs
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		Vcc+0.3	V	Io = 400μA; Host Vcc
Rx_LOS Output Voltage - Low		0		0.8	V	Io = -4.0mA
MOD_DEF (2:0)	VoH	2.5			V	With Serial ID
	VoL	0		0.5	V	

Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
9μm Core Diameter SMF			80		km
Transmitter					
Centre Wavelength	λ_C	1528	1550	1565	nm
Spectral Width (-20dB)	Δλ			1	nm
Side Mode Suppression Ratio	SMSR	30			dB
Average Output Power*note4	$P_{out, AVG}$	0		5	dBm
Extinction Ratio, SP-SM55080D-GP	ER	3.5			dB
Transmitter and Dispersion Penalty	TDP			3	dB
Average Power of OFF Transmitter				-30	dBm
Relative Intensity Noise	RIN			-128	dB/Hz
Input Differential Impedance	Z_{IN}	90	100	110	Ω
TX Disable Assert Time	t_off			10	us
Receiver					
Centre Wavelength	λ_C	1260		1600	nm
Sensitivity*note5	P_{IN}			-23	dBm
Receiver Overload	P_{MAX}	-8			dBm
Output Differential Impedance	P_{IN}	90	100	110	Ω
LOS De-Assert	LOS_D			-24	dBm
LOS Assert	LOS_A	-36			dBm

Note4: Output is coupled into a 9/125um SMF.

Note5: Minimum average optical power measured at the BER less than 1E-12, back to back. The measure pattern is PRBS 2^{31}-1.

Mechanical Specifications*