

SP-SM55040D-GP

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

Features

- ◆ 1550nm EML Transmitter
- ◆ Distance up to 40km over SMF
- ◆ Single 3.3V Power supply and TTL Logic Interface
- ◆ Duplex LC Connector Interface
- ◆ Hot Pluggable
- ◆ Power Dissipation < 1.5 W (Typical < 1W)
- ◆ Dispersion Tolerance 800ps/nm
- ◆ Operating Case Temperature
Standard: 0°C~+70°C
- ◆ Compliant with SFF-8431 MSA
- ◆ Compliant with SFF-8432 MSA
- ◆ Compliant with SFF-8472 MSA

Applications

- ◆ 10GBASE-ER/EW
- ◆ 8G/10G FC
- ◆ Other optical links

Ordering information

Part No.	Description
SP-SM55040D-GP	SFP+ ER 10Gbs 1550nm LC DDM SMF 40km

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-SM55040D-GP			10.3	Gbit/s

Performance Specifications – Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
Transmitter						
CML Inputs(Differential)	V _{in}	150		1200	mVpp	AC coupled inputs
Input Impedance (Differential)	Z _{in}	85	100	115	ohms	R _{in} > 100 kohms @ DC
Tx_DISABLE Input Voltage – High		2		V _{CC} +0.3	V	
Tx_DISABLE Input Voltage – Low		0		0.8	V	
Tx_FAULT Output Voltage – High		2		V _{CC} +0.3	V	I _o = 400µA; Host V _{CC}
Tx_FAULT Output Voltage – Low		0		0.5	V	I _o = -4.0Ma
Receiver						
CML Outputs (Differential)	V _{out}	350		700	mVpp	AC coupled outputs
Output Impedance (Differential)	Z _{out}	85	100	115	ohms	
Rx_LOS Output Voltage – High		2		V _{CC} +0.3	V	I _o = 400µA; Host V _{CC}
Rx_LOS Output Voltage – Low		0		0.8	V	I _o = -4.0Ma
MOD_DEF (2:0)	VoH	2.5			V	With Serial ID
	VoL	0		0.5	V	

Performance Specifications – Optical

Parameter	Symbol	Min.	Typical	Max.	Unit
9µm Core Diameter SMF			40		Km
Transmitter					
Centre Wavelength	λ_C	1480	1550	1600	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Average Output Power*note4	$P_{out,AVG}$	-4.7	-1	4	dBm
Optical Modulation Amplitude	$P_{out,OMA}$	1			dBm
Extinction Ratio	ER	3.5			dB
Side Mode Suppression Ratio	SMSR	30			dB
Transmitter and Dispersion Penalty	TDP			2	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_{min}			-15.8	dBm
Receiver Overload	P_{MAX}	-1			dBm
Output Differential Impedance	P_{IN}	90	100	110	Ω
LOS De-Assert	LOS_D			-16.5	dBm
LOS Assert	LOS_A	-30			dBm
	Low	0		0.8	

Note4: Output is coupled into a 9/125µm SMF. The -4.7dBm is reference IEEE 802.3ae, the typical value is -1dBm.

Note5: Minimum average optical power measured at the BER less than 1E-12, back to back. The measure pattern is PRBS 2³¹-1.

Mechanical Specifications

