

Extreme Compatible transceiver 10053H

PART NUMBER: 10053H-C

PRODUCT FEATURES:

Hot-swappable SFP Extreme compatible transceiver

Compliant with IEEE Std 802.3-2005, Gigabit Ethernet 1000Base-ZX

Compliant with SFF-8074i and SFF-8472, revision 9.5

Compliant with SFP MSA Specification, duplex LC connector compliant

Uncooled 1550nm DFB Class 1 laser safety certified

Up to 1.25Gb/s bi-directional data links

Digital Diagnostic Monitoring available

RoHS6 Compliant



SPECIFICATIONS:

Original Part Number:	10053H
Device type:	SFP ZX
Package:	SFP MSA
Wavelength:	1550nm
Distance/Power Budget:	Up to 80 km on 9/125µm SMF
Optical components	TX: DFB Laser RX: PIN Photodetector
Output power:	0 ~ +5 dBm
Receiver Sensitivity:	< -23dBm
Power Supply Voltage:	3,3V
Connector:	Dual LC
Fiber type:	Single Mode
Operating Temperature:	0 to 70 °C
Application:	Gigabit Ethernet 1000Base-ZX
DDM / DOM	Available
Compatibility:	100 % Extreme Compatible
ROHS:	Compliant

ABSOLUTE MAXIMUM RATINGS:

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Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Minimum	Maximum	Unit
Storage Temperature	Ts	-40	85	°C
Relative Humidity	RH	5	95	%
Supply Voltage	Vcc	-0,5	4,0	V

RECOMMENDED OPERATING CONDITIONS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Case Temperature	Tc	0	25	70	°C
Supply Voltage	Vcc	3,13	3,3	3,47	V
Module Supply Current	Icc			300	mA
Data Rate			1,25		Gb/s

TRANSMITTER OPTICAL AND ELECTRICAL CHARACTERISTICS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Centre Wavelength	λ_c	1480	1550	1580	nm	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Side Mode Suppression Ratio	SMSR	30		5	dB	
Average Output Power	Pout	0		5	dBm	1
Extinction Ratio	ER	9			dB	
Optical Rise/Fall Time (20%~80%)	tr/tf			0.26	ns	
Data Input Swing Differential	V _{IN}	400		1800	mV	2
Input Differential Impedance	Z _{IN}	90	100	110	Ω	
TX Disable	Disable	2,0		Vcc	V	
	Enable	0		0,8	V	
TX Fault	Fault	2,0		Vcc	V	
	Normal	0		0,8	V	

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.

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RECEIVER OPTICAL AND ELECTRICAL CHARACTERISTICS:

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Notes
Centre Wavelength	λ_c	1260		1580	nm	
Receiver Sensitivity				-23	dBm	3
Receiver Overload		-3			dBm	3
LOS De-Assert	LOSD			-24	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		1		4		
Data Output Swing Differential	Vout	370		1800		4
LOS	High	2,0		Vcc	V	
	Low			0,8	V	

Notes:

3. Measured with a PRBS 2⁷-1 test pattern @1250Mbps, BER $\leq 1 \times 10^{-12}$.
4. Internally AC-coupled.

TIMING AND ELECTRICAL

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Tx Disable Negate Time	t _{on}			1	ms
Tx Disable Assert Time	t _{off}			10	μ s
Time to initialize,include reset of TX Fault	t _{init}			300	ms
Tx Fault Assert Time	t _{fault}			100	μ s
Tx Disable To Reset	t _{reset}	10			μ s
LOS Assert Time	t _{loss on}			100	μ s
LOS De-assert Time	t _{loss off}			100	μ s
Serial ID Clock Rate	f _{serial clock}			400	KHz
MOD_DEF (0:2)-High	V _H	2		Vcc	V
MOD_DEF (0:2)-Low	V _L			0,8	V

The 10053H is a Class 1 laser product. It fully complies with the multi-sourcing agreement (MSA) which enables it to work in all MSA compliant platforms. The 10053H must be operated within the specified temperature and voltage limits.

The optical ports of the module shall be terminated with an optical connector or with a dust plug.