APSM1185

SFP 1.25Gbps Optical Transceiver 550m DDM

1. Feature:

- SFP package with LC connector
- 850nm VCSEL Laser and PIN photodetector
- Up to 550m transmission on 50/125 um MMF
- +3.3V single power supply
- LVPECL compatible data input/output interface
- Low EMI and excellent ESD protection
- Laser safety standard IEC-60825 compliant
- Compatible with RoHS

2. Application：

- Ethernet
- Telecom
- Fiber Channel

3. Absolute Maximum Ratings：

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	-40	+85	°C
Supply Voltage	Vcc	0	+3.6	V
Operating Relative Humidity	RH	5	95	%

4. Operation Environment：

Parameter		Symbol	Min	Typical	Max	Units
Supply Voltage		Vcc	3.15		3.45	V
Operating Case Temperature	Commercial	Tc	0		+70	°C
	Industrial		-40		+85	
Power Dissipation					1	W
Data Rate				1.25		Gbps

5. Optical Characteristics: (Ambient Operating Temperature 0°C to +70°C, Vcc =3.3 V)

Parameter	Symbol	Min.	Typ.	Max.	Units
Transmitter Section					
Center Wavelength	λo	840	850	860	nm
Spectral Width(RMS)	Δλ	-	-	0.85	nm
Average Output Power	Po	-8	-	-3	dBm
Extinction Ratio	Er	10	-	15	dB
Rise/Fall Time(20%~80%)	Tr/Tf			0.26	ns
Total jitter	Tj			0.43	UI
Optical Eye Diagram	IEEE 802.3z and ANSI Fibre Channel Compatible				
Receiver Section					
Center Wavelength	λo	770	850	860	nm
Receiver Sensitivity	Rsen			-19	dBm
Receiver Overload	Rov	-3			dBm
Return Loss		12			dB
LOS Assert	LOS_A	-32			dBm
LOS Dessert	LOS_D			-19	dBm
LOS Hysteresis		0.5		5	

6. Electrical Characteristics

(Ambient Operating Temperature 0°C to +70°C, Vcc =3.3 V)

Parameter		Symbol	Min.	Typ.	Max.	unit
Transmitter Section						
Input Differential Impendence		Zin	90	100	110	Ohm
Data Input Swing Differential		Vin	500		2400	mV
TX Disable	Disable		2.0		Vcc	V
	Enable		0		0.8	V
TX Fault	Assert		2.0		Vcc	V
	Deassert		0		0.8	V
Receiver Section						
Output differential impendence		Zout		100		Ohm
Data Input Swing Differential		Vout	370		2000	mV
Rx_LOS	Assert		2.0		Vcc	V
	Deassert		0		0.8	V

7. EEPROM INFORMATION（A0）：

Addr	Field Size (Bytes)	Name of Field	HEX	Description
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	MOD4
2	1	Connector	07	LC
3-10	8	Transceiver	00 00 00 02 12 00 0D 01	Transmitter Code
11	1	Encoding	01	8B10B
12	1	BR, nominal	0D	1250M bps
13	1	Reserved	00	
14	1	Length (9um)-km	37	550m
15	1	Length (9um)	00	
16	1	Length (50um)	37	550m
17	1	Length (62.5um)	1B	270m
18	1	Length (copper)	00	
19	1	Reserved	00	
20-35	16	Vendor name	57 49 4E 54 4F 50 20 20 20 20 20 20 20 20 20 20	APTEK
36	1	Reserved	00	
37-39	3	Vendor OUI	00 00 00	
40-55	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	ASC II
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	03 52	850nm
62	1	Reserved	00	
63	1	CC BASE	XX	Check sum of byte 0~62
64-65	2	Options	00 1A	LOS, TX_DISABLE, TX_FAULT
66	1	BR, max	32	50%
67	1	BR, min	32	50%
68-83	16	Vendor SN	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Unspecified
84-91	8	Vendor date code	XX XX XX 20	Year, Month, Day
92-94	3	Reserved	00	
95	1	CC_EXT	XX	Check sum of byte 64~94
96-255	160	Vendor specific		

8. Pin Description:

Pins	Name	Discription	NOTE
1	VeeT	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF2	Module Definition 2	3
5	MOD DEF1	Module Definition 1	3
6	MOD DEF0	Module Definition 0	3
7	Rate Select	Not Connected	
8	LOS	Loss of Signal	4
9	VeeR	Receiver Ground	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inv. Received Data Output	5
13	RD+	IReceived Data Output	5
14	VeeR	Receiver Ground	
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VeeT	Transmitter Ground	
18	TD+	Transmit Data Input	6
19	TD-	Inv. Transmit Data Input	6
20	VeeT	Transmitter Ground	

9. Outline drawing (mm):