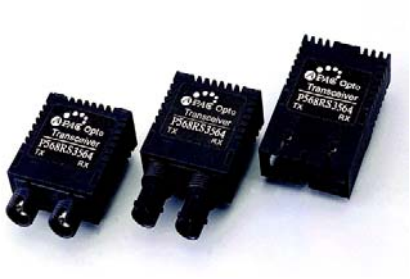
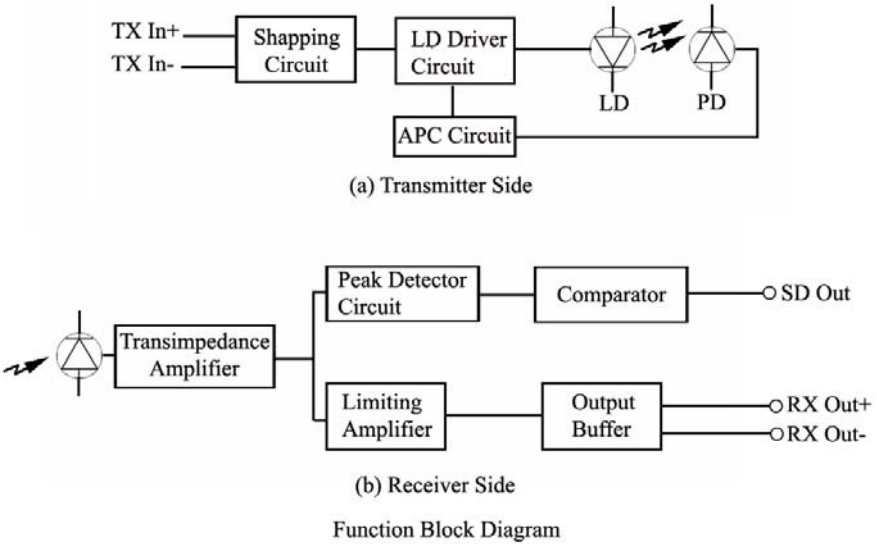
Part Number：P5H6RS3727

1. Description



The P5H6RS3727 transceiver module uses 850nm VCSEL and high-speed/quality PIN-TIA for fiber cable 62.5/125um MMF fiber optical system and link distance up to 550m. The module supplies the differential PECL +5.0V and provides system designer with products to implement a range of Gigabit Ethernet/IEEE Draft P802.3z and Data-Communication Networks. The module was all supplied in the new industry standard 1x9 SIP package style with a duplex SC connector interface..

I /O Description



Function Block Diagram

Data Input : PECL compatible differential data Input to laser diode
Signal Output : PECL compatible differential output of limiting amplifier
Alarm Function : Signal Detect(SD)

2. Acronyms

- SD Signal Detect
- BER Bit Error Rate
- TIA Transimpedance Amplifier
- BOL Beginning Of Life
- EOL End Of Life
- PECL Positive Emitter Coupler Logic
- PRBS Pseudo Random Bit Sequence
- LDD Laser Diode Driver

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3. Related documents

- GR-253. CORE Issue 2. Rev 2. Jan 1999 - SONET Requirements
- IEEE Draft P802.3z Requirements

4. Electro-Optical Specification

All specifications apply to an operating range of 0℃ to + 70℃ unless otherwise stated.

All optical powers are mean unless otherwise stated.

4.1 Absolute Maximum Ratings

If any of parameters below are exceeded, the performance specified in section 4.2 cannot be guaranteed.

Parameter	Symbol	Values MIN.	TYP.	MAX.	Unit
Storage Temperature	Tstg	-40		85	℃
Operating Temp.	Top	0		70	℃
Supply Voltage	Vo	4.75		5.25	V
Lead Soldering(Temperature)	Stemp			260	℃
Lead Soldering(Time)	Stime			10	Sec

4.2 Operating Characteristics

All parameters are EOL and apply over the ambient temperature -40℃ to + 85℃.

4.2.1 Electro-Optical Interface

Transmitter Side

Tc=0℃ to 70℃,Vcc=4.75 to 5.25V, Vee = GND , unless otherwise specified.

Parameter	Symbol	Condition	Values MIN.	TYP.	MAX.	Unit
Output Optical Power	Po	*Note1	-9.5		-5	dBm
Optical Extinction Ratio	Er	*Note1	9			dB
Eye Diagram			IEEE Draft P802.3z			
Optical Rise Time(20~80%)	T_R	*Note2			260	psec
Optical fall Time(80~20%)	T_F	*Note2			260	psec
Center Wavelength	λ		830		860	nm
Spectral Width (RMS)	△λ				0.85	nm

**Note1 ：Measured at the end of 100m length 62.5/125um step index fiber cable using 1.25Gbps,PRBS 2^7-1. Signal at the beginning of life*

**Note2 ：Measured using 1.25Gbps 1010 signal*

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Receiver Side

Tc=0℃ to 70℃,Vcc=4.75 to 5.25V, Vee=GND, unless otherwise specified.

Parameter	Symbol	Condition	Values MIN.	TYP.	MAX.	Unit
Optical Input Wavelength	λ		770		860	nm
Sensitivity (Input Power)	Pin	*Note1	-18		-3	dBm
SD Assert Level	Pa	*Note2,3			Ps+0.5	dBm
SD Deassert Level	Pd	*Note2	-29			dBm
SD Hysteresis	Phys	*Note2	0.5	1.5	6	dB

**Note1 : BER=1×10^{-12},1.25Gbps,PRBS 2^{7}-1*
**Note2 : 1.25Gbps, 1010 signal*
**Note3 : Ps at different sensitivity level*

4.2.2 Electrical Interface

Transmitter Side

Tc=0℃ to 70℃,Vcc=4.75 to 5.25V, Vee=GND, unless otherwise specified.

Parameter	Symbol	Condition	Values MIN.	TYP.	MAX.	Unit
Supply Voltage	V_{CCTX}		4.75	5	5.25	V
Supply current	Is				150	mA
Input Voltage (High)	V_{IH}	*Note1	V_{CCTX}-1.17		V_{CCTX}-0.73	V
Input Voltage (Low)	V_{IL}	*Note1	V_{CCTX}-1.95		V_{CCTX}-1.45	V
Rise Time Input Signal	T_{RIN}	*Note2			260	psec
Fall Time Input Signal	T_{FIN}	*Note2			260	psec

**Note1 : V_{CCTX} =5.0 V , Tc=25℃*
**Note2 : 20%~80%*

Receiver Side

Tc=0℃ to 70℃,Vcc=4.75 to 5.25V, Vee=GND, unless otherwise specified.

Parameter	Symbol	Condition	Values MIN.	TYP.	MAX.	Unit
Supply Voltage	V_{CCRX}		4.75	5	5.25	V
Supply Current	Is	*Note1			200	mA
Output Voltage (High)	V_{OH}	*Note2,3	V_{CCRX} -1.03		V_{CCRX} -0.88	V
Output Voltage (Low)	V_{OL}	*Note2,3	V_{CCRX} -1.81		V_{CCRX} -1.62	V
Rise Time Output Signal	T_{ROUT}	*Note4			260	psec
Fall Time Output Signal	T_{FOUT}	*Note4			260	psec

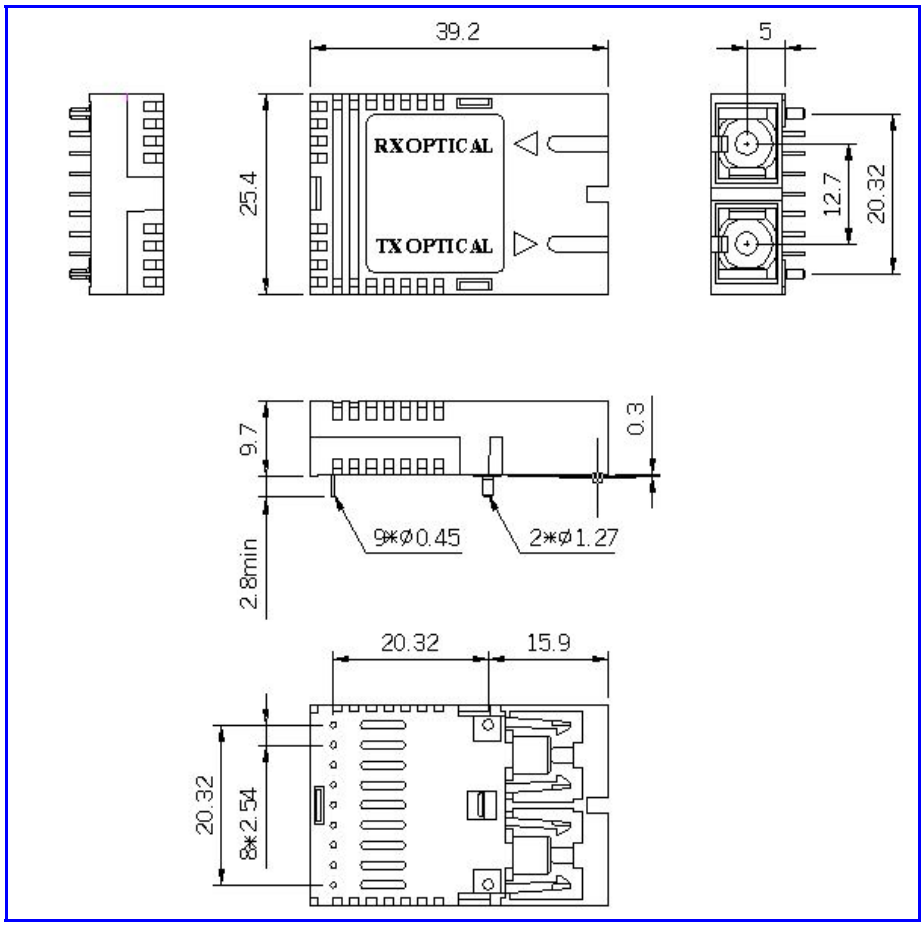
**Note1 : Output currents are not included*
**Note2 : Output load resistor(R_L=50 Ω) is connected to V_{CCRX} –2.0V*
**Note3 : V_{CCRX}=5V,Tc=25℃*
**Note4 : 20~80%*

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5. Mechanical Specification

5.1 Outline Drawing

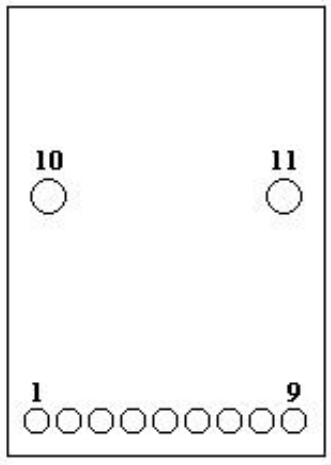
All dimensions are in millimeters.



5.2 Pin Locations

View from the above side (i.e. through this module)

PIN	Function
1	Vee Rx
2	Rx Output+
3	Rx Output-
4	SD
5	Vcc Rx
6	Vcc Tx
7	Tx Input-
8	Tx Input+
9	Vee Tx



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5.3 Pin Connections

PIN FUNCTION AND SIGNAL/VOLTAGE				
Pin Name	Function	Type	Pin #	Description
RxVEE	Receiver Ground	Power Supply	1	Ground
RXD	Receiver Output Data	PECL Compatible Output	2	Receiver Output Data
RXDn			3	Inverted Receiver Output Data
SD	Receive Signal Detect	PECL Output	4	High = Optical Signal Present
RxVCC	Transmit Power	Power Supply	5	Positive Power Supply , +5V
TxVCC	Receive Power	Power Supply	6	Positive Power Supply , +5V
TxDn	Transmitter Output Data	PECL Compatible Output	7	Inverted Transmitter Input Data
TxD			8	Transmitter Input Data
TxVEE	Transmitter Ground	Power Supply	9	Ground
NC	POST		10-11	Not Connected

5.4 Flammability

The component will comply with flammability rating UL94V-0.

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