



2.5Gb/s 5pin LC Receiver Optical Sub-assembly (ROSA)

PTCM967-418

Features

- *Data rates up to 2.7Gb/s*
- *High performance InGaAs PIN Photodiode with Transimpedance Amplifier (TIA)*
- *Operating wavelength range: 1250~1620nm*
- *Single +3.3V power supply*
- *Wide dynamic range*
- *LC package (5-pin)*
- *Case is isolated with GND pin*
- *RoHS compliant*

Application

- *2.5Gb/s SFF/SFP Transceiver Module*
- *Gigabit Ethernet Transceiver Module*
- *Fiber Channel Transceiver Module*
- *Other applications*

Description

The PTCM967-418 receiver integrates a 2.5Gb/s PIN Photodiode and a low noise trans-impedance amplifier (TIA) into a hermetic coaxial module. The PIN Photodiode transduces incident light into optical current with high efficiency. The TIA converts the current signal into a voltage signal with a very low input noise current contribution. 5-pin LC package of the receiver provide industry standard connection and the best inserting. The electrical output is differential. External AC-coupling is required.

It is optimized for 2.5Gb/s SFF/SFP transceiver module, Gigabit Ethernet Transceiver Module and Fiber Channel Transceiver Module. The receiver typically shows high sensitivity of -23dBm .

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	T_s	$^{\circ}\text{C}$	-40	85
Relative Humidity	RH	%	5	85
TIA Supply Voltage	V_{cc}	V	-0.5	4
Photodiode Bias Voltage	V_{pd}	V	-0.5	20
Input optical power	P_{in}	dBm	-	6
Lead solder temperature	-	$^{\circ}\text{C}$	-	260
Lead solder duration	-	S	-	10

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature	T_c	$^{\circ}\text{C}$	-40	25	85
TIA Supply Voltage	V_{cc}	V	2.97	3.3	3.63
Photodiode Bias Voltage	V_{pd}	V	2.97	3.3	3.63
Wavelength range	λ	nm	1250	1310	1620

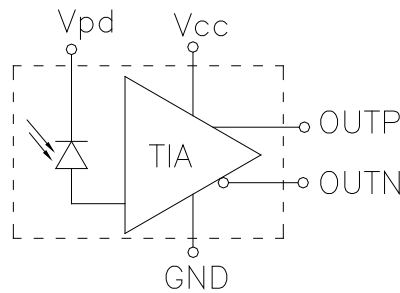
Specifications

(tested under recommended operating conditions, unless otherwise noted)

Parameter	Symbol	Unit	Min	Typ	Max	Test condition
Electrical Characteristics						
-3dB Bandwidth	BW	GHz	1.8	2.2	-	$P_{IN}=-20\text{dBm}$, from 130MHz
Low Frequency Cut-off	f_{Low}	kHz	-	50	80	-
Trans-impedance	Z_t	Ω	-	4000	-	Single-ended, p-p, $f=100\text{MHz}$
Max. Output Swing	$V_{outp}-V_{outn}$	mVp-p	-	275	500	-
Output Impedance	R_o	Ω	-	50	-	Single-ended

TIA Supply Current	I _{cc}	mA	-	42	60	No loads
Isolation Resistor between Case and GND pin	R _I	MΩ	10	-	-	
Optical Characteristics						
Responsivity	R	A/W	0.80	0.85	-	λ = 1310 nm
Sensitivity	S	dBm	-	-23	-21	NRZ, ER=10dB, 2.48832Gb/s,
Overload	P _{In-max}	dBm	0	-	-	PRBS 2 ²³ -1, BER=10 ⁻¹⁰
Optical Return Loss	ORL	dB	27	-	-	λ = 1310 nm

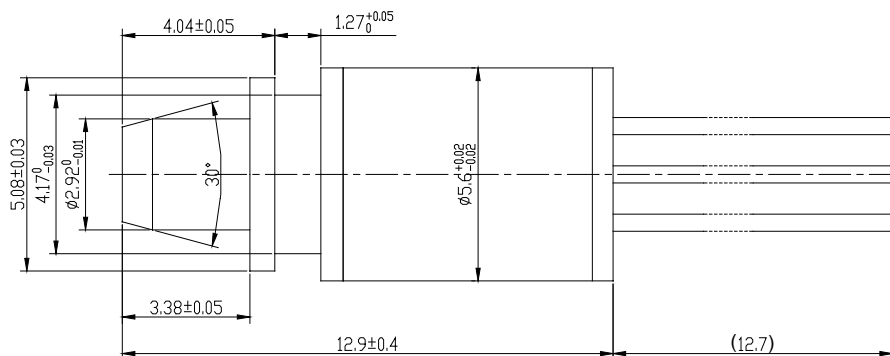
Block diagram



Pin Description

PTCM967-418		
Pin	Description	Bottom View
1	Vcc	
2	OUT-	
3	OUT+	
4	Vpd	
5	GND	

Package Outline



Regulatory Compliance

Feature	Test method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883E Method 3015.7	>500 V

Ordering Information

Part No.	Specifications						
	Package	Data-rate	Detector	Sensitivity	Overload	Top	Others
PTCM967-418	5pin LC ROSA	2.5Gb/s	PIN+TIA	< -22dBm	0dBm	-40~85 °C	ORL >27dB, RoHS

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