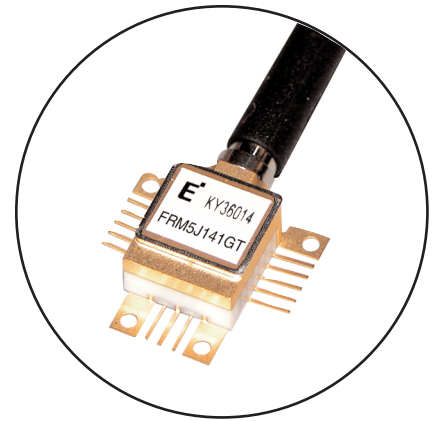


FEATURES

- Board mount type “GT” package: 17 pins
- InGaAs-PIN with pre-amplifier
- Integrated Design Optimizes Performance at Bit Rates up to 10.7Gb/s
- Electrical Differential Output
- High Sensitivity: -19.0dBm
- Operating Case Temperature: -5°C to 75°C



APPLICATIONS

This APD with preamplifier is intended to function as an optical receiver at 1,310nm or 1,530-1,610nm in SONET, SDH, DWDM or other optical fiber systems operating up to 10.7Gb/s. The typical transimpedance (Zt) value of 1,200Ω optimizes the total bandwidth for 10Gb/s application. The detector preamplifier is DC coupled and has an electrical differential output.

DESCRIPTION

The FRM5J141GT incorporates a high bandwidth InGaAs PIN photo diode, a GaAs amplifier in a hermetically sealed board mount type package. The PIN is processed with modern epitaxial techniques resulting in a reliable performance over a wide range of operating conditions.

ABSOLUTE MAXIMUM RATINGS (T_c=25°C, unless otherwise specified)

Parameter	Symbol	Ratings		Unit
		Min.	Max.	
Storage Temperature	T _{stg}	-40	+85	°C
Operating Temperature	T _{op}	-5	+75	°C
Supply Voltage	V _{ss}	-6	0	V
PIN Reverse Voltage	V _R	0	20	V
PIN Reverse Current	I _R	-	4(peak)	mA

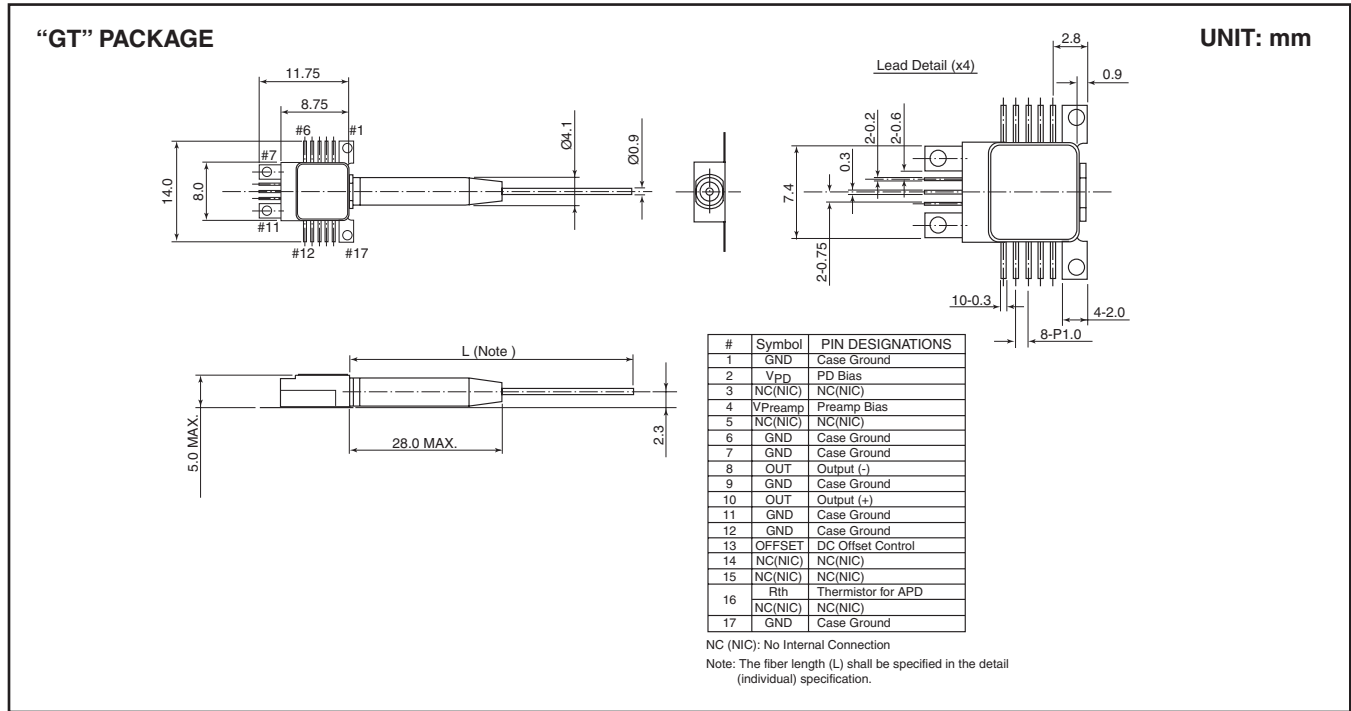
OPTICAL & ELECTRICAL CHARACTERISTICS

(T_C=25°C, λ=1,550nm, V_{SS}=-5.2V, V_R=5V, unless otherwise specified)

Parameter	Symbol	Test Conditions	Limits			Unit	
			Min.	Typ.	Max.		
PIN Responsivity	R	λ = 1,310nm, M=1	0.85	0.95	-	A/W	
		λ = 1,550nm, M=1	0.85	1.00	-		
		λ = 1,620nm, M=1	-	0.85	-		
AC Transimpedance	Z _t	f = 750MHz, Single-end	800	1200	-	Ω	
Maximum Output Voltage Swing	V _{clip}	Saturated Output Voltage	350	550	750	mV	
Bandwidth	BW	-3dB from 750MHz, Pin=-16dBm	8.0	10.0	-	GHz	
Lower Cut-off Frequency	f _{cl}	-3dB from 750MHz, Pin=-16dBm	-	40	100	kHz	
Peaking	d _{pk}	130MHz to BW, Pin=-16dBm	-	1.0	-	dB	
Group Delay Deviation	GD	1GHz to 6GHz, Pin=-16dBm	-	30	-	pS _{p-p}	
		1GHz to 8GHz, Pin=-16dBm	-	40	-		
Output Return Loss	S ₂₂	130MHz to 6GHz	-	12	-	dB	
		130MHz to 8GHz	-	7	-		
Minimum Sensitivity	P _r	10.7Gb/s, NRZ, PRBS=2 ³¹ -1, B.E.R.=10 ⁻¹² , Rext=13dB	25°C	-	-19.0	-18.0	dBm
			75°C	-	-18.0	-17.0	
Maximum Overload	P _o	10.7Gb/s, NRZ, PRBS=2 ³¹ -1, B.E.R.=10 ⁻¹² , Rext=13dB	-0.5	0	-	dBm	
Optical Return Loss	ORL	λ = 1,550nm	27	-	-	dB	
		λ = 1,310nm	27	-	-		
Preamplifier Supply Current	I _{SS}	-	-	110	130	mA	
Preamplifier Supply Voltage	V _{SS}	-	-5.46	-5.20	-4.94	V	
PIN Supply Voltage	V _R	-	4.75	5	12	V	

Note: All the parameters are measured with 50Ω load through external coupling capacitor.

Notes



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- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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