

13M200CA3

PIN preamp 200Mbps 1310 / 1550nm

Description

This optical receiver integrates a high speed InGaAs PIN photodiode and a low noise transimpedance amplifier (TIA). The preamplifier's high sensitivity and AGC-based wide dynamic range makes it ideal for various signal applications. Its lens optical system is optimized for singlemode and multimode fibers up to core-diameters of 62.5µm.



Device can differ from picture.
For details and pin out please refer to the drawing.

Applications

- Data transmission, telecommunication
- Sonet, ATM, Fast Ethernet

Features

- Data rate up to 200Mbps
- 1310nm, 1550nm (InGaAs / InP PIN photo diode)
- Low noise
- Single 3.3V or 5.0V supply
- Low power consumption
- Automatic Gain Control
- RoHS compatible

Absolute Maximum Ratings

Parameter	Symbol	min.	max.	Unit
Supply Voltage	V _{CC}	-0.5	+6.0	V
Optical Input Power (λ = 1310nm)	P _{max}	-	+8.0	dBm
Operating Temperature	T _{OP}	-40	+85	°C
Storage Temperature	T _{ST}	-40	+85	°C
Soldering Temperature	T _{SOLD}	-	260/10	°C/s

Recommended Operating Conditions

Parameter	Symbol	min.	max.	Unit
Supply Voltage	V _{CC}	+2.97	+5.5	V
Output Loading	R _{LOAD}	50	3k	Ω

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Optical and Electrical Characteristics

$T_C=25^{\circ}\text{C} \pm 2^{\circ}\text{C} / V_{CC}=3.3\text{V}$

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Responsivity, differential	R	Note 1, 2	-	18	-	kV/W
Differential output voltage	V_{OD}	Note 2, 3	-	-	375	mV
Spectral response range	λ		1270	-	1620	nm
Bandwidth (3 dB _{el})	BW	Note 4	-	165	-	MHz
Low frequency cut-off	LFC		-	-	25	kHz
Sensitivity (BER = 10^{-10})	S	ER = >10dB	-	-40.5	-38.5	dBm
Saturation (input overload)		BER= 10^{-10} ER > 10dB	+1.0	+3.0		dBm
Dynamic range		BER= 10^{-10}	40	-	-	dB
Output resistance (per side)	R_o		35	50	65	Ω
Power supply current	I_{CC}	Note 2	14	23	32	mA
Output common-mode voltage	-		0.86	0.97	1.09	V

Source: 1310nm; Fiber 62.5/125 μm
Incident power increases V_{OUT+} and decreases V_{OUT-} .

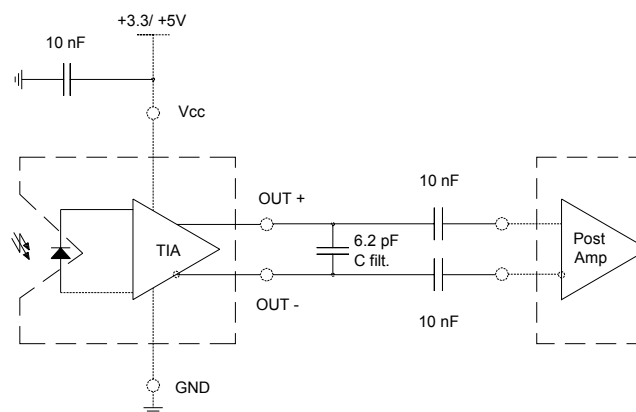
Note 1: $P_f = 10\mu\text{W}$ Peak-Peak power at 10 MHz 50% duty cycle

Note 2: $R_L = 1\text{M}\Omega$ - measured into High-Z

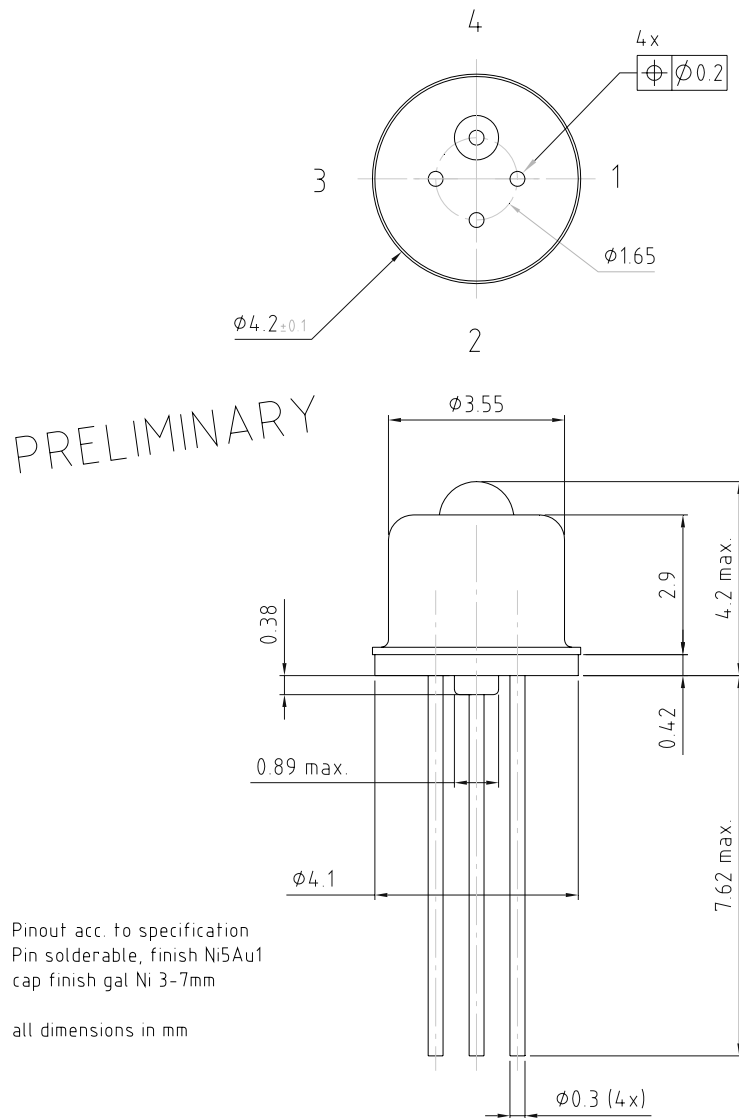
Note 3: $P_f = +3\text{dBm}$ Peak-Peak power

Note 4: Bandwidth measured to optical -3dB point with a -40dBm input signal.

Functional Schematic / Typical Application Circuit



Drawing



Pinout acc. to specification
Pin solderable, finish Ni5Au1
cap finish gal Ni 3-7mm
all dimensions in mm

Pin-Out

Pin	13M200CA3
1	V _{CC}
2	Out-
3	Out+
4	GND