

Optical Link

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<http://www.crutchfield.com/cgi-bin/ProdColl.asp?CID=271>

http://www.xaraxone.com/webxealot/workbook24/page_6.htm

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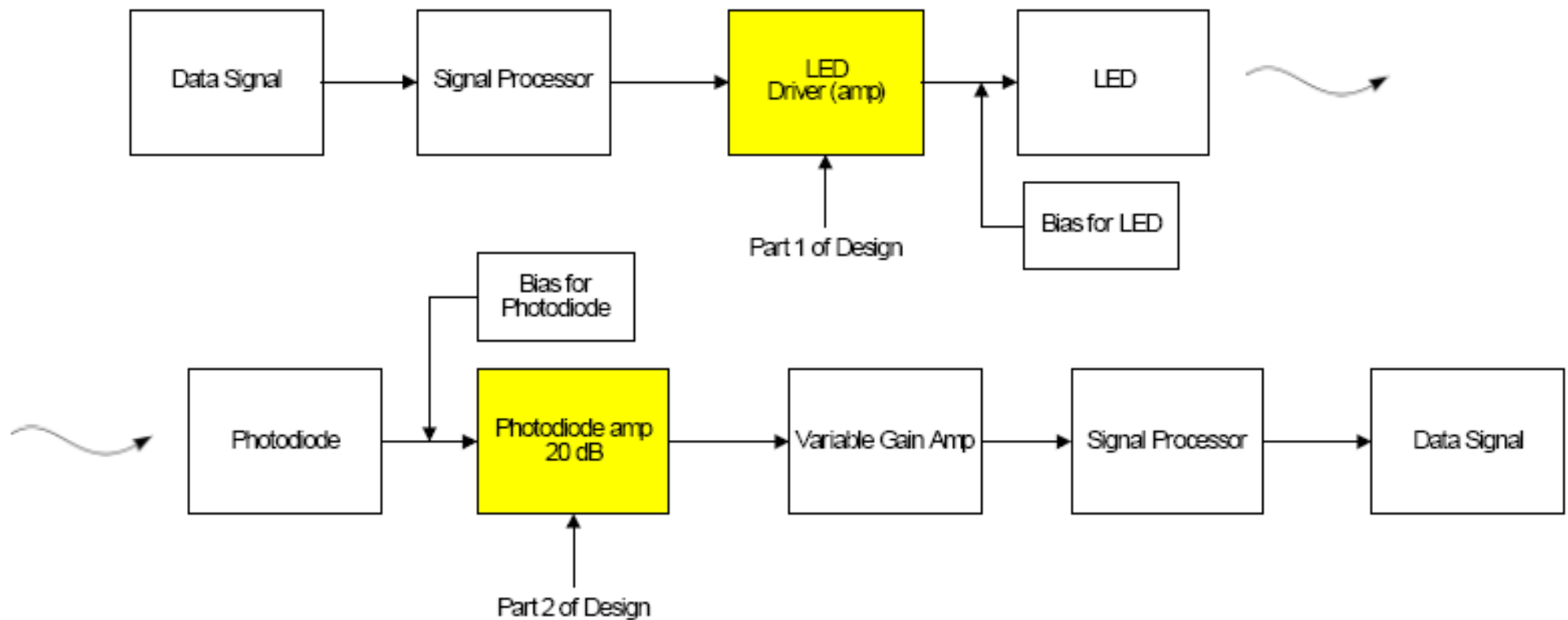
Outline

- Common Optical Links
- Our Project
- LED Driver
 - Circuit
 - Layout
 - Results
- Photodiode Amplifier
 - Circuit
 - Layout
 - Results
- Final Specifications

Common Optical Links

- Remote Controls
- Communications
 - Fiber optic lines
 - Audio
 - Video
 - Information
 - IrDA (Infrared Data Association)
 - Computers
 - PDA
 - Phones

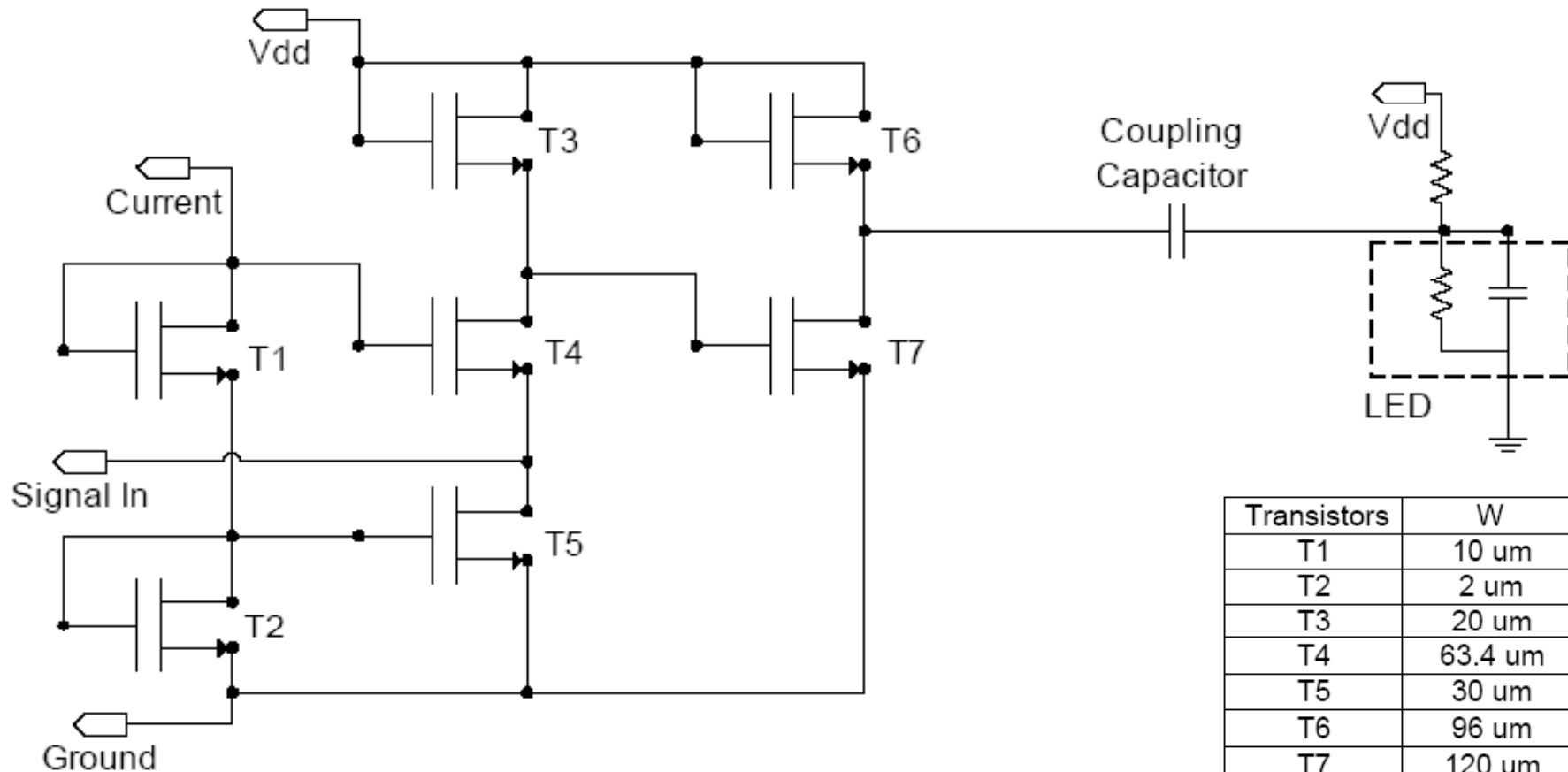
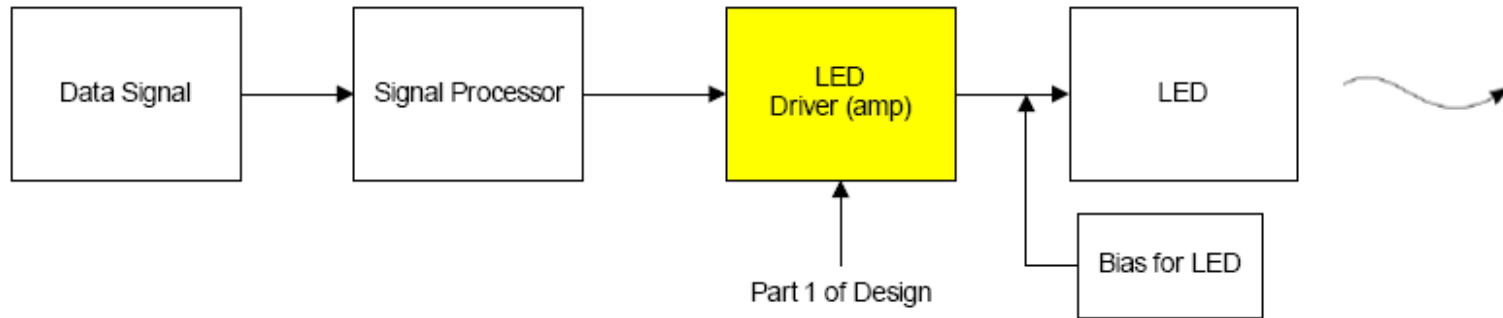
Our Project



	LED Driver
Output Impedance	25 Ω
Bandwidth	> 44.1 kHz
Gain	0 dB \pm 1dB

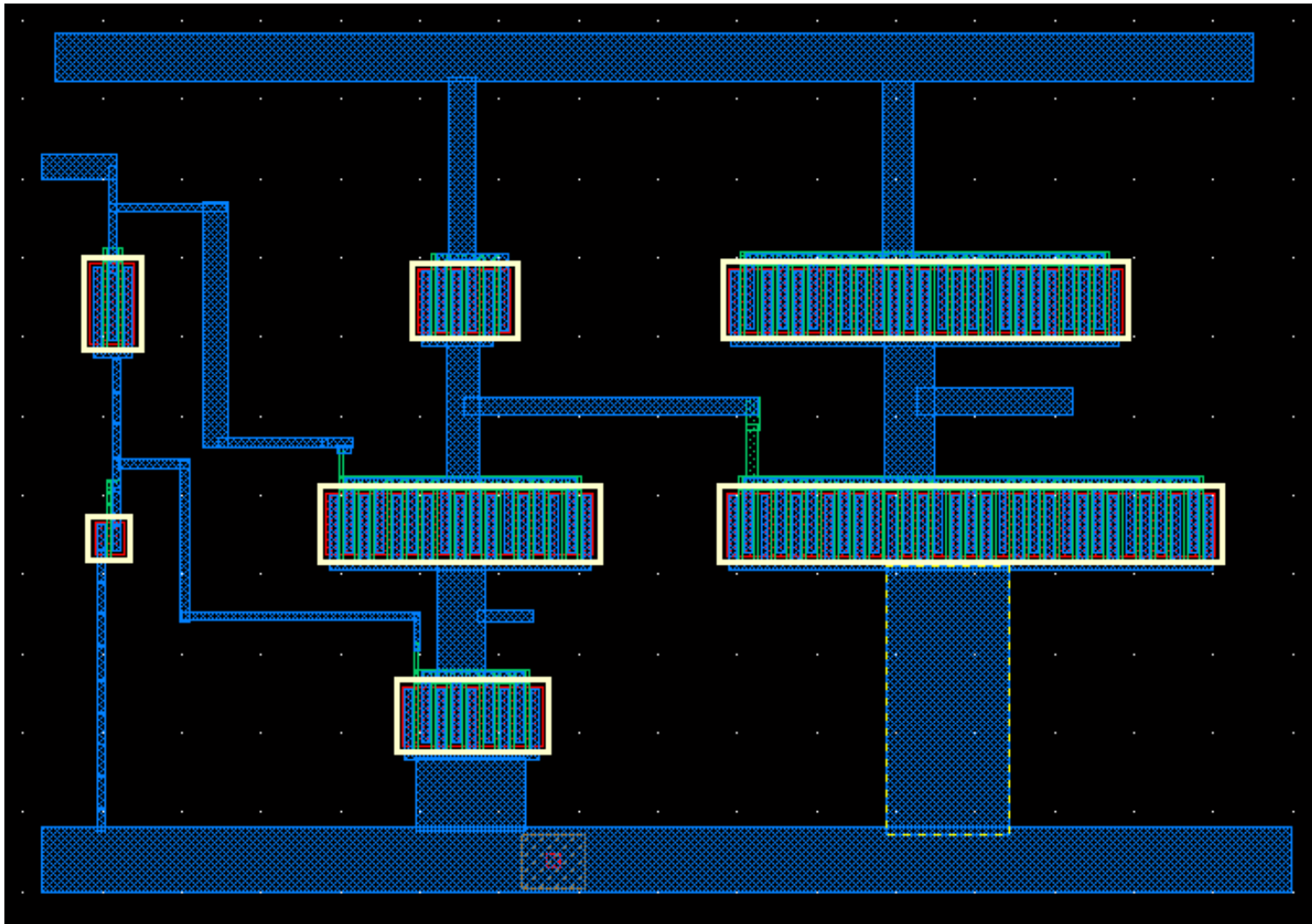
	Photodiode Amp
Input Impedance	50 Ω
Bandwidth	> 44.1 kHz
Gain	20 dB \pm 1dB

LED Driver

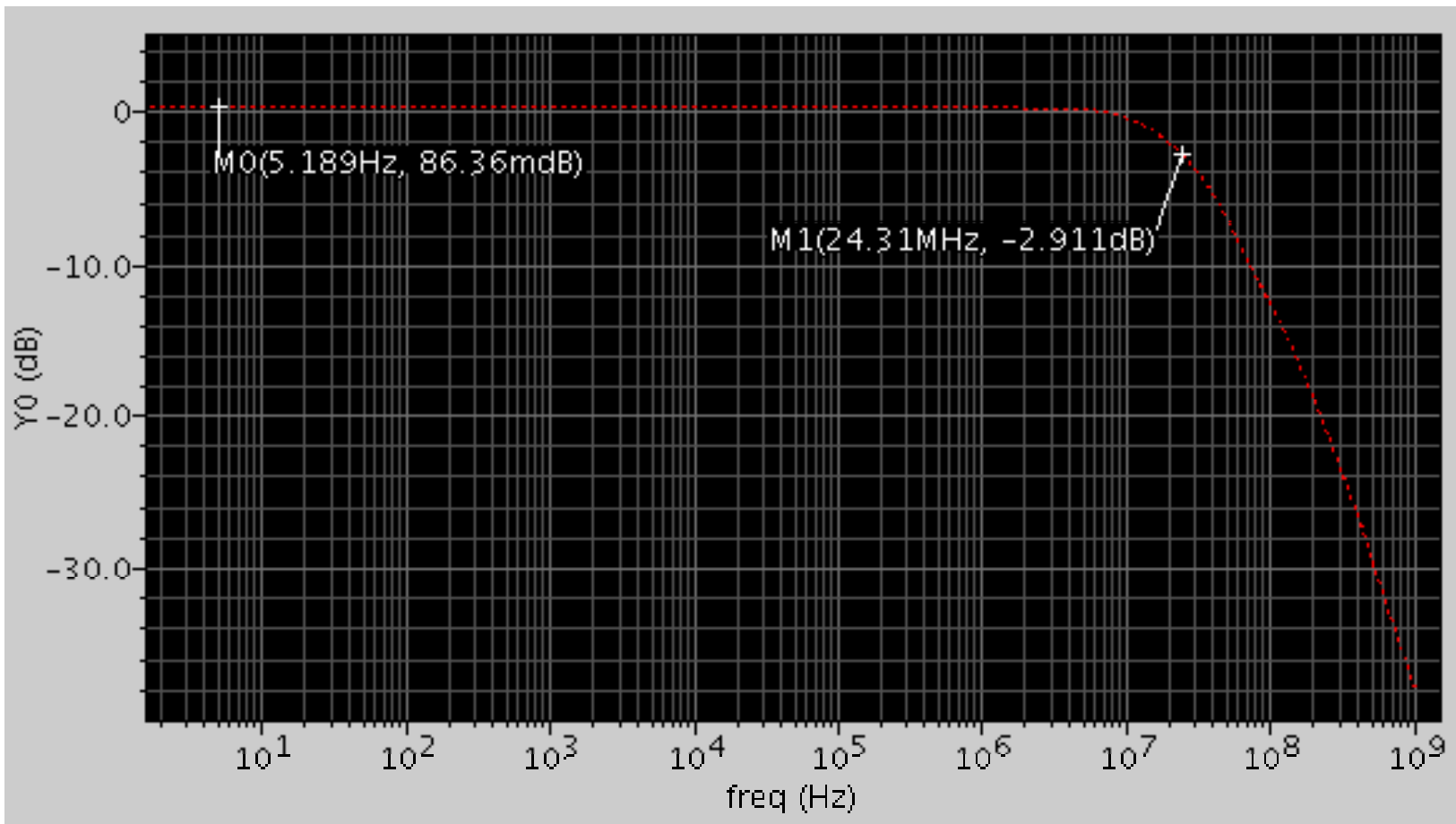


Transistors	W	L
T1	10 μm	240.0 nm
T2	2 μm	240.0 nm
T3	20 μm	240.0 nm
T4	63.4 μm	240.0 nm
T5	30 μm	240.0 nm
T6	96 μm	240.0 nm
T7	120 μm	240.0 nm

LED Driver

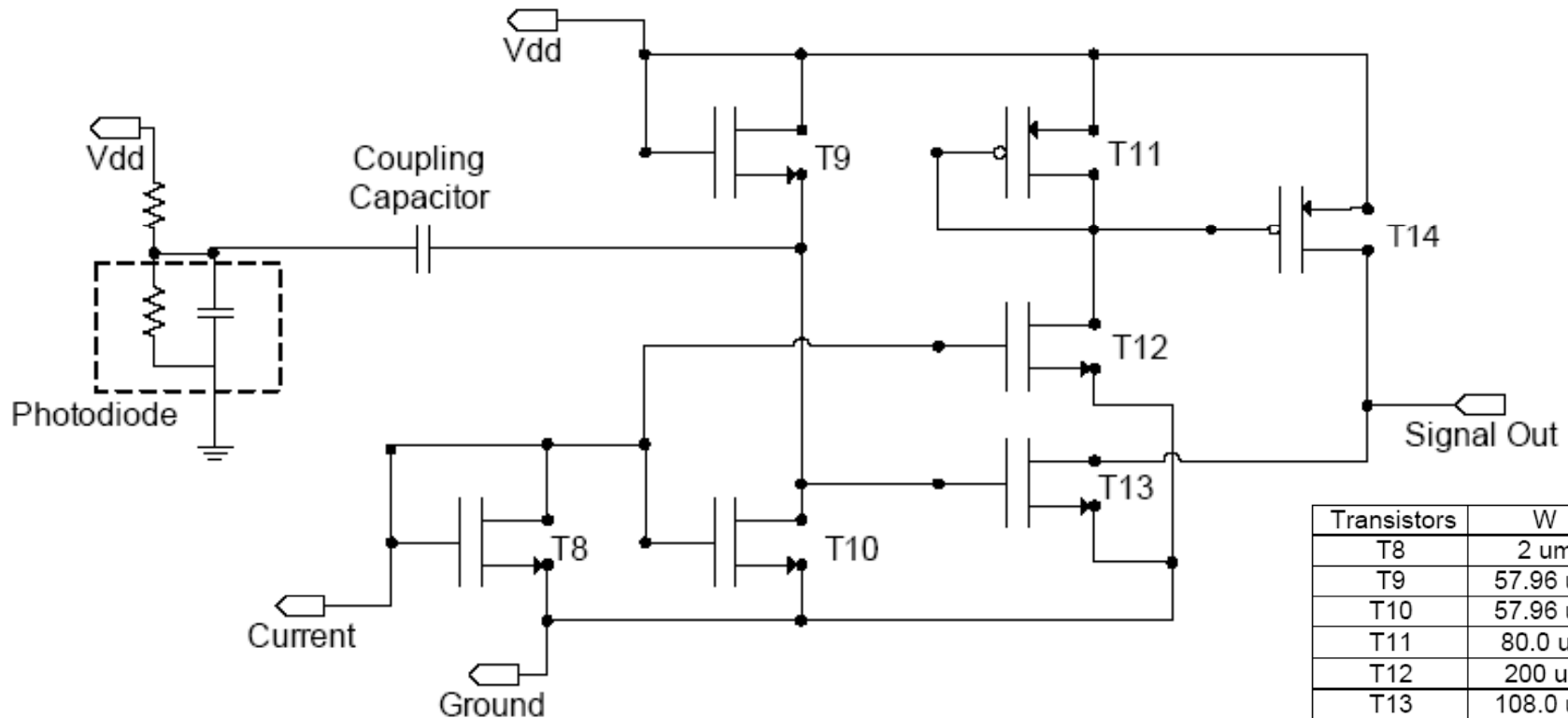
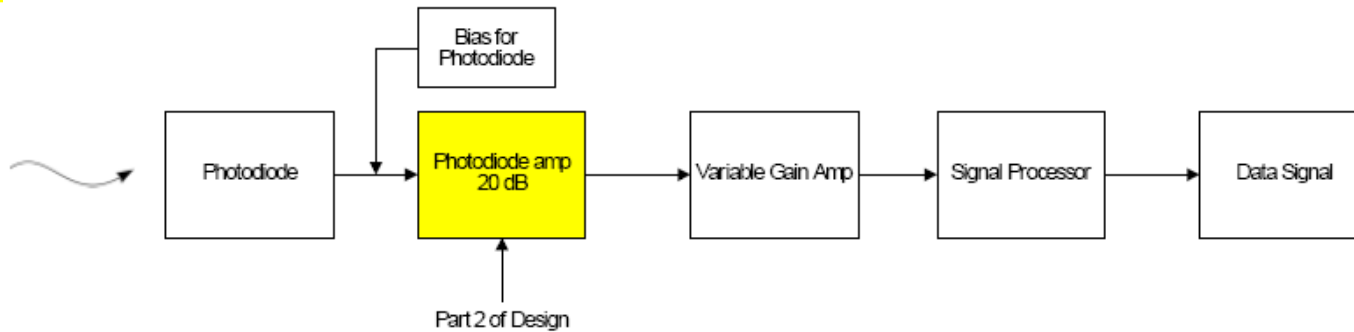


LED Driver



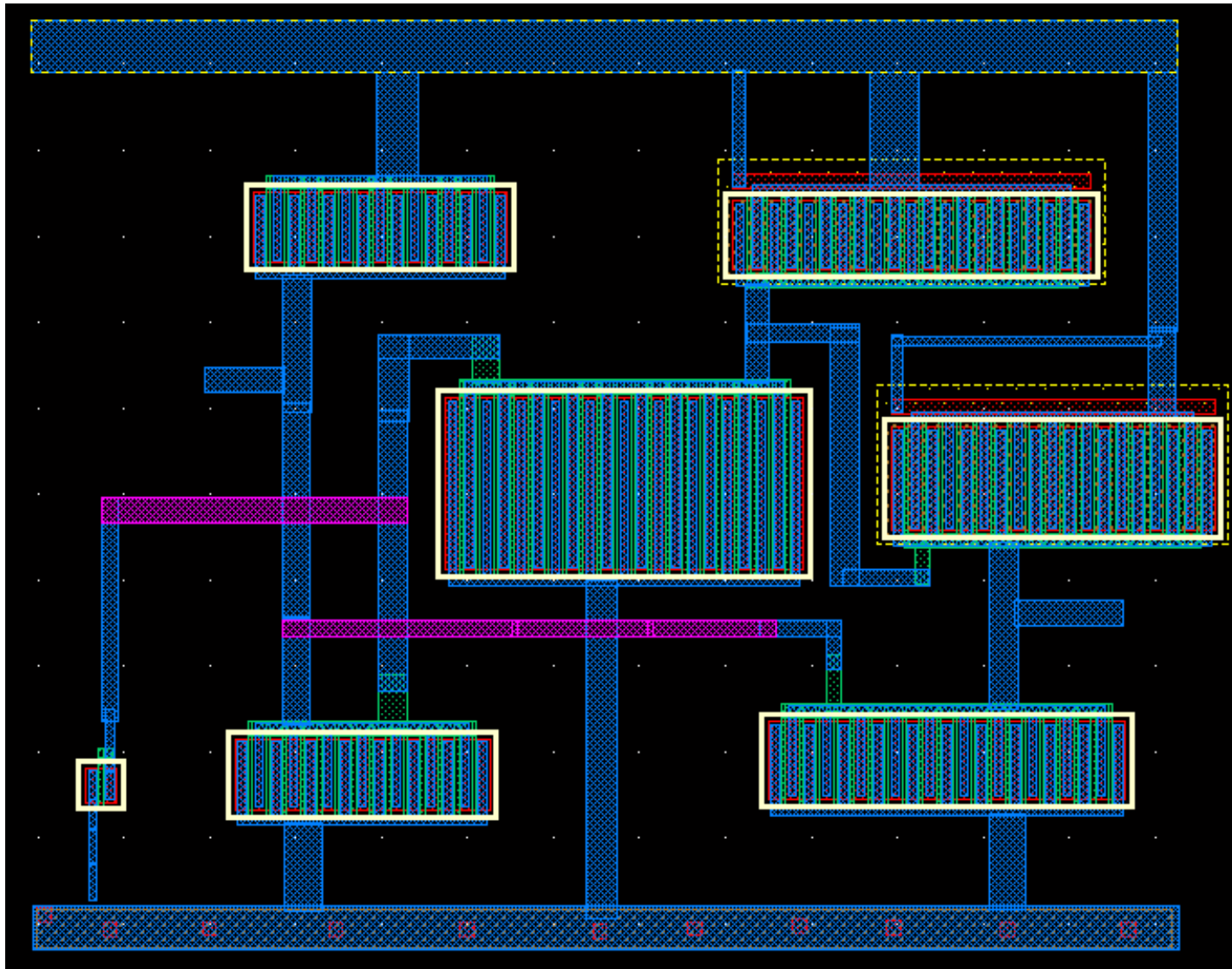
	LED Driver
Output Impedance	25.04 Ω
Bandwidth	24.31 M Hz
Gain	86.36 m dB

Photodiode Amplifier

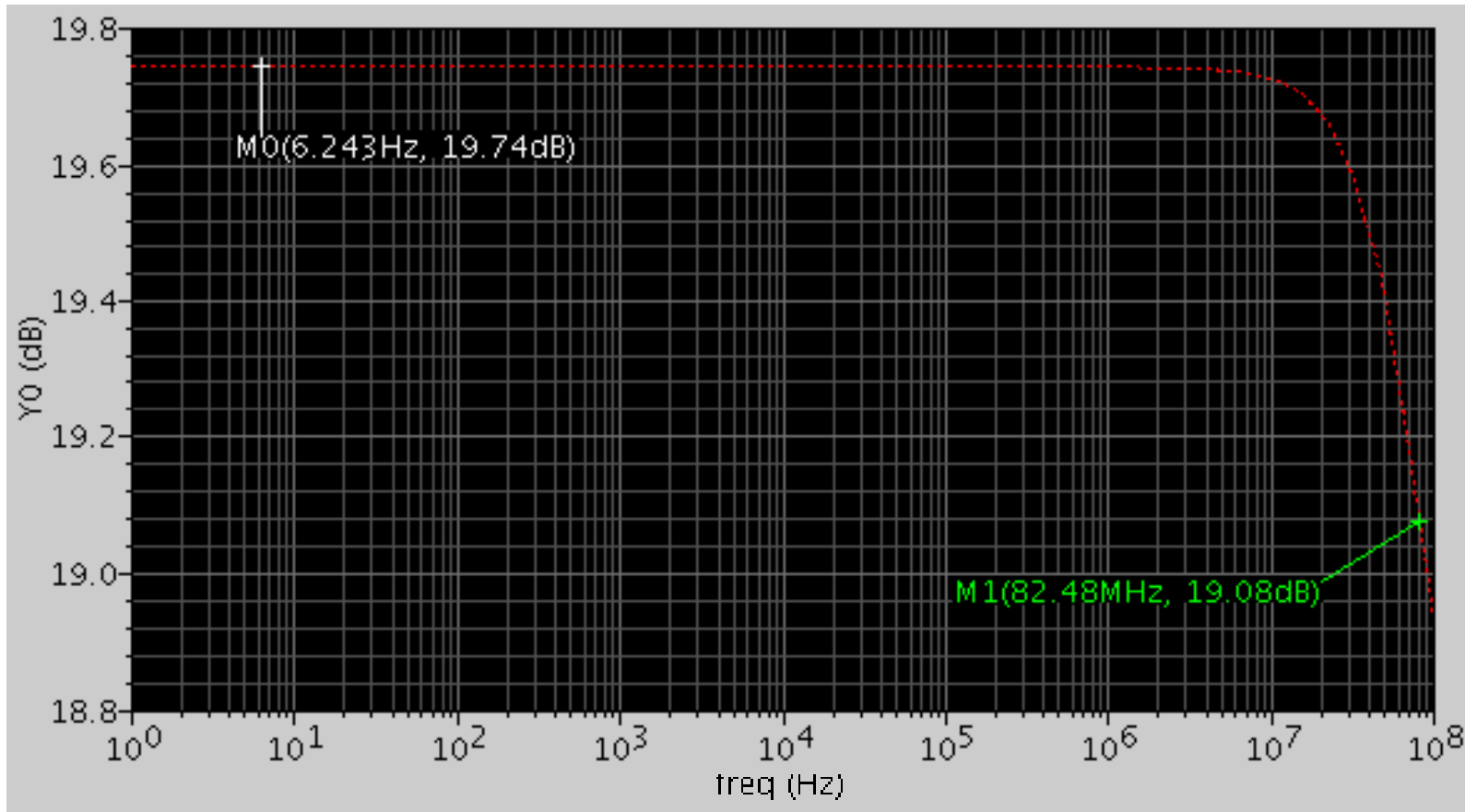


Transistors	W	L
T8	2 um	240.0 nm
T9	57.96 um	240.0 nm
T10	57.96 um	240.0 nm
T11	80.0 um	240.0 nm
T12	200 um	240.0 nm
T13	108.0 um	240.0 nm
T14	90.4 um	240.0 nm

Photodiode Amplifier



Photodiode Amplifier



	Photodiode Amp
Input Impedance	51.73 Ω
Bandwidth	82.48 M HZ
Gain	19.74 dB

Final Specifications

Parts

	LED	Photodiode
Resistance	50 Ω	100 Ω
Capacitance	500 pF	4 pF

Specifications

	LED Driver
Output Impedance	25 Ω
Bandwidth	> 44.1 kHz
Gain	0 dB \pm 1dB

	Photodiode Amp
Input Impedance	50 Ω
Bandwidth	> 44.1 k Hz
Gain	20 dB \pm 1dB

Design

	LED Driver
Output Impedance	25.04 Ω
Bandwidth	24.31 M Hz
Gain	86.36 mdB

	Photodiode Amp
Input Impedance	51.73 Ω
Bandwidth	82.48 M HZ
Gain	19.74 dB

LED Driver

Transistors	W	L
T1	10 μ m	240.0 nm
T2	2 μ m	240.0 nm
T3	20 μ m	240.0 nm
T4	63.4 μ m	240.0 nm
T5	30 μ m	240.0 nm
T6	96 μ m	240.0 nm
T7	120 μ m	240.0 nm

Photodiode Amplifier

Transistors	W	L
T8	2 μ m	240.0 nm
T9	57.96 μ m	240.0 nm
T10	57.96 μ m	240.0 nm
T11	80.0 μ m	240.0 nm
T12	200 μ m	240.0 nm
T13	108.0 μ m	240.0 nm
T14	90.4 μ m	240.0 nm

The End

Thank You



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