HAMAMATSU

Photon is our business

Optical Transceiver Photo IC for POF Communication

Presented by

Rupert Maier

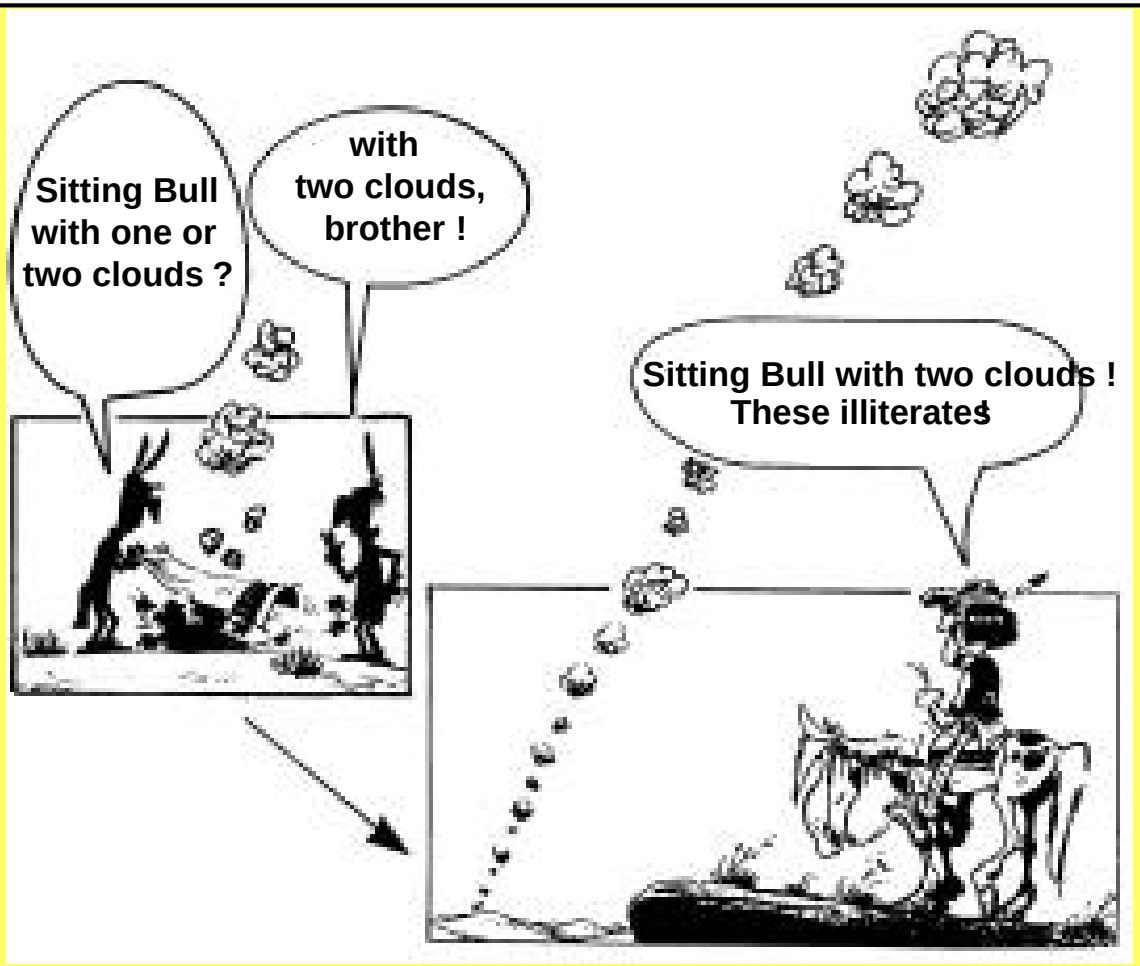
HAMAMATSU

Optical Transceiver Photo IC for POF Communication

Table of Contents:

Optical data transmission in old days

Beside acoustic oldest data transmission technique in the world !



Problems:

- **weather dependant**
- **only low bit rates**

HAMAMATSU

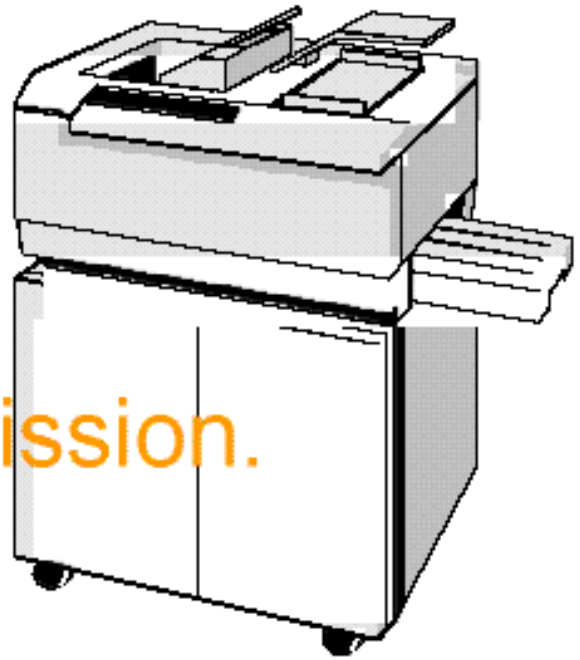
Market of POF and Optical Transceivers

Household electronics

Office work machine

Factory Automation

Small area Network
(Home,Automotive)



All Categories using
high speed data transmission.

HAMAMATSU

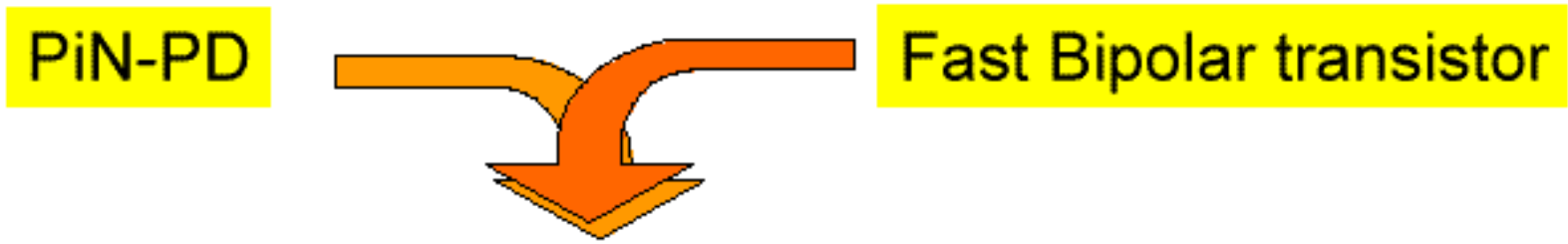
Technical Background Optical Photo-IC

STD-BiP Process

Up to 10Mbps applications
For low cost systems

HAMAMATSU

Technical Background Optical Photo-IC



PiN-BiP process

Up to 250 Mbps applications
For high speed and low cost system

HAMAMATSU

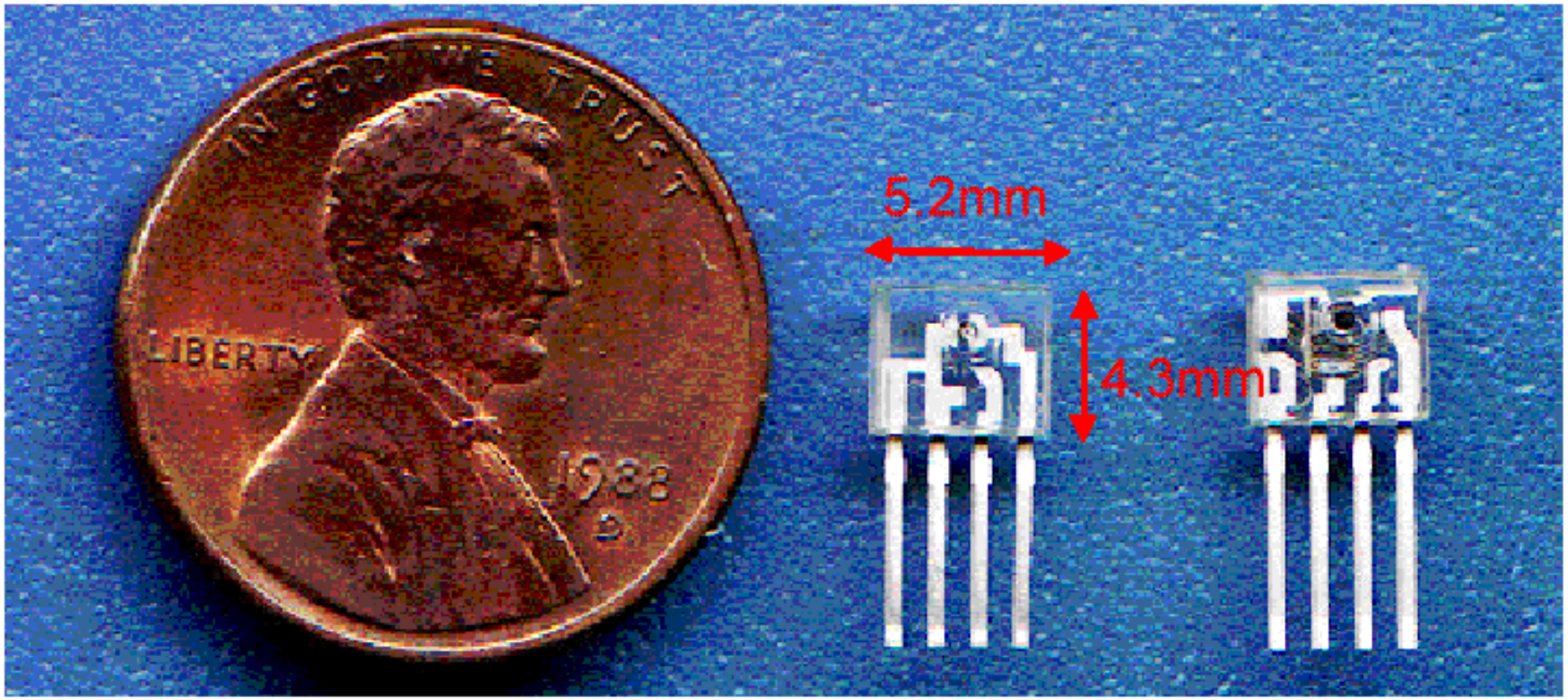
Photo-ICs and LED's for POF

S7141, L7140 50 Mbps Burst Transceiver

S7727, L7726 156 Mbps Transceiver

HAMAMATSU

Dimension outline (common)



LED PIC

HAMAMATSU

S7141,L7140 Burst transceiver

Characteristics:

DC to 50 Mbps transmission speed

Burst data transmission

for short distance < 20 m

Most suitable device for replacing metal cable with optical link.

HAMAMATSU

S7141, L7140 Burst Transceiver

S7141 Specification (Extraction)

Parameter	Min.	Max.	Unit
Baudrate	DC	50	Mbps
Current consumption	-	40	mA
Maximun Overload	-5	-	dBm
Min. input power	-	-17.5	dBm
Pulse width distortion	-6	+6	ns
Output voltage (H) *	2	-	V
Output voltage (L) *	-	1	V

*TTL threshold level compatible

HAMAMATSU

S7141, L7140 Burst Transceiver

L7140 Specification (Extraction)

Parameter	Min.	Max.	Unit
Baudrate	DC	50	Mbps
Forward Voltage		2.3	V
Opt. output power (If=10mA)	-10		dBm
Opt. output power (If=20mA)	-7		dBm
Center wavelength	650 (TYP)		nm
Rise time/Fall time		8	ns

HAMAMATSU

S7727, L7726 156 Mbps Transceiver

Characteristics:

- 4 M to 156 Mbps transmission speed
- no Burst data transmission
- for middle distance < 50 m
- fast LED, fc = 100 MHz

HAMAMATSU

S7727, L7726 156 Mbps Transceiver

S7727 Specification (Extraction)

Parameter	Min.	Max.	Unit
Baudrate	4	156	Mbps
Current consumption	-	40	mA
Maximun Overload	-2	-	dBm
Min. Receiver input power	-	-22	dBm
Pulse width distortion	-3	+3	ns
Output voltage (H)	3.9	4.3	V
Output voltage (L)	2.9	3.4	V

*ECL level compatible

HAMAMATSU

S7727, L7726 156 Mbps Transceiver

L7726 Specification (Extraction)

Parameter	Min.	Max.	Unit
Baudrate	DC	156	Mbps
Forward Voltage	2.3 (TYP)		V
Opt. output power (If=30mA)*	-1.5 (TYP)		dBm
Center wavelength	650 (TYP)		nm
Rise and Fall time	4 (TYP)		ns

*This specification may change.

HAMAMATSU

Future

Faster devices > 250 Mbps

Additional Functions

HAMAMATSU

S8046, L8045 50 Mbps Transceiver

Characteristics:

- 4 M to 50 Mbps transmission speed
- no Burst data transmission
- optical input power min. -29.5 dBm
- power safe mode
- optical wake up
- fast LED, fc = 100 MHz

HAMAMATSU

goes

POF