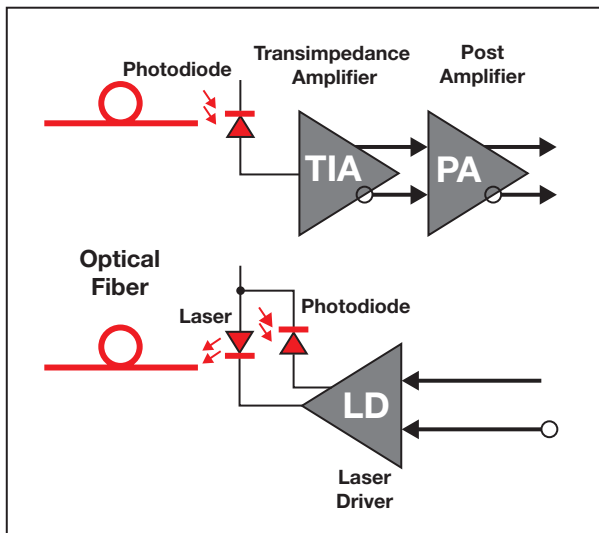


High-speed optoelectronic devices and equalizers quick reference card

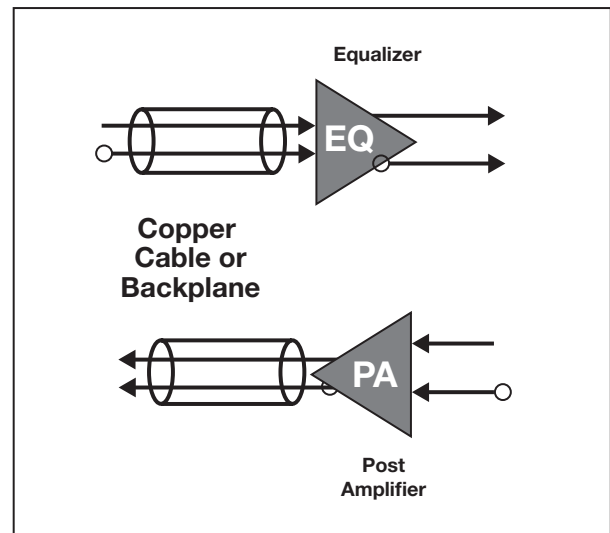


High-speed optoelectronic devices and equalizers

Physical-media-dependent (PMD) electronics from Texas Instruments (TI) provide optical component and systems developers with key building blocks such as laser diode drivers, transimpedance amplifiers, post amplifiers, and equalizers. TI solutions provide wide data-rate range support while minimizing power, PCB real estate, and implementation cost.



Optical network signal chain



Copper network signal chain

Laser drivers

- Data rates ranging from 155 Mbps to 11.3 Gbps
- Automatic power control (APC), temperature compensation of modulation and bias currents
- Fault detection and current monitors

Transimpedance amplifiers

- Data rates up to 11.3 Gbps
- Low input-referred noise
- Transimpedance between 2.6 and 7 k Ω with low power dissipation

Post amplifiers

- Data rates up to 11.3 Gbps
- Loss-of-signal (LOS) detection
- Received-signal-strength indicator (RSSI)

Equalizers

- Data rates up to 11.3 Gbps
- Devices compensate for channel loss of active cables and printed circuit board traces up to 30 dB at the receive side
- Loss-of-signal (LOS) detection

Samples, data sheets and evaluation modules available at: www.ti.com/interface



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High-speed optoelectronic devices and equalizers

Laser Drivers

Device	Data Rate (typ) (Gbps)	V _{CC} (V) (typ)	Modulation Current (mA)	Bias (mA)	Rise and Fall Time (typ) (μs)	DJ (typ) (ps)	Package
ONET1101L	Up to 11.3	3.3	85	100	25	5	24-VQFN
ONET1191V	Up to 11.3	3.3	45	20	25	4	20-QFN
ONET4201LD	0.155 to 4.25	3.3	85	100	55	15	24-VQFN
ONET4211LD	0.155 to 4.25	3.3	85	100	35	15	24-VQFN
ONET4291VA	1 to 4.25	3.3	11.5	11	35	7	20-QFN
ONET8501V	Up to 11.3	3.3	24	20	24	4	20-QFN

Post Amplifiers

Device	Data Rate (typ) (Gbps)	V _{CC} (V) (typ)	V _{IN} (min) (typ) (mV _{PP})	I _{VCC} (typ) (mA)	DJ (typ) (ps)	Power (typ) (mW)	Package
ONET1191P	Up to 11.3	3.3	2.5	33	4	110	16-QFN
ONET4201PA	0.155 to 4.25	3.3	3	35	3	115	16-QFN
ONET4251PA	1 to 4.25	3.3	50	35	6	115	16-QFN
ONET4291PA	1 to 4.25	3.3	2	46	8	152	16-QFN
ONET8501P	2 to 11.3	3.3	6	48	4	160	16-QFN
ONET8501PB	2 to 11.3	3.3	5	50	3	165	16-QFN

Transimpedance Amplifiers

Device	Data Rate (typ) (Gbps)	V _{CC} (V) (typ)	Transimpedance (kΩ)	Input Referred Noise (typ) (nArms)	I _{VCC} (typ) (mA)	DJ (typ) (ps)	Power (typ) (mW)	Package(s)
ONET2511TA	2.5	3.3	4	470	25	25	83	DIE
ONET2591TA	Up to 2.5	3.3	2.6	280	14	8.5	46	DIE, WAFER
ONET4291TA	Up to 4.25	3.3	3.2	465	17	10	56	DIE, WAFER
ONET8501T	Up to 12.5	3.3	7	900	28	6	93	DIE, WAFER
ONET8511T	Up to 11.3	3.3	5.5	1000	46	8	151	DIE, WAFER
ONET8531T	Up to 12.5	3.3	4.5	900	28	6	93	DIE, WAFER

Equalizers

Part Number	Data Rate (typ) (Gbps)	V _{CC} (V) (typ)	V _{IN} (max) (mV _{PP})	V _{OD} (typ) (mV _{PP})	I _{VCC} (max) (mA)	DJ (typ) (ps)	RJ (typ) (ps)	Package
TLK1101E	Up to 11.3	3.3	1600	300/600/900	110	12 (with 27-dB loss at 5 GHz)	1 (with 27-dB loss at 5 GHz)	20-QFN
TLK1102E	Up to 11.3	3.3	1600	225 to 1200	230	8 (with 27-dB loss at 5.65 GHz)	1.2 (with 27-dB loss at 5.65 GHz)	24-VQFN
TLK6201EA	Up to 6.25	3.3	2000	800/1200	67	12 (with 18-dB loss at 3 GHz)	1 (with 18-dB loss at 3 GHz)	16-QFN

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