

JS-SM5510-A2C

10.3Gbps SFP+ Transceiver, Single Mode, 120km Reach

Product Features

- Supports up to 10.7Gbps bit rates
- Hot-pluggable SFP+ footprint
- 1550nm Cooled EML laser and APD photodiode, Up to 120km for SMF transmission
- Compliant with SFP+ MSA and SFF-8472 with duplex LC receptacle
- Compatible with RoHS
- Single +3.3V power supply
- Real Time Digital Diagnostic Monitoring
- Operating case temperature:
Standard: 0 to +70°C

Applications

- 10Gbps Optical systems
- 10GBASE-ZR at 10.3125Gbps
- 10GBASE-ZW at 9.953Gbps
- LTE systems
- Other Optical links

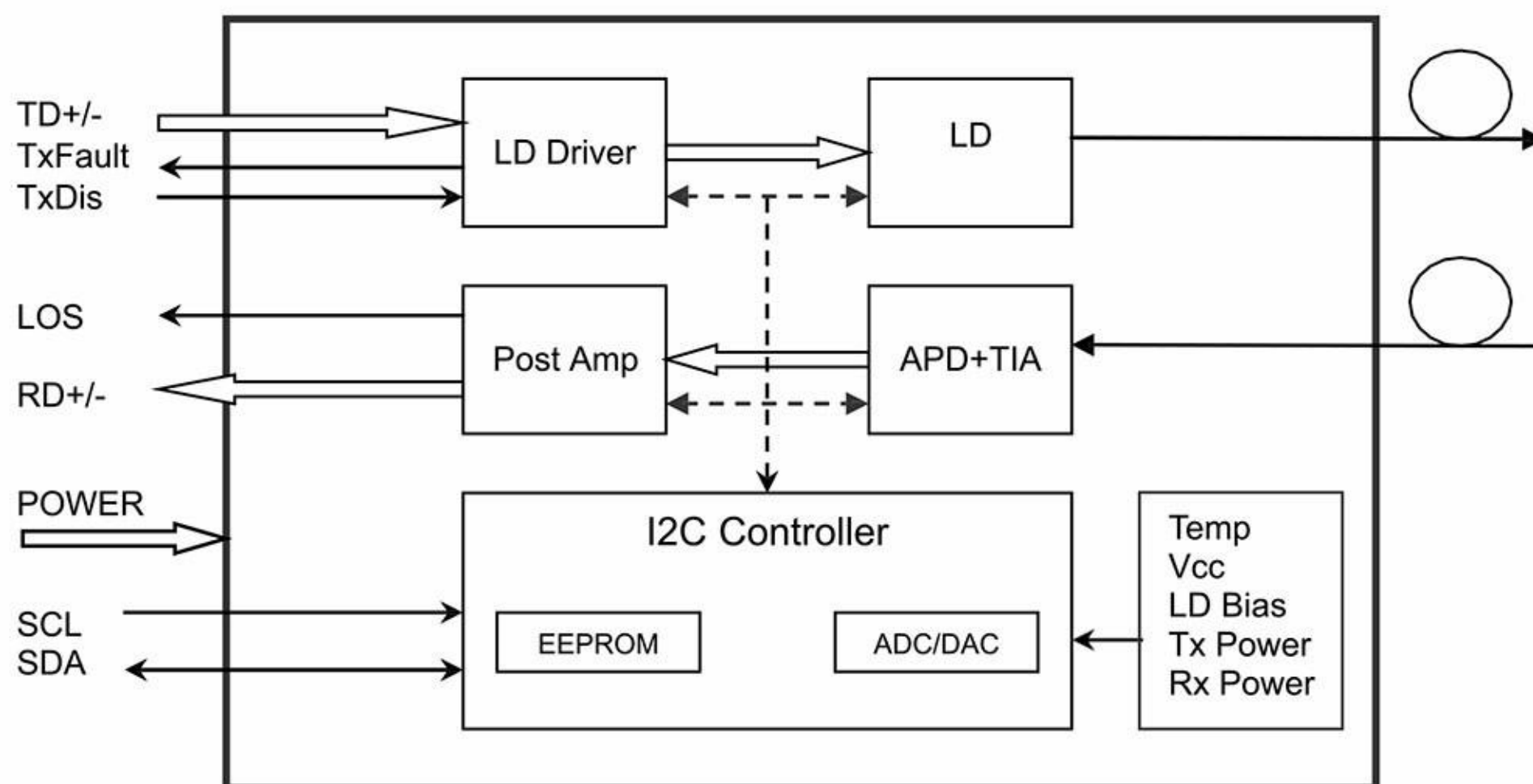


Description

The SFP+ transceivers are high performance, cost effective modules supporting data rate of 10Gbps and 120km transmission distance with SMF.

The transceiver consists of three sections: a Cooled EML laser transmitter, a APD photodiode integrated with a trans-impedance preamplifier (TIA) and MCU control unit. All modules satisfy class I laser safety requirements. The transceivers are compatible with SFP Multi-Source Agreement and SFF-8472 digital diagnostics functions.





Transceiver functional diagram

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage	Vcc	-0.5	4.5	V
Storage Temperature	Ts	-40	+85	°C
Operating Humidity	-	5	85	%

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	Tc	0		+70	°C
Power Supply Voltage	Vcc	3.135	3.30	3.465	V
Power Supply Current	Icc			600	mA
Data Rate		1.0	10.3	10.7	Gbps



Optical and Electrical Characteristics

Parameter		Symbol	Min	Typical	Max	Unit	Notes
Transmitter							
Centre Wavelength		λ_c	1530	1550	1565	nm	
Side-Mode Suppression Ratio		SMSR	30	-		dB	
Average Output Power		Pout	+2.0		+6.0	dBm	1
Extinction Ratio		ER	9.0			dB	
Data Input Swing Differential		VIN	180		850	mV	2
Input Differential Impedance		ZIN	90	100	110	Ω	
TX Disable	Disable		2.0		Vcc	V	
	Enable		0		0.8	V	
TX Fault	Fault		2.0		Vcc	V	
	Normal		0		0.8	V	
Receiver							
Centre Wavelength		λ_c	1260		1600	nm	
Receiver Sensitivity					-25	dBm	3
Receiver Overload			-7			dBm	3
LOS De-Assert		LOSD			-27	dBm	
LOS Assert		LOSA	-35			dBm	
LOS Hysteresis			0.5		4	dB	
Data Output Swing Differential		Vout	300		900	mV	4
LOS	High		2.0		Vcc	V	
	Low				0.8	V	

Notes:

1. The optical power is launched into SMF.
2. PECL input, internally AC-coupled and terminated.
3. Measured with a PRBS $2^{31}-1$ test pattern @10312Mbps, BER $\leq 1 \times 10^{-12}$.
4. Internally AC-coupled.



Timing and Electrical

Parameter	Symbol	Min	Typical	Max	Unit
Tx Disable Negate Time	t_on			1	ms
Tx Disable Assert Time	t_off			10	μs
Time To Initialize, including Reset of Tx Fault	t_init			300	ms
Tx Fault Assert Time	t_fault			100	μs
Tx Disable To Reset	t_reset	10			μs
LOS Assert Time	t_loss_on			100	μs
LOS De-assert Time	t_loss_off			100	μs
Serial ID Clock Rate	f_serial_clock		100	400	KHz
MOD_DEF (0:2)-High	VH	2		Vcc	V
MOD_DEF (0:2)-Low	VL			0.8	V

Diagnostics

Parameter	Range	Unit	Accuracy	Calibration
Temperature	0 to +70	°C	±3°C	Internal
Voltage	3.0 to 3.6	V	±3%	Internal
Bias Current	0 to 100	mA	±10%	Internal
TX Power	-1 to +5	dBm	±3dB	Internal
RX Power	-26 to -6	dBm	±3dB	Internal

