OKI Electronic Components

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OAS1043F-V2 Preliminary

OC192 IR-2 10Gbit/s Transmitter

GENERAL DESCRIPTION

The OAS1043F-V2 is a long wavelength optical transmitter intended for 9.953 Gbit/s applications such as SONET OC-192 IR-2 and SDH G691 S-64.2b. The transmitter is operated from –5.2 V and 3.3 V DC power supply and with AC coupled 10 Gbit/s signal interface.

FEATURES

- Compliant with OC192 IR-2 and STM S64.2 applications
- EA-LD modulation type
- Average fiber output power : –1 dBm Min.
- Dispersion penalty : 2 dB Max. (@800 ps/nm)
- Low power consumption : 3.2 W Typ. (@25 deg), 5.7 W Typ.(@65 deg)
- Operating temperature range : 0 to 65 °C
- Package size : $95 \times 110 \times 13.2$ mm^3
- Power supply : +3.3 V, –5.2 V

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Limit	Unit
Storage Temperature	Tstg	–40 to 70	°C
Operating Temperature	Top	0 to 65	°C
Power Supply Voltage	Vcc	4	V
	V_{EE}	–6	V
Input RF Level	Vin	1.8	Vpp

ELECTRICAL AND OPTICAL SPECIFICATIONS

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Fiber Output Power	Pf	–1.0	—	+2.0	dBm	note1
Peak Wave Length	λp	1530	—	1565	nm	note1
Extinction Ratio	Er	8.2	—	—	dB	note1
Side Mode Suppression Ratio	SMSR	30	—	—	dB	note1
Dispersion Penalty	Dp	—	—	2.0	dB	note2

note1: 9.95328 Gb/s, NRZ 2^{31}-1, Mark Density 1/2
Vcc = +3.3 V ±5 %, VEE = –5.2 ±5%
note2: Dispersion = +800 ps/nm, BER 10^{-12}

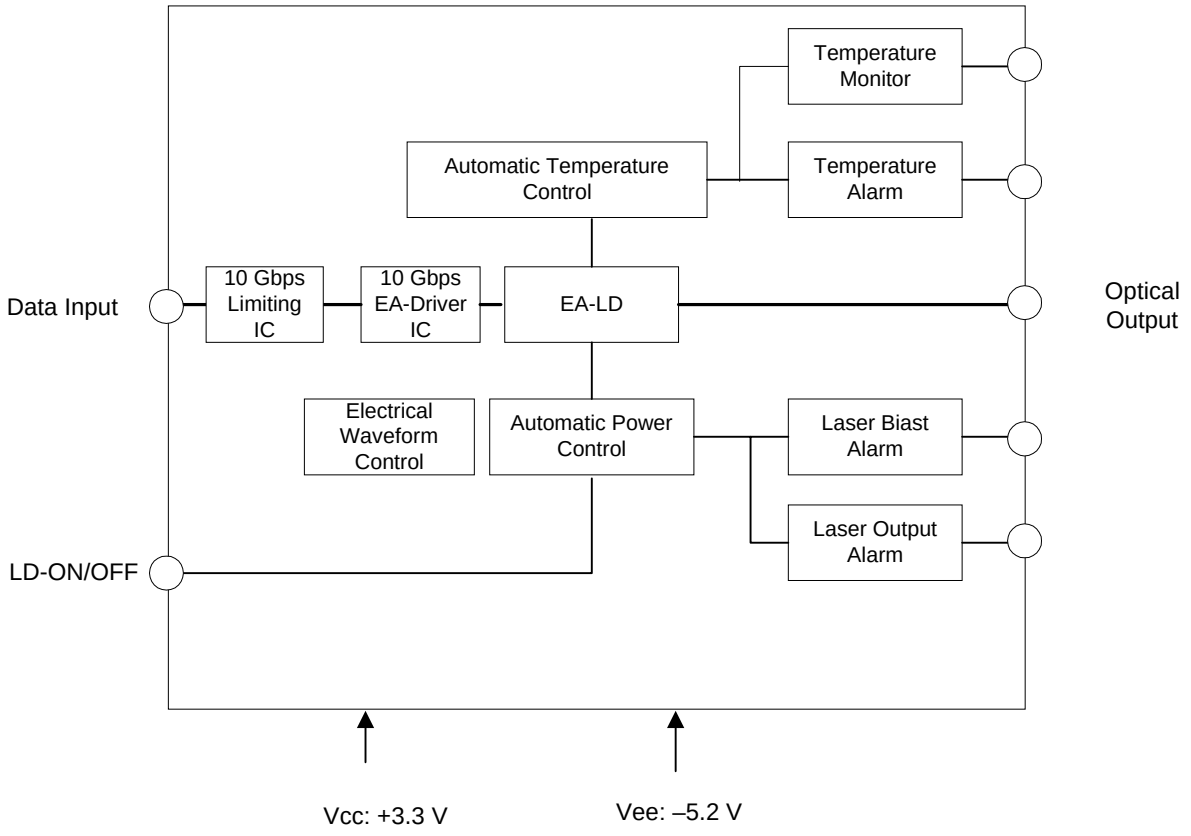
Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Bit Rate			9.95328		Gbit/s	
Transmission Code			NRZ		—	
Data Input Voltage	Vin	0.4	—	1.0	Vpp	50 ohm, AC coupled
DC Power Supply Voltage	Vcc	3.14	3.3	3.46	V	
	Vee	–4.94	–5.2	–5.46	V	
DC Power Supply Current	Icc	—	—	1.4	A	
	Iee	—	—	0.4	A	
Power Consumption	Pc	—	—	6.5	W	
Laser Output Alarm	LFA	Normal Operation: LOW Alarm threshold: Set Power –6 ±1 dB				Open Collector
Laser Bias Alarm	LBM	Normal Operation: LOW Alarm threshold: 150 ±10 mA				Open Collector
Temperature Alarm	T-ALM	Normal Operation: LOW Alarm threshold: Set Temperature ±1°C				Open Collector
LD ON/OFF	LSC	ON: < 0.5 V OFF: > 1.6 V				

MODULE CHARACTERISTICS

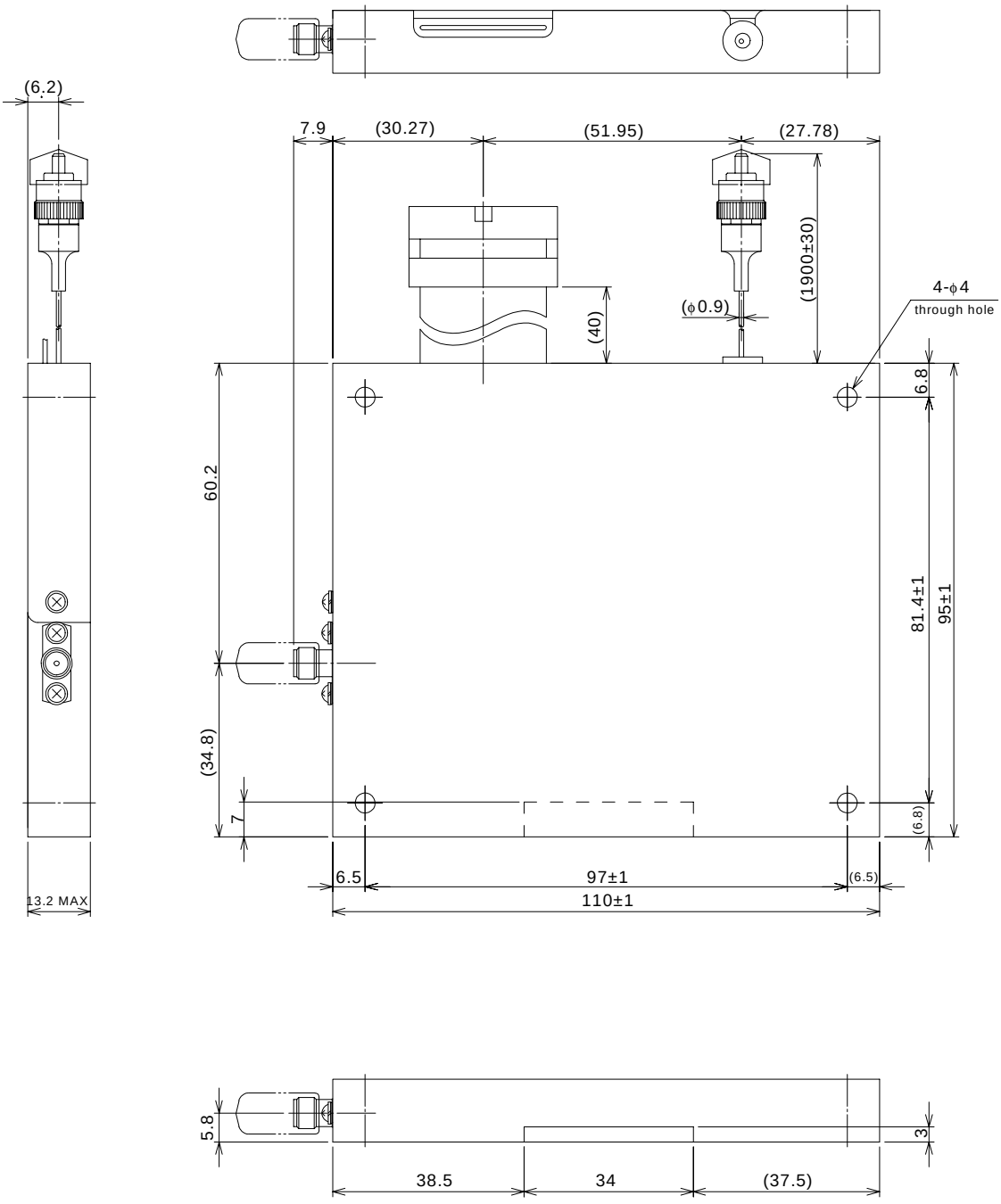
Parameter	Description
RF Connector	SMA Connector
Fiber	Standard single-mode fiber
Optical Connector	FC/SPC Connector

BLOCK DIAGRAM



OUTLINE DIAGRAM

Dimension: mm

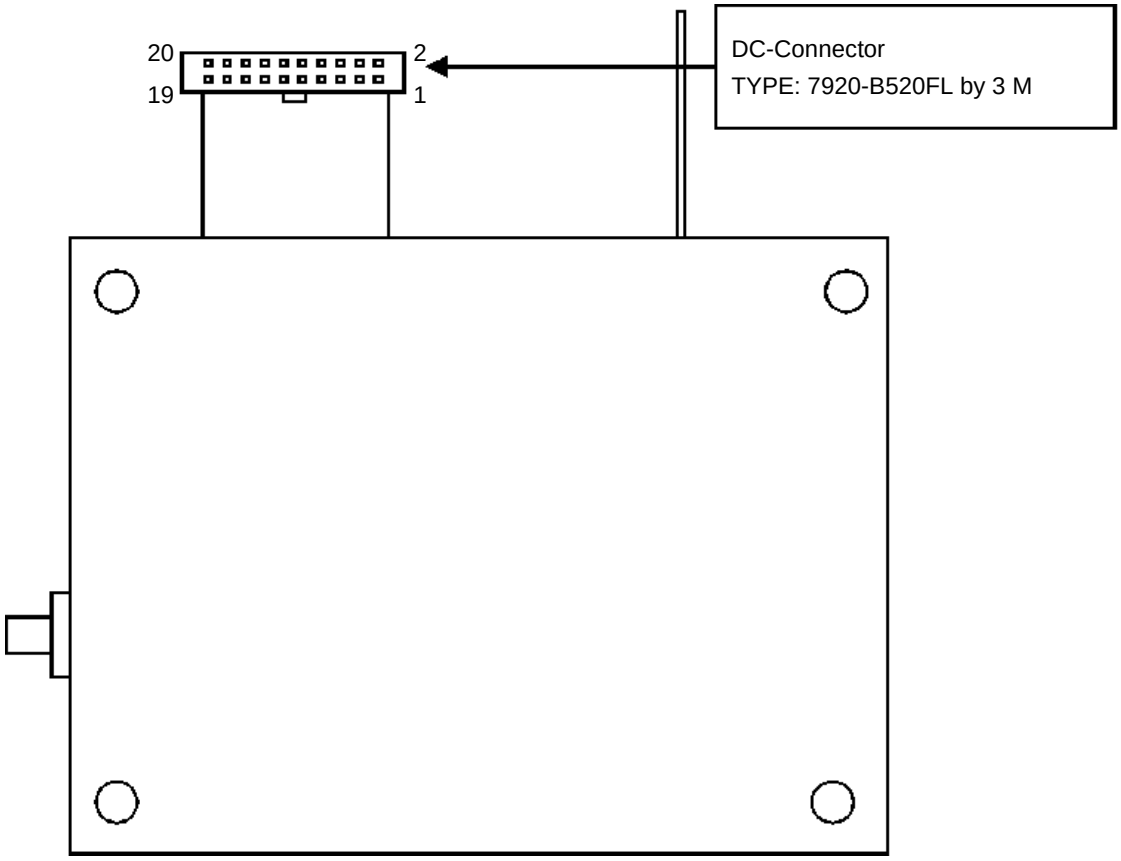


(Top view)

PIN DESCRIPTIONS

Pin-No.	Symbol	Description	Pin-No.	Symbol	Description
1	Vee	–5.2 V	11	Vcc	+3.3 V
2	Vee	–5.2 V	12	GND	Ground.
3	NC	No contact (no used)	13	NC	No contact (no used)
4	NC	No contact (no used)	14	NC	No contact (no used)
5	GND	Ground.	15	GND	Ground.
6	LFA	Laser Output Alarm	16	GND	Ground.
7	GND	Ground	17	T-MON	Laser Temperature Monitor
8	LBM	Laser Bias Alarm	18	NC	No contact (no used)
9	Vcc	+3.3 V	19	T-ALM	Laser Temperature Alarm
10	LSC	Laser ON/OFF Control	20	NC	No contact (no used)

BLOCK DIAGRAM



(Top view)

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