

## Product Overview

### 1 × 9 CWDM Optical Transceiver

#### Features

- Duplex connector ,1×9 pin package and plastic package
- +5V/+3.3V Signal power supply, PECL interface logic level
- Uncooled MQW DFB-LD
- Operating Temperature from 0°C to +70°C
- Complies with Telcordia GR-468-CORE



#### Application

- CWDM

#### Performance Specifications

**Table1. Absolute Maximum Ratings**

Parameter	Symbol	Min	Max	Unit	
Storage Temperature	Tst	-40	+85	°C	
Input Voltage	Vin	GND	Vcc	V	
Power Supply Voltage	Vcc-Vee	SCTR***1-*5	0	+6	V
		SCTR***1-*3	0	+3.6	V
Lead Soldering Temperature/Time	-	-	240/10	°C/S	

Note: Stress in excess of maximum absolute ratings can cause permanent damage to the module

**Table2. Operating Environment**

Parameter	Symbol	Min	Max	Unit	
Power Supply Voltage	Vcc	SCTR***1-*5	+4.75	+5.25	V
		SCTR***1-*3	+3.1	+3.5	V
Ambient Operating Temperature	Top	0	+70	°C	

**Table 3. Optical and Electrical Characteristics**

(T=25°C, Vcc=+4.85~+5.25V, Input PECL single)

Parameter	Symbol	Min	Typ	Max	Unit	Note
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		Transmitter				
Center Wavelength	$\lambda_p$	SCTR47*1	1467	1470	1473	
		SCTR49*1	1487	1490	1493	
		SCTR51*1	1507	1510	1513	
		SCTR53*1	1527	1530	1533	nm
		SCTR55*1	1547	1550	1553	
		SCTR57*1	1567	1570	1573	
		SCTR59*1	1587	1590	1593	
		SCTR61*1	1607	1610	1613	
Spectral Width		$\Delta\lambda$	-	-	1	nm
Average Optical Output Power	Po	SCTR**31	-5.0	-3.0	0	
		SCTR**41	-3.0	-1.0	2	dBm
		SCTR**51				
Extinction Ratio		Er	10	-	-	dB
Optical Rise/Fall Time	Tr/Tf		-	-	0.4	ns
Side Mode Suppression Ratio		SMSR	30	-	-	dB
Power Supply Current	Icc		-	70	180	mA 1
Output Eye	Compliant with Bellcore TR-NWT-000253 ITU recommendation G.957					
Data InputS	PECL					

		Receiver				
Parameter	Symbol	Min	Typ	Max	Unit	Note
Operate wavelength	-	1280	-	1630	nm	
Sensitivity	Pr	SCTR**31	-	-38	-36	
		SCTR**41	-	-31	-28	dBm 2
		SCTR**51	-	-25	-23	
Maximum input power	Ps	-3	-	-	dBm 2	
Signal Detect Assert Level	Pa(SD L-H)	SCTR**31	-50	-	-	
		SCTR**41	-40	-	-	dBm
		SCTR**51	-35	-	-	Low-level:
Signal Detect Deassert Level	Pd(SD H-L)	SCTR**31	-	-	-36	
		SCTR**41	-	-	-28	dBm Alarm
		SCTR**51	-	-	-23	
Signal Detect Hysteresis		-	3	-	dB	
Operating Current	Icc	-	80	100	mA 1	
Data Outputs	PECL					
Alarm Output	PECL/TTL					

**PECL Input Pins SD, TD+ and TD-**

Parameter	Symbol	Min	Typ	Max	Unit	Note
Input HIGH voltage	V <sub>IH</sub>	VCC - 1165	-	VCC - 880	mV	3
Input LOW voltage	V <sub>IL</sub>	VCC - 1810	-	VCC - 1475	mV	3

## PECL Output Pins SD, RD+ and RD-

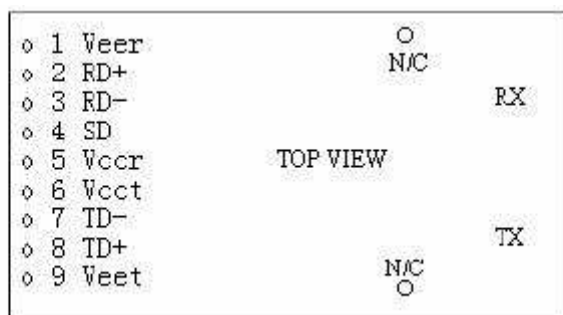
Parameter	Symbol	Min	Typ	Max	Unit	Note
LOW-level output voltage	V <sub>OL</sub>	VCC - 1840	-	VCC - 1600	mV	3
HIGH-level output voltage	V <sub>OH</sub>	VCC - 1100	-	VCC - 900	mV	3

### Note :

- The current excludes the output load current.**
- Minimum Sensitivity and saturation levels for a  $2^{23}-1$  PRBS with 72 ones and 72 zeros inserted (ITU G958)**
- RL=50R connected to a level of Vcc -2V.**

## Pin Definitions

### Pin Diagram



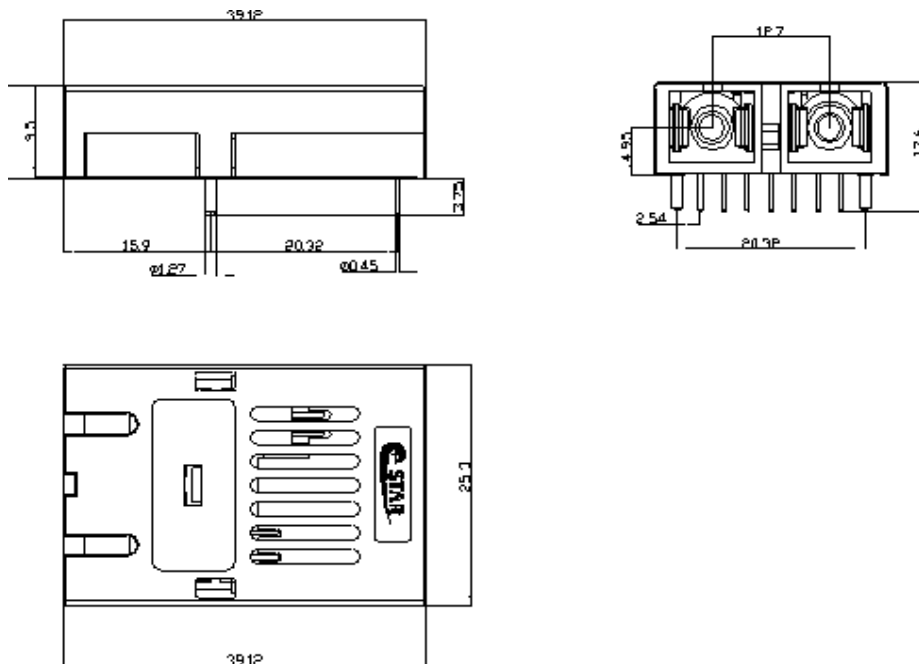
## Pin Description

Pin#	Pin Name	Logic Level	Description
N/C	Mounting Studs	-	The two pins are not connected to the transceiver internal circuit.
1	VEER RX Ground	N/C	Directly connect this pin to receiver signal ground plane.
2	RD+ RX Output Data	PECL	
3	RD- RX Output Inverted Data	PECL	
4	SD RX Signal Detect	PECL	Normal Operation: Logic "1" output, represents that optical is present at receiver input.  Fault Condition: Logic "0" output
5	VCCR RX Power Supply	N/C	Provide +5V/+3.3V DC through the recommended power supply filter circuit. Place the filter circuit as close as possible to the VCCR pin.
6	VCCT TX Power Supply	N/C	Provide +5V/+3.3V DC through the recommended power supply filter circuit. Place the filter circuit as close as possible to the VCCT pin
7	TD- TX Invert Data Input	PECL	-
8	TD+ TX Data Input	PECL	-

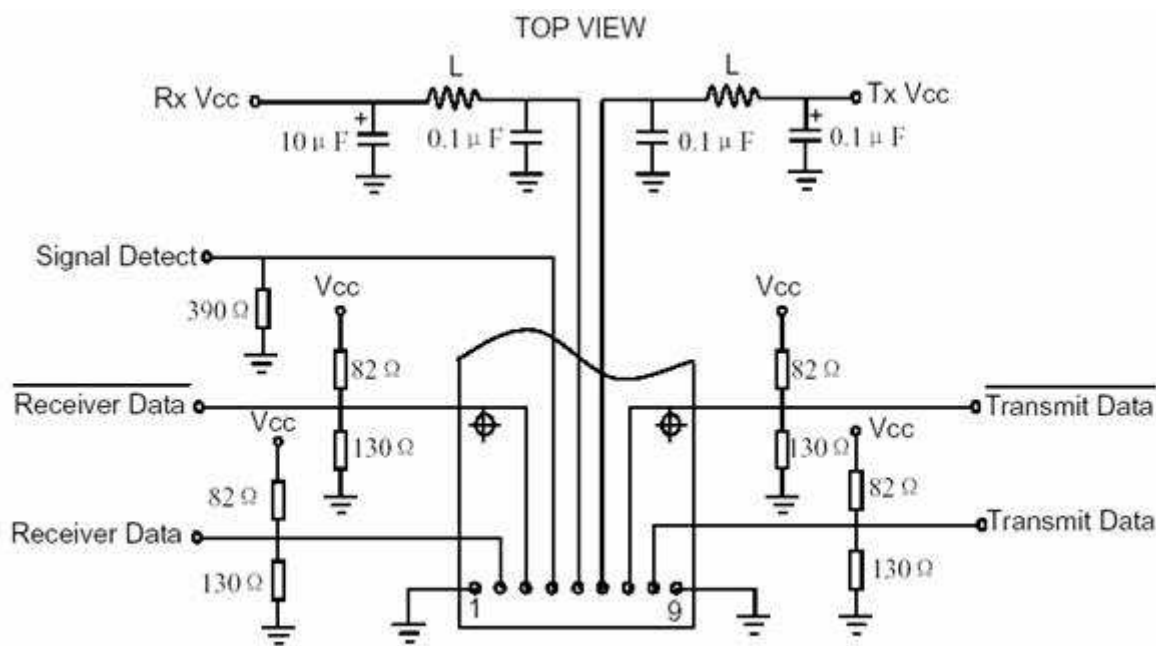
9 VEET TX Ground

N/C Directly connect this pin to transmitter signal ground plane.

### Package Information



### Recommended Circuit



### Ordering Information

SCTR    **1** -   -    **P**

Wavelength (nm)	Data Rate	Package Type	Output power	Operation Voltage	Operation Temperature	Data/ Alarm	Connector Pigtail
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(Mb/s)		Interface					
47: 1470	3: 1:	See figure3	3:	1:	1:	1:	
49: 1490	155 1*9		3.3V	0~70℃	Data/PECL Alarm/PECL	FC/PC	
51: 1510	4:		5:	2:	2:	2:	FC/APC
53: 1530	622		5V	-45~+85℃	Data/PECL Alarm /TTL		
55: 1550	5:					3:	
57: 570	1250						SC/PC
59: 1590							4: SC/APC
61: 1610							6: ST

**Figure 3**

Code Power range Specification	1	2	3	4	Unit
	SSTR**3*	-15~-8	-5~0	-	0~+5
SSTR**4*	-15~-8	-3~+2	-	0~+5	
SSTR**5*	-10~-3	-3~+2	0~+5	-	

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