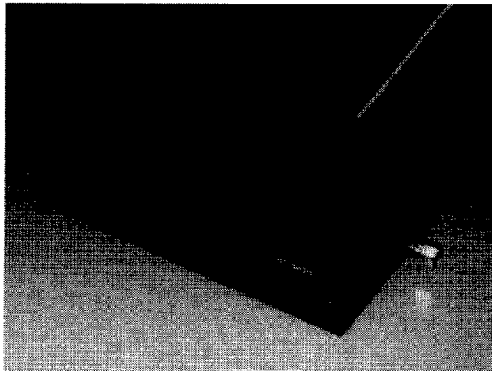


Description

The TRM7934AN is a lightwave transmitter for OC-48.

Features

- Complied with SONET/SDH standard
- MQW-DFB laser diode
- Operation from 52Mb/s to 2488.32Mb/s at 1.55 μm wavelength
- 50 Ω , AC-coupled interface
- Low-power-alarm and performance monitors



Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$)

Item	Symbol	Rated Value	Units
Operating case temperature	T_{opr}	0 to 65	$^\circ\text{C}$
Storage case temperature	T_{stg}	-20 to 75	$^\circ\text{C}$
Humidity (long-term)	—	55 to 90	%
Lead soldering temperature	T_s	250	$^\circ\text{C}$
Lead soldering time	—	10	sec

Optical Characteristics ($T_C = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Units	Test Conditions
Average power output	P_O	-4.0	-2.0	1.0	dBm	$T_C = 0$ to 65°C
Center wavelength	λ_c	1480	1550	1580	nm	2.5Gb/s, $T_C = 0$ to 65°C
Spectral width	$\Delta\lambda$ (-20dB)	—	—	1	nm	20 dB down
Side-mode suppression Ratio	S_r	30	—	—	dB	
Extinction ratio	—	10	—	—	dB	P_{OH} / P_{OL}
Optical Waveform	—	Satisfying the Mask			—	CCITT G.957
Optical path penalty	—	—	—	1	dB	max. 400 ps/nm (1.55 μm) at 4% optical reflection

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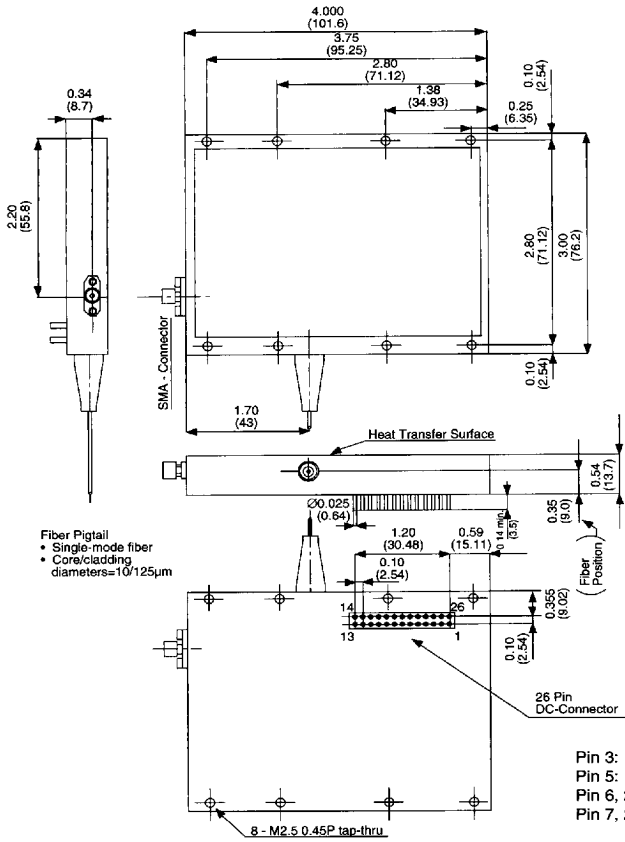
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Electrical Characteristics (T_C = 25°C)

Item	Symbol	Min	Typ	Max	Units	Test Conditions
DC power supply voltage	V _{CC}	4.75	5.0	5.25	V	
	V _{EE1}	-4.95	-5.2	-5.45		
	V _{EE2}	-1.9	-2.0	-2.1		
DC power supply current	I _{CC}	—	—	700	mA	V _{CC} = 5.0 V ±5%
	I _{EE1}	—	—	250		V _{EE1} = -5.2 V ±5%
	I _{EE2}	—	—	1000		V _{EE2} = -2.0 V ±5%
Input data voltage	V _{IN}	0.8	—	1.0	V _{pp}	
Input transition time	T _{IN}	—	—	T/4	ns	10 to 90% (50% duty cycle) T: bit-period

Outline Drawings and Pin Descriptions



Tolerance: ±0.0075 in. (±0.20 mm)
Dimension: inch (mm)

Pin	Description
1:	GND
2:	GND
3:	Wavelength logic output
4:	GND
5:	Shut-down logic input
6:	Normalized backface monitor
7:	Temperature monitor
8:	V _{CC} = +5.0V
9:	V _{EE1} = -5.2V
10:	V _{EE2} = -2.0V
11:	V _{EE2} = -2.0V
12:	GND
13:	GND
14:	GND
15:	GND
16:	V _{EE2} = -2.0V
17:	V _{EE2} = -2.0V
18:	V _{EE1} = -5.2V
19:	V _{CC} = +5.0V
20:	-5.2V temp. mon. reference
21:	GND
22:	Normalized bias monitor
23:	GND
24:	Alarm output
25:	GND
26:	GND

* Metal case is at GND.

Pin 3: Open for 1.3 µm, short to GND for 1.5 µm
Pin 5: C-MOS level logic "1" input disables transmitter
Pin 6, 22: Output normalized to 0.5V
Pin 7, 20: Laser temperature monitor: T_{LD} (K)
T_{LD} (K) = 100 × (V_{pin7} (V) - V_{pin20} (V))
Pin 24: C-MOS level logic "1" output for 3 dB optical power drop

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