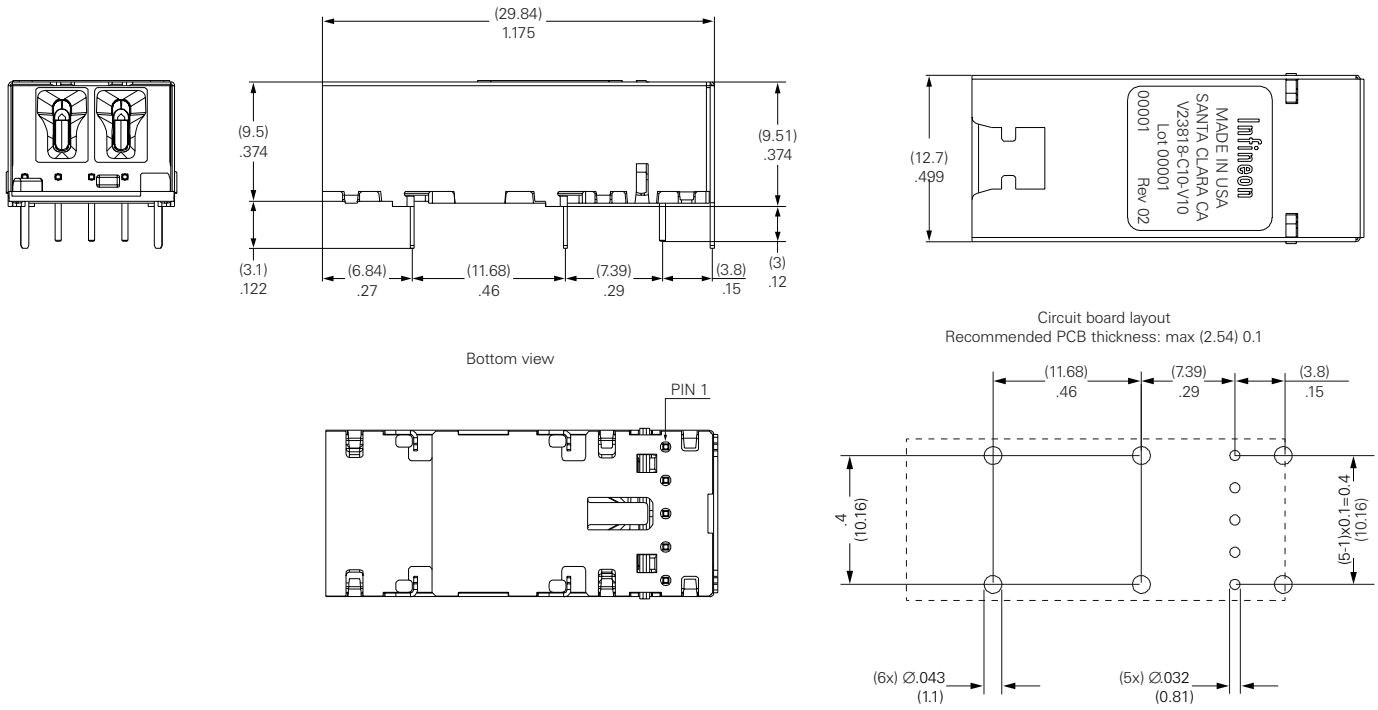
V23818-C10-V10

Small Form Factor Multimode 850 nm LED Ethernet/10BASE-FL/4M-16M Token Ring 1x5 Transceiver with VF-45™ Connector

Dimensions in (mm) inches



FEATURES

- **Small Form Factor transceiver unit for RJ-45 style VF-45 connector system**
- **Designed for use in volition cabling systems**
- **10BASE-FL / 4M-16M Token Ring**
- **System optimized for 62.5 µm graded index fiber**
- **Small footprint for high channel density**
- **UL-94 V-0 certified**
- **ESD Class 2 per MIL-STD 883 Method 3015**
- **Compliant with FCC (Class B) and EN 55022**
- **For distances of up to 2 km**

APPLICATIONS

- **Fiber-to-the-desktop**
- **Ethernet 10BASE-FL / 4M-16M Token Ring**
- **Ethernet switches/bridges/routers**
- **Local area networks**
- **Computer links**
- **Switching systems**

Absolute Maximum Ratings

Exceeding any one of these values may destroy the device immediately.

Supply Voltage (V_{CC}–V_{EE}) ..... –0.5 V to 6 V
Data Input Levels (PECL) (V_{IN}) ..... V_{EE}–V_{CC}
Operating Ambient Temperature (T_{AMB}) ..... 0°C to 70°C
Storage Ambient Temperature T_{STG} ..... –40°C to 85°C
Humidity/Temperature Test Condition (RH) ..... 85%/85°C
Soldering Conditions, Temp/Time (T_{SOLD}/t_{SOLD})
(MIL-STD 883C, Method 2003) ..... 260°C/10 s
ESD Resistance (all pins to V_{EE}, human body) ..... 1.5 kV

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DESCRIPTION

The Siemens Ethernet transceiver is part of Siemens Small Form Factor transceiver family. It is fully compliant with the 10BASE-FL / 4M-16M Token Ring standards.

This transceiver supports the innovative Volition connectorization concept, which competes with UTP/CAT 5 solutions. It is compatible with RJ-45 style backpanels for fiber-to-the-desktop applications while providing the advantages of fiber optic technology. The receptacle accepts the new VF-45 connector.

Ethernet 10BASE-FL is based on the proven effectiveness of millions of installed Ethernet systems.

This transceiver is completely interoperable with existing SW solutions for Ethernet and Token Ring.

TECHNICAL DATA

The electro-optical characteristics described in the following tables are valid only for use under the recommended operating conditions.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units
Ambient Temperature	T_{AMB}	0		70	°C
Power Supply Voltage	V_{CC}–V_{EE}	5.0		5.5	V
Transmitter					
Forward Voltage I_f = 60 mA	V_F	1.48	1.70	2.09	V
Reversed Input Voltage I_R = 10 µA	V_{BR}	1.8	3.8		
Input Data Rise/Fall Time, 20%-80%	t_R, t_F	0.4		1.3	ns
Receiver					
Power Supply Current R_{LOAD} = 0	I_{CC}		9	15	mA
Output Current	I_O			25	mA

Transmitter Electro-Optical Characteristics

Transmitter	Symbol	Min.	Typ.	Max.	Units
Data Rate	DR			50	MBaud
Launched Power (Average) into 62.5 µm Fiber[1, 2]	P_O	-17.5	-14.0	-12.5	dBm
Center Wavelength[3]	λ_C	810	850	885	nm
Output Rise/Fall Time [4]	t_R, t_F		4.0	4.5	ns

Notes

1. I_F = 32 mA Peak, 50% duty cycle. Maximum degradation at end of life = 2dB.
2. Input data pattern is a 12.5 MHz square wave signal.
3. I_F = 60 mA dc.
4. 10%-90%, I_F = 60 mA Peak, No Prebias

Receiver Electro-Optical Characteristics

Receiver	Symbol	Min.	Typ.	Max.	Units
Data Rate	DR	2		50	MBaud
Responsitivity @ 25°C[1, 2]	R	5.3	7.0	9.6	mV/µW
Input Power (Average) @ 25°C[1, 3]	P_{IN}	-34 0.4		-10.6 87.5	dBm µW
Output Data Rise/Fall Time, 20%–80%[1, 4]	t_R, t_F		3.6	4.5	ns
Pulse Width Distortion[1, 4]	PWD		0.2	1.5	

Notes

1. f = 10 MHz, 50% duty cycle, λ = 850 nm
2. 62.5 µm core fiber, P_{IN} = 100 µW peak
3. PWD = 2.5 ns
4. P_{IN} = 63 µW avg.

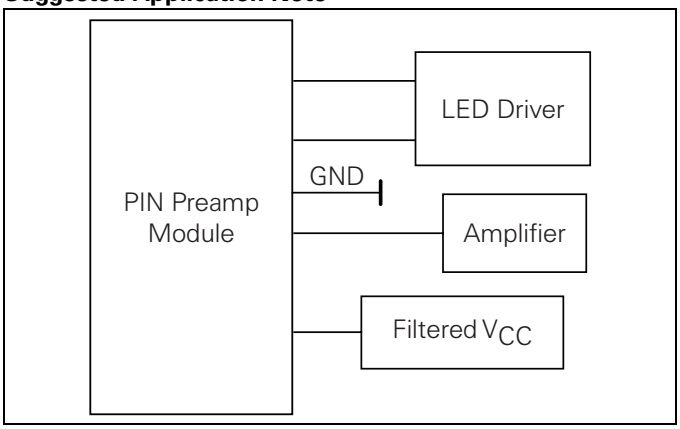
Regulatory Compliance

Feature	Standard	Comments
Electromagnetic Interference (EMI)	FCC Class B EN 55022 Class B CISPR 22	Noise frequency range:30 MHz to 1 GHz
Immunity: Electrostatic Discharge	EN 61000-4-2 IEC 1000-4-2	Discharges of ± 15kV with an air discharge probe on the receptacle cause no damage.
Immunity: Radio Frequency Electromagnetic Field	EN 61000-4-3 IEC 1000-4-3	With a field strength of 10 V/m rms, noise frequency ranges from 10 MHz to 1 GHz
Eye Safety	IEC 825-1	Class 1

Pin Description

Pin Name		Pin#	Description
RD	Rx Output Data	1	Receiver output data
GND	GROUND	2	
R_xV_{CC}	Rx 5 V	3	Positive power supply, 5 V
Cat.	LED Cathode	4	LED Cathode
An	LED Anode	5	LED Anode

Suggested Application Note



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