agere

Data Sheet May 2001

5833P Diplexer, Full-Duplex, Bidirectional, Single-Fiber, Data and Voice Transceivers



Features

- Single-fiber connection
- Low cost
- 3.3 V PECL interface
- SFF footprint (2 x 5 pinout)

Applications

- Single-fiber data and voice transport
- FTTx architectures
- Site-to-site optical telemetry
- Customer premise gateways

Description

The 5833P diplexer is a single-fiber transceiver that enables simultaneous bidirectional, voice and data transport over a single optical fiber in FTTx (access) networks.

The diplexer consists of a Fabry-Perot laser and a PIN photodiode coupled to a PECL interface for easy installation.

These low-cost devices can be used in a variety of locations in the network where single-fiber telemetry is required. The laser emits at 1310 nm and the photodetector receives another 1310 nm signal.

The 5833P diplexer is currently available at OC-3 (155 Mbit/s) and OC-12 (622 Mbits/s) data rates and with several optical connector options.

Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Тур	Max	Unit
Operating Temperature Range	Тор	-40	25	85	°C
Storage Temperature Range	Tstg	-40	25	85	٥C
Supply Voltage: Vcc (Tx/Rx)	Vcc		3.3	3.6	V
Optical Return Loss (APC Pigtail Connector)	RL			-45	dB

Characteristics

Table 1. Transmitter Specifications

Parameter	Condition	Min	Тур	Мах	Units
Wavelength	CW	1260	1310	1360	nm
Dynamic Extinction Ratio	—	8.2			dB
Output Power	—	-15	-12.5	-10	dBm
Input Data Voltage: Low High	_	Vcc – 2.1 Vcc – 1.2	_	Vcc – 1.4 Vcc – 0.5	V V
Transmit Disable	TTL Low		_	0.8	V
Enable Delay Time	Open Loop		250	_	ns
Bit Rate: 5833P-0155 5833P-0622	_	_	155 622	_	Mbits/s Mbits/s
Supply Current: -40 °C 25 °C 85 °C	Exclude Input Bias Network		100 105 130		mA mA mA

Characteristics (continued)

Table 2. Receiver Characteristics (Integrated TIA with AGC)

Parameter	Condition	Min	Тур	Max	Units
Wavelength	CW	1260	1310	1360	nm
Output Data Voltage: Low High	_	Vcc – 1.8 Vcc – 1.0		Vcc – 1.6 Vcc – 0.9	V V
Signal-Detect Output Voltage: Low High	_	 Vcc – 1.2	_	Vcc – 1.5 —	V V
Signal-Detect Switching Threshold: Decreasing Light Increasing Light	_		-39 -36.75		dBm dBm
Level-Detect Hysteresis (Optional)	—	1.75	2.25	2.75	dB
Sensitivity: Full Duplex: 9833P-0155 9833P-0622	BER = 10 ⁻¹⁰			-30 -26	dBm dBm
Supply Current	No ECL loads	_	40	60	mA

Pin Information

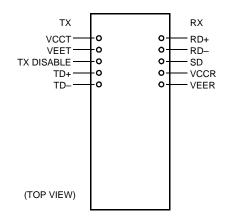
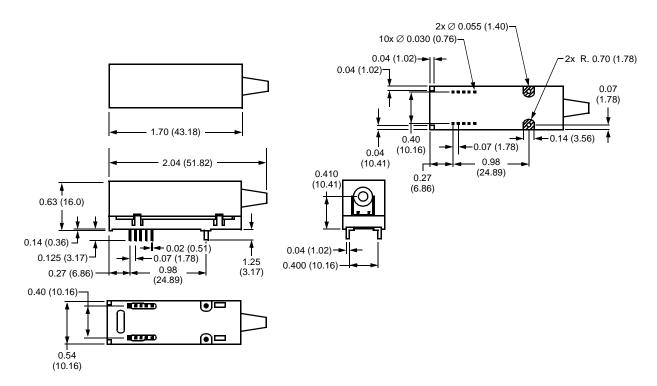


Figure 1. 5833-Type Transceiver Pinout^(F)

Outline Diagram

Dimensions are in inches and (millimeters)



Note: Single-fiber transceivers provided by Agere Systems Inc. are pigtailed with SMF-28* and connector options.

Laser Safety Information

Class I Laser Product

All versions of the 5833P-type transceivers are classified as Class I laser products per FDA/CDRH, 21 CFR 1040 Laser Safety requirements. The transceivers are classified with the FDA under accession number to be determined. All versions are Class I laser products per IEC^* 60825-1:1993.

CAUTION: Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.

This product complies with 21 CFR 1040.10 and 1040.11. *SMF-28* 900 μ m fiber pigtail with connector options. Wavelength = 1.3 μ m Maximum power = 0.1 mW Product is not shipped with power supply. Because of size constraints, laser safety labeling is not affixed to the module but is attached to the outside of the shipping carton.

NOTICE

Unterminated optical connectors can emit laser radiation.

Do not view with optical instruments.

^{*} *IEC* is a registered trademark of The International Electrotechnical Commission.

Ordering Information

For ordering information, please contact an account manager at OPTO West, Agere Systems INC., 1-800-362-3891 (for sales staff, please press option 2).

For additional in	nformation, contact your Agere Systems Account Manager or the following:
INTERNET:	http://www.agere.com
E-MAIL:	docmaster@micro.lucent.com
N. AMERICA:	Agere Systems Inc., 555 Union Boulevard, Room 30L-15P-BA, Allentown, PA 18109-3286
	1-800-372-2447, FAX 610-712-4106 (In CANADA: 1-800-553-2448, FAX 610-712-4106)
ASIA PACIFIC:	Agere Systems Singapore Pte. Ltd., 77 Science Park Drive, #03-18 Cintech III, Singapore 118256
	Tel. (65) 778 8833, FAX (65) 777 7495
CHINA:	Agere Systems (Shanghai) Co., Ltd., 33/F Jin Mao Tower, 88 Century Boulevard Pudong, Shanghai 200121 PRC
	Tel. (86) 21 50471212, FAX (86) 21 50472266
JAPAN:	Agere Systems Japan Ltd., 7-18, Higashi-Gotanda 2-chome, Shinagawa-ku, Tokyo 141, Japan
	Tel. (81) 3 5421 1600, FAX (81) 3 5421 1700
EUROPE:	Data Requests: DATALINE: Tel. (44) 7000 582 368, FAX (44) 1189 328 148
	Technical Inquiries: OPTOELECTRONICS MARKETING: (44) 1344 865 900 (Ascot UK)

Agere Systems Inc. reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

 $\begin{array}{l} \mbox{Copyright} @ \mbox{2001 Agere Systems Inc.} \\ \mbox{All Rights Reserved} \end{array}$

