Preliminary Data Sheet, Rev. 2
July 2001

5200-Series 64 x 64 MEMS Optical Switch Module



Representing next-generation passive technology, the 5200-Series 64 x 64 microlectromechanical systems (MEMS) optical switch is compact, economical, and can be easily incorporated into a system.

Features

- MEMS 3D architecture
- Small form factor
- Low loss
- Low power dissipation
- Nonblocking
- Scalable
- Protocol and bandwidth independent
- Data rate transparency
- Integrated control electronics

Applications

- Optical cross connects
- Optical add/drop multiplexer
- Dynamic capacity provisioning
- Test equipment

Description

The fully-integrated 5200-Series 64 x 64 MEMS-based optical switch component for optical networking systems features scalable, 3D MEMS architecture. It offers 64 input and 64 output ports in a small form factor, and contains the control and feedback electronics needed to be easily incorporated into a system.

The 64 x 64 MEMS optical switch module utilizes moving micromirrors capable of manipulating light, eliminating the need for OEO conversions, and resulting in bit-rate and protocol independence.

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	Max	Unit
Operating Temperature Range	T_C	–5	70	°C
dc Power Supplies	—	—	5, ±15	V
Input Power	P_{IN}	—	15	dBm

Electrical/Optical Characteristics

Table 1. Electrical/Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Insertion Loss	L_{INS}	—	—	6	dB
Wavelength Range: C-Band L-Band 1.3 µm	λ 	 1528 1565 1280	 — — —	 1562 1607 1320	 nm nm nm
Polarization-dependent Loss	PDL	—	—	0.2	dB
Optical Return Loss	ORL	30	—	—	dB
Isolation	ISO	50	—	—	dB
Polarization-mode Dispersion	PMD	—	—	0.1	ps
Mirror Switching Time	I_{TH}	—	20	—	ms
Power Dissipation	P_{DISS}	—	15	—	W
Optical Connectors	—	MTP			—
Electrical Connector	—	68-Pin SCSI-Type			—

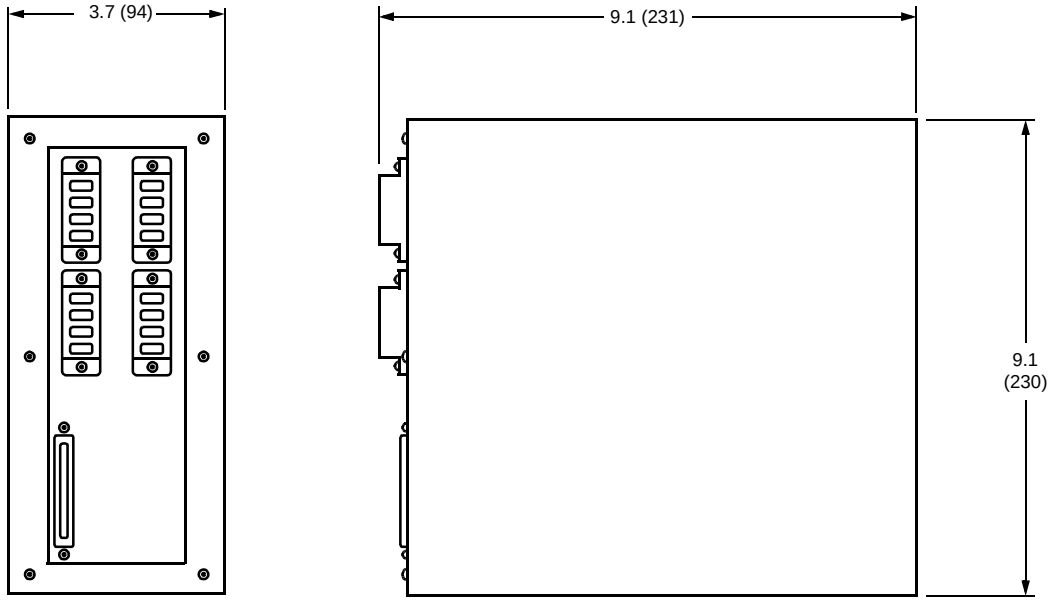
Pin Information

Table 2. Pin Descriptions

Pin No.	Pin Function	Pin No.	Pin Function	Pin No.	Pin Function	Pin No.	Pin Function
1	5 V	18	Out 4	35	GND	52	Out 12
2	5 V	19	Out 5	36	GND	53	Out 13
3	5 V	20	Out 6	37	GND	54	Out 14
4	5 V	21	Out 7	38	GND	55	Out 15
5	5 V	22	–15 V	39	GND	56	GND
6	In 0	23	–15 V	40	In 8	57	GND
7	In 1	24	GND	41	In 9	58	—
8	In 2	25	RxD–	42	In 10	59	—
9	In 3	26	RxD+	43	In 11	60	—
10	In 4	27	GND	44	In 12	61	Output Disable
11	In 5	28	TxD–	45	In 13	62	Alarm1
12	In 6	29	TxD+	46	In 14	63	Alarm 2
13	In 7	30	GND	47	In 15	64	RS-232 Transmit
14	Out 0	31	Clock	48	Out 8	65	GND
15	Out 1	32	Status	49	Out 9	66	RS-232 Receive
16	Out 2	33	15 V	50	Out 10	67	GND
17	Out 3	34	15 V	51	Out 11	68	GND

Outline Diagram

Dimensions are in inches and (millimeters).



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