

DATA SHEET

Optical Converter

M5-2000

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Optical Converter

1. General Specifications

	Parameter	Specifications
Optical	Output signal	850nm Multi-mode (Min -10.5dBm)
Electrical	Input signal	TMDS Level (complying with DVI1.0)
	Supported resolution (Graphic Data)	Max. 1.08Gbps(SXGA)
Connect	Optical connector	1 Duplex LC connectors
	Electric Connector Type from Modules and to Displays	24 pin DVI-D plug
	DC Power Jack	2.0 ϕ DC Adapter Jack
	Recommended Fiber	62.5/125 or 50/125 um Multi-mode Glass Fiber

2. Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	T _{stg}	- 30	+ 70	°C
Supply Voltage	V _{CC}	8	16	V
Input signal	V _d	-	1	V
Humidity	RH	10	85	%

3. Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Units
Operating Temperature	T _A	-10		+50	°C
Data Output Load	R _{LD}		50		Ω
Supply Voltage	V _{CC}	+ 11.4	+ 12.0	+ 12.6	V

4. Power Consumption

($T_A = 0\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Minimum	Typical	Maximum	Units
Supply Voltage	V_{CC}	11.4	12.0	12.6	V
Operating Current	I_{CC}		0.70	0.8	A
Power Dissipation	P_{CC}		8.4	10.1	W

5. Optical & Electrical Specifications

	Parameter	Symbol	Minimum	Typical	Maximum	Units
TMDS	Data Output Load	R_{LD}		50		Ω
	Graphic Supply Voltage (Note1)	GV_{CC}	+ 3.1	+ 3.3	+ 3.5	V
	Single-Ended High Level Input Voltage	GV_{IH}	$GV_{CC} - 0.01$	GV_{CC}	$GV_{CC} + 0.01$	V
	Single-Ended Low Level Input Voltage	GV_{IL}	$GV_{CC} - 0.6$	-	$GV_{CC} - 0.4$	V
	Single-Ended Input Swing Voltage	GV_{ISWING}	0.4	-	0.6	V
Optical Link (Note2)	Output Optical Power	P_o	-9.5		-3.6	dBm
	Wavelength	λ	830	850	860	nm
	Spectral width in RMS	$\Delta\lambda$			0.85	nm
	Relative Intensity of Noise (Note3)	RIN		-117		dB/Hz
	Extinction Ratio	Ext	9			dB
	Rising/Falling Time	T_{rise}/T_{fall}			260	ps
	Jitter in p-p value (Note4)	T_{jitter}			270	ps

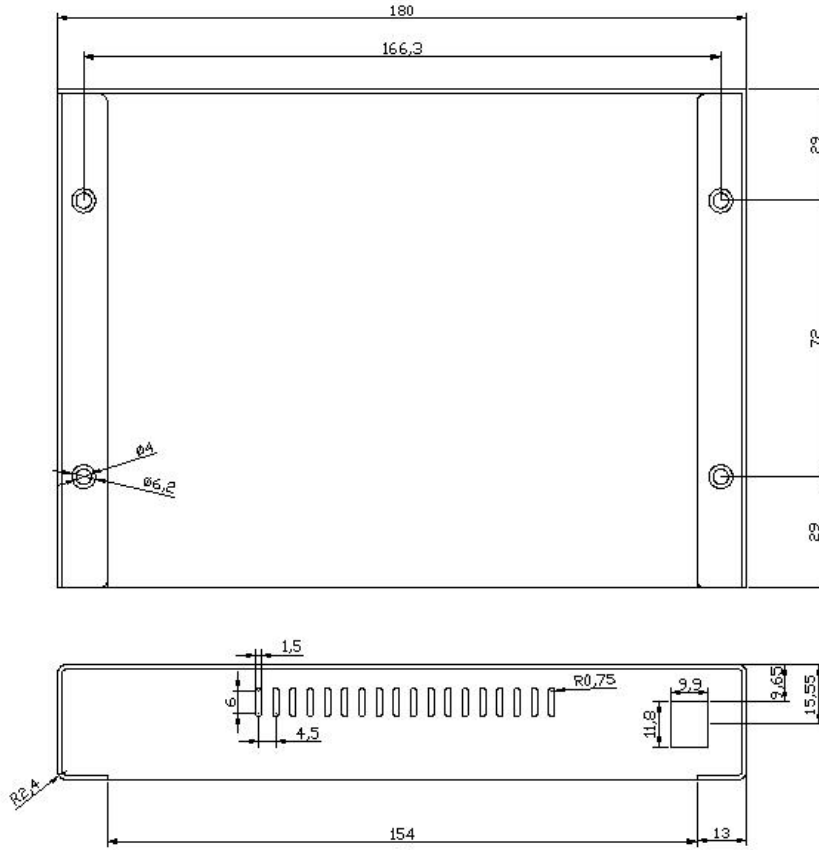
Note1. Graphic Supply Voltage is regulated reference voltage for signal processing in modules

Note2. Measure signals at the end of 2 meter 50/125um MMGOF

Note3. Measure in 1GHz of frequency bandwidth

6. Drawing of Modules

dimension[mm]



7. DVI Pin Description

Pin	Symbol	Functional Description
1	CH2-	TMDS Data Signal Channel 2 Negative
2	CH2+	TMDS Data Signal Channel 2 Positive
3	GND	TMDS Data Signal Channel 2/4 Shield
4		TMDS Data Signal Channel 4 Negative
5		TMDS Data Signal Channel 4 Positive
6	DDC Clock	DDC Clock line for DDC2B communication
7	DDC Data	DDC Data line for DDC2B communication
8	N.C.	
9	CH1-	TMDS Data Signal Channel 1 Negative
10	CH1+	TMDS Data Signal Channel 1 Positive
11	GND	TMDS Data Signal Channel 1/3 Shield
12		TMDS Data Signal Channel 3 Negative
13		TMDS Data Signal Channel 3 Positive
14	5 V	5 V Input for Transmitter from Host
		5 V Output for Monitor from Receiver
15	GND	Ground
16	Hot plug Detect	Signal is driven by monitor to enable the system to identify the presence of a monitor
17	CH0-	TMDS Data Signal Channel 0 Negative
18	CH0+	TMDS Data Signal Channel 0 Positive
19	GND	TMDS Data Signal Channel 0/5 Shield
20		TMDS Data Signal Channel 5 Negative
21		TMDS Data Signal Channel 5 Positive
22	GND	TMDS Clock Signal Shield
23	CLK+	TMDS Clock Channel Negative
24	CLK-	TMDS Clock Channel Positive

8. Reliability Test

- 1) Operating Test .
- 2) Storage Test

Temp.& Humidity Test Data

Heading	Test	Conditions	Duration	Sample Size	Failure	Remarks
Operating Test	Operating at each Temperature (See Note)	* -10 ~ 50 °C (Interval: 10 °C)	30 Min (Each Temperature)	n =2	0	Note: Evaluate display quality of Laser Beam Projector connected to Graphic Signal Generator (Quantum Data: GD-802B) at each temperature. 1. Ts: Storage Temperature 2. RH: Relative Humidity
Storage Test	Low Temperature	* T _s = -30 °C	96 HR	n=2	0	
	High Temperature	* T _s = 70 °C	96 HR	n=2	0	
	High Humidity / High Temperature	* T _s : 60 °C * RH: 90%	96 HR	n=2	0	