



Fiber Optic Data Link Series 10

DESCRIPTION

The OPTO/LINK Series 10 is a digital fiber optic data link designed to operate from DC to 100 kb/s on plastic fiber for data transmission in electronic equipment. The data link consists of a LED transmitter and a PIN photodiode receiver packaged for PC board mounting, and requires no fiber optic connectors

DATA SHEET NO. IO 012-0489

APPLICATIONS

- Instrumentation
- Robotics
- Electrical isolation
- Data transmission
- High EMI/RFI noise areas
- Medical



FEATURES

- Low cost
- Uses all plastic fiber
- No fiber optic connector required
- Small size
- PC board mountable
- High reliability
- DC to 100 kb/s capability
- TTL/STTL/LSTTL compatible receiver

ELECTRICAL AND OPTICAL SPECIFICATIONS ($T_a = 25^\circ \text{C}$, $V_{CC} = 5\text{V}$)

Fiber Optic Link

Type	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
OPTO/ LINK 10	Data rate	-	NRZ code	DC	-	100	kb/s
	Transmission distance	-	APF	0.2	-	5	m
	Propagation delay time (L $\rightarrow$ H)	t _{PLH}	APF 1m	-	12	-	μs
	Propagation delay time (H $\rightarrow$ L)	t _{PHL}	APF 1m	-	12	-	μs
	Pulse width distortion	Δtw	Pulse width 10 μs Pulse repetition 1 ms	-	3	-	μs

Light Emitting Diode

Type	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
OPTO-11	Fiber output power	P _f	I _f = 30 mA, APF 1m	-	-10	-	dBm
	Peak emission wavelength	λ_p		-	670	-	nm

Fiber Optic Receiving Module

Type	Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
OPTO-12	Maximum receivable power	P _{MAX}	APF, 100 kb/s, BER = 10^{-9}	-	-7	-	dBm
	Minimum receivable power	P _{MIN}	peak value	-	-20	-	dBm
	High level output voltage	V _{OH}	I _{OH} = 100 μA	2.7	-	-	V
	Low level output voltage	V _{OL}	I _{OL} = 16 mA	-	-	0.4	V
	Current consumption	I _{cc}		-	25	-	mA

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ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ \text{C}$)**Light Emitting Diode**

Type	Item	Symbol	Conditions	Rating	Unit
OPTO-11	Storage temperature	T_{stg}		-20 to 70	$^\circ \text{C}$
	Operating temperature	T_{opr}		-20 to 70	$^\circ \text{C}$
	Forward current	I_F		50	mA
	Reverse voltage	V_R		4	V
	Soldering temperature	T_{sol}	(1)	260	$^\circ \text{C}$

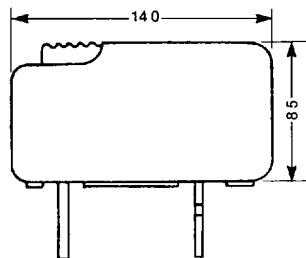
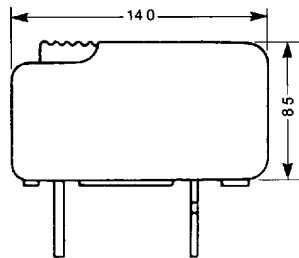
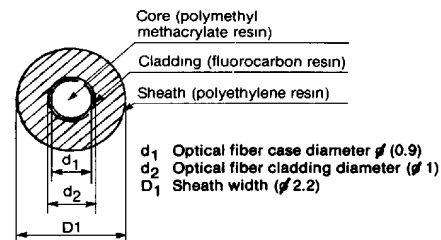
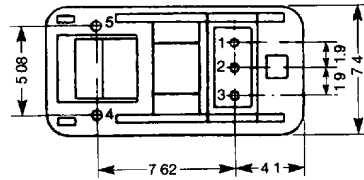
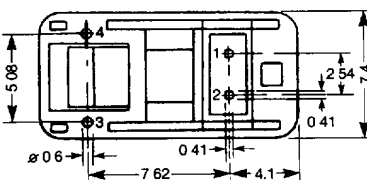
Receiving module

Type	Item	Symbol	Conditions	Rating	Unit
OPTO-12	Storage temperature	T_{stg}		-20 to 70	$^\circ \text{C}$
	Operating temperature	T_{opr}		-20 to 70	$^\circ \text{C}$
	Supply voltage	V_{cc}		16	V
	Low level output current	I_{OL}		50	mA
	Soldering temperature	T_{sol}	(1)	260	$^\circ \text{C}$

Note: (1) Soldering time ≤ 3 sec. (more than 1 mm apart from the package)

Optical Fiber

Type	Item	Symbol	Conditions	Rating	Unit
OPTO-104M	Storage temperature	T_{stg}		-40 to 70	$^\circ \text{C}$
	Operating temperature	T_{opr}		-20 to 70	$^\circ \text{C}$
	Tension	T_F		5 (50)	kgf (N)
	Bending radius	r		Min 25	mm

DIMENSIONAL OUTLINE**OPTO-11****OPTO-12****OPTO-104M****PIN CONNECTION**

Pin No.	OPTO-11	OPTO-12
1	Anode	V_{cc}
2	Cathode	Output
3	NC	GND
4	NC	Case
5	—	Case

Dimensions in millimeters

ORDERING INFORMATION

Description	Part Number
Transmitter 650 nm 100 kb/s	OPTO-11
TTL Receiver 650 nm 100 kb/s	OPTO-12
970/1000 micron all plastic fiber	OPTO-104M



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INTEROPTICS reserves the right to change these specifications as required to permit improvements in the design of its products.