OIL160-650

Optical Emitter 50 Mbps 650nm

General Description

The OIL160-650 is a red LED designed for fiber optic data communications.

The red light is commonly used for the low attenuation in plastic optical fiber.

The device has an high optical power, that can reach -1dBm.

The OIL160-650 is usually matched with OIA160 receiver and a plastic optical fiber, to create an optical link, that can be extended up to 100m. The kit has been designed to meet and exceed SERCOS 2 requirements.

Different packaging connectors are available, especially designed for plastic fibers.

Applications

Data transmission for industrial environment

Data transmission in factory and office automation

Industrial LAN and FIELD BUS

Home and Building Automation

General fiber optic transmission systems

Galvanic insulation/optocoupling

Features

- **High optical power output**
- **Datarate up to 50Mbps**
- **Plastic fiber links up to 100m**
- **Available in plastic or robust metal case**
- **RoHS and REACH compliant**

Pin Functions

See different packaging options in mechanical section

No.	Name	Function
	K	Cathode
	A	Anode

Ordering information

OIL160-650-SMA-P	Optical emitter 16Mbd 650nm in plastic sma standard package
OIL160-650-SMA-MP	Optical emitter 16Mbd 650nm in metal sma, tin plated, fixing pins
OIL160-650-SMA-M	Optical emitter 16Mbd 650nm in metal sma standard package

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min	Max	Unit
I_F	Forward current @ T_A=25°C	-	40	mA
V_R	Reverse voltage @ I_R=10uA and T_A=25°C		5	V
T_{opr}	Operating temperature	-40	85	°C
T_{stg}	Storage temperature	-40	85	°C
T_{Sol}	Lead Temperature (solder) 5s at 1mm		250	°C

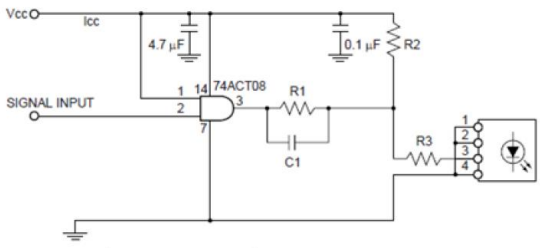
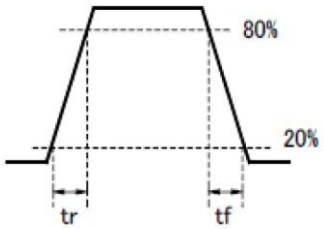
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rated conditions for extended periods may affect device reliability.

ELECTRICAL AND OPTICAL CHARACTERISTICS

T_A=25°C, plastic optical fiber 1m, I_F=20mA unless otherwise noted.

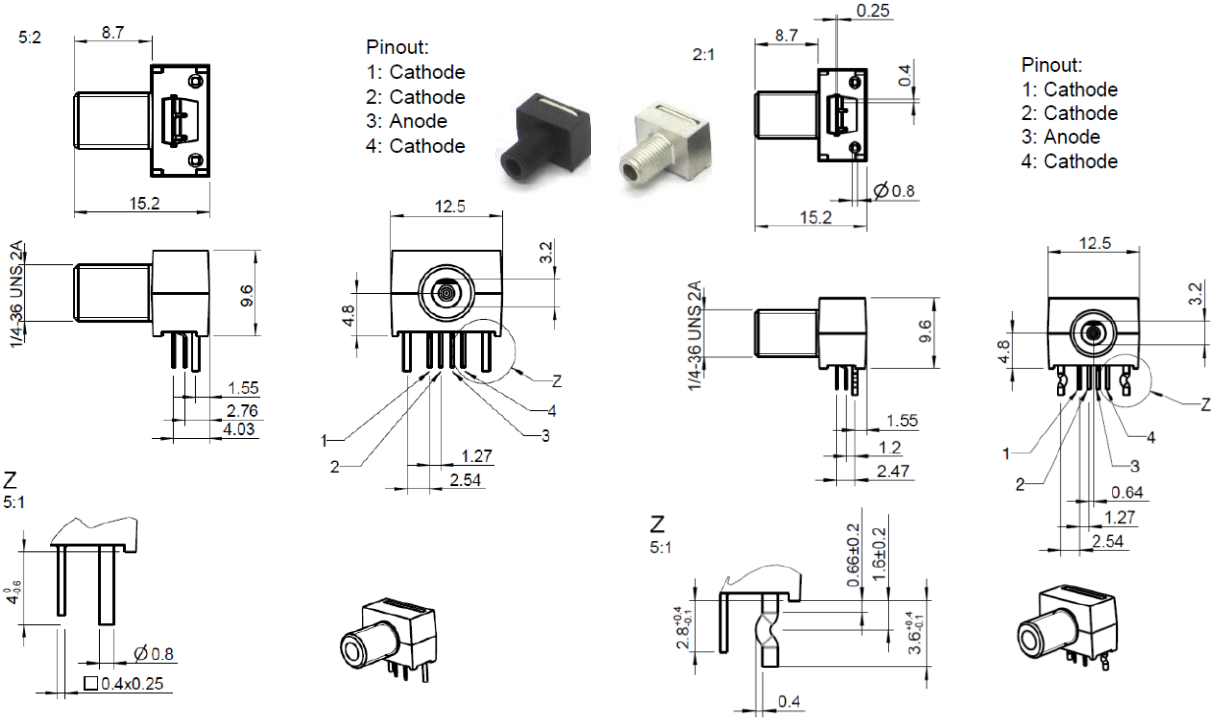
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
DR	Data rate		DC		50	Mbps
λ_p	Peak emission wavelength			650		nm
$\Delta\lambda$	Spectral half width		-	20		nm
P_f	Fiber end output[2]		-5		-1	mW
V_F	Forward voltage		-	1.9	2.3	V
I_R	Reverse current	V_R=5V	-	-	10	µA
t_R	Rise Time	See driving circuit below			8	ns
t_F	Fall Time	See driving circuit below			8	ns

TYPICAL DRIVING CIRCUIT

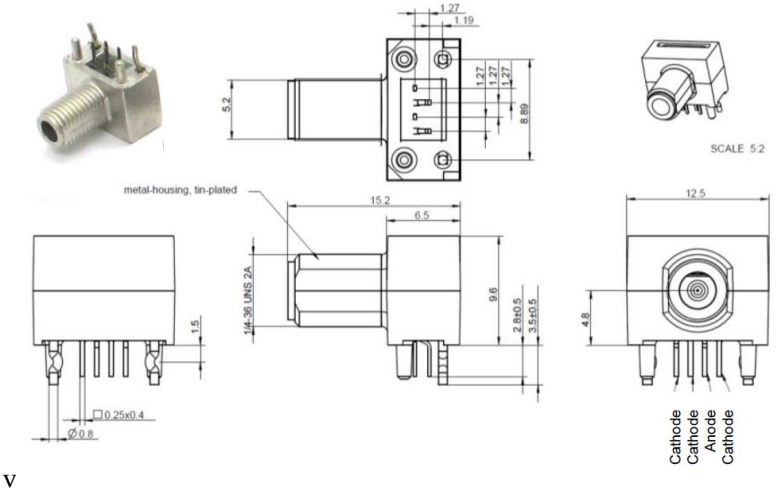
Driver circuit recommendation	*Optical waveform definition*
	

MECHANICAL DIMENSIONS

Units=mm



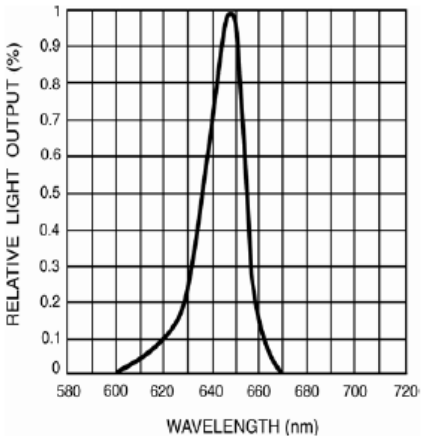
OIL160-650-SMA-P **OIL160-650-SMA-M**



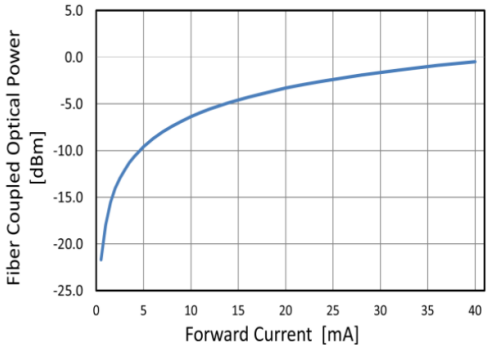
OIL160-650-SMA-MP (metal housing tin plated with soldering and fixing pins)

GRAPHS

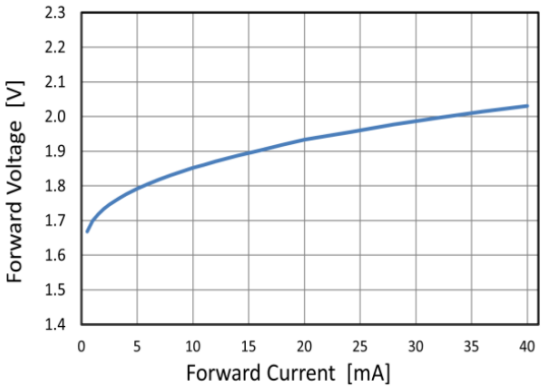
Typical Emission Spectrum
T_A = 25°C, I_F = 20mA



Optical Power
T_A = 25°C, POF-1m - ∅1mm



Forward Voltage
T_A = 25°C



Max. Forward Current