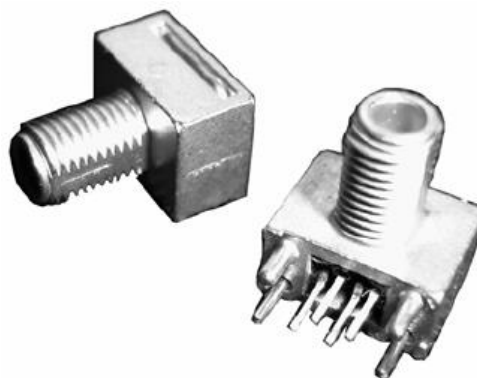


## Fiber Optic Components 125 Mbps, 650 nm LED

HFE7060-200



### DESCRIPTION

The HFE7060-200 is a 125 Mbps LED designed to meet data transmission requirements in factory or office automation. The 650 nm wavelength provides operation in the low attenuation area of POF (Plastic Optical Fiber) fibers. The metal SMA housing gives the user a cost-effective module which can be easily mounted on the PCB while also offering improved mechanical robustness and EMC protection versus plastic packages. The HFE7060-200 is designed to work with Honeywell's high speed receivers HFD7000-XXX.

### FEATURES

- Super bright LED for optical fiber Communication
- Integrated lens provides maximum coupling into plastic fibers
- High power output at 650 nm
- High speed (125 Mbps)
- High reliability
- Designed to meet SERCOS requirement

### Application

- Data transmission in factory automation and office
- High speed and short distance link

### Dimensions

Honeywell reserves the right to make changes at any time in order to improve design and supply the best products possible.

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<p><b>HFE7060-210 with plastic housing</b></p> <p>Pinout: 1: Cathode 2: Cathode 3: Anode 4: Cathode</p>	<p><b>HFE7060-210i with plastic housing</b></p> <p>Pinout: 1: Cathode 2: Cathode 3: Anode 4: Cathode</p>
<p><b>HFE7060-200 with metal housing</b></p> <p>Gehäuse aus Zinkdruckguss, verzinkt metal-housing, tin-plated</p> <p>SCALE 5:2</p> <p>Cathode Cathode Anode Cathode</p>	

### NOTICE

#### PRELIMINARY DOCUMENTATION

The information contained in this document is preliminary and for reference only. Preliminary means that the product described has not been or is currently being formally tested. Specifications are subject to change without notice. Reliance on the information contained herein is at the reader's own risk.



### WARNING

#### MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as product installation information.
  - Complete installation, operation and maintenance information is provided in the instructions supplied with each product.
- Failure to comply with these instructions could result in death or serious injury.

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## Fiber Optic Components 125 Mbps, 650 nm LED

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### Absolute maximum ratings @ Ta = 25°C

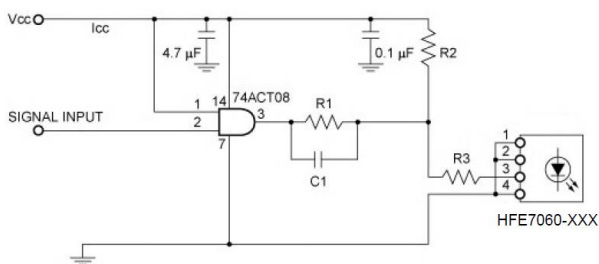
Maximum Ratings	Symbol	Rating
Forward current	$I_F$	40 mA
Reverse voltage	$V_R$	3V
Power dissipation <sup>(1)</sup>	$P_{max}$	250mW
Soldering temperature PB-free	$T_{Sold}$	250°C @ 5s at least 1,8mm away from package surface, once only
Operating temperature	$T_{opr}$	-40°C to +85°C [-40°F to +185°F]
Storage temperature	$T_{stg}$	-40°C to +85°C [-40°F to +185°F]
Storage condition	-	MSL level 3 - the LED shall be soldered 168h max after opening the sealed bag (at storage conditions of < 30°C, <60%rh)

### Electrical and Optical Characteristics @ Ta = 25°C [77°F]

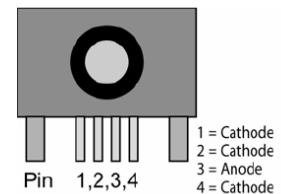
Parameters	Test Condition	Symbol	Min.	Typ.	Max.	Units
Data rate	NRZ <sup>(3)</sup>	$f_D$	DC		125	Mbps
Rise/Fall time <sup>(2)</sup>	20% - 80%	$T_{r/f}$			3,5	ns
Forward voltage	$I_F = 20\text{mA}$	$V_F$	1,8	2,0	2,5	V
Reverse current	$V_R = 3\text{V}$	$I_R$			10	$\mu\text{A}$
Peak emission wavelength	$I_F = 20\text{mA}$	$\lambda_P$		650		nm
Spectral half width	$I_F = 20\text{mA}$	$\Delta \lambda$		20		nm
Fiber coupled optical output	<sup>(5)</sup>	$P_O$	-5,5		-1,5	dBm
Pulse distortion	(2) (3) (4)	$\Delta T$	-2		0	ns
Jitter	(2) (3) (4)	$\Delta t_j$			1,5	ns

1: Power dissipation going down at a rate of 1,75mW/°C above Ta = 25°C [77°F]

2: Measured with the following recommended driver circuit:  $V_{CC} = 4.75$  to  $5.25\text{V}$ ;  $R_1 = 180\Omega$ ;  $R_2 = 470\Omega$ ;  $R_3 = 10\Omega$ ;  $C_1 = 47\text{pF}$



PINOUT



3: Input is a pseudo-random bi-phase signal at 125 Mbps (NRZ signal conversion).

4: Average value (duty ratio 50%) measured using a 1m POF-fibre ( $\varnothing 1\text{mm}$ ; NA=0.5; typical attenuation: 1.5 dBm)

5:  $I_F = 20\text{mA}$  – DC, using a 1m POF-fibre ( $\varnothing 1\text{mm}$ ; NA=0.5; typical attenuation: 1.5 dBm)

**Note:** The bypass capacitors (0.1 $\mu\text{F}$  and 4.7 $\mu\text{F}$ ) are connected between  $V_{CC}$  and GND ideally at a position within 3mm from the lead.

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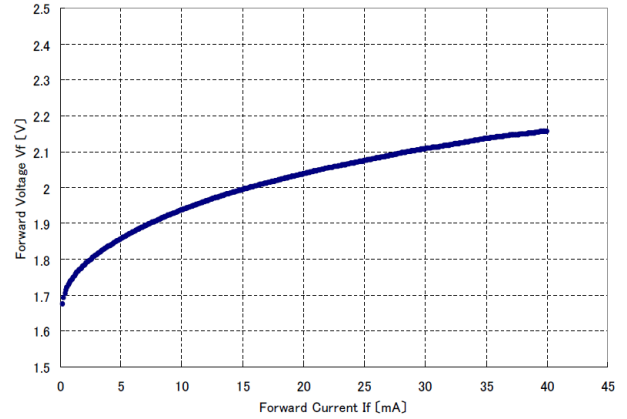
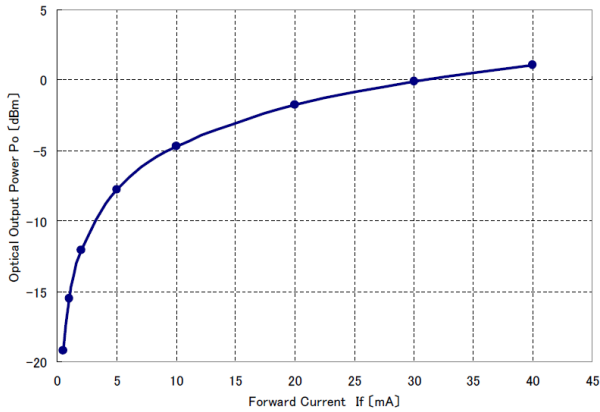
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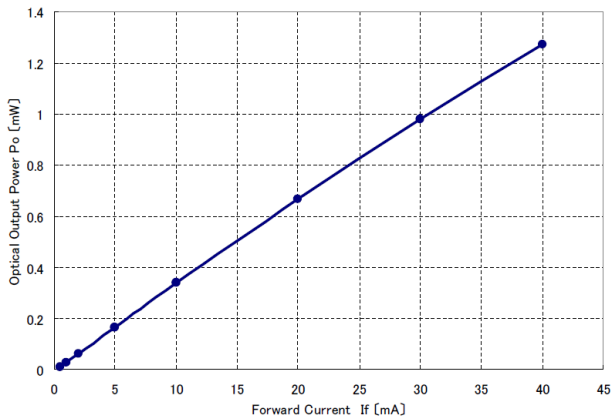
## Fiber Optic Components 125 Mbps, 650 nm LED

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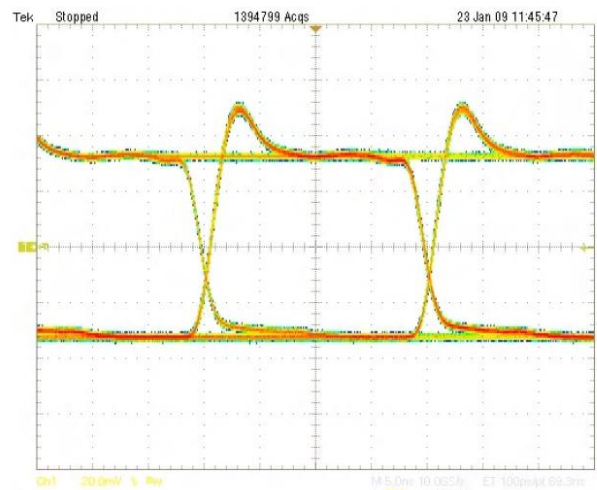
Optical output power (dBm) vs. forward current characteristics <sup>(6)</sup>



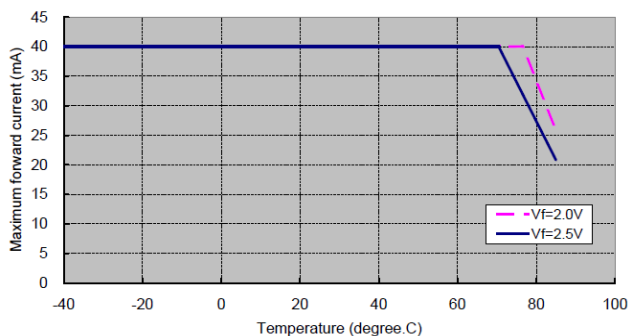
Optical output power (mW) vs. forward current characteristics <sup>(6)</sup>



Optical Waveform (Data rate 50 Mbps NRZ) <sup>(6)</sup>



Maximum forward current vs. temperature



Forward voltage vs. forward current characteristics <sup>(6)</sup>

6:  $V_{CC} = 5.00V$ ;  $R_1 = 180\Omega$ ;  $R_2 = 470\Omega$ ;  $R_3 = 10\Omega$ ;  $C_1 = 47pF$

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## Fiber Optic Components 125 Mbps, 650 nm LED

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### INTERNET

<http://www.honeywell.com/sensing/>  
[e-mail: info.sc@honeywell.com](mailto:info.sc@honeywell.com)

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