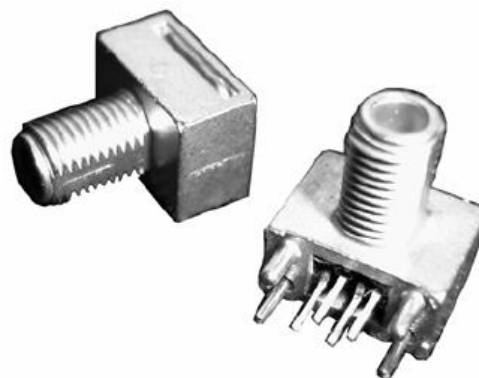


## Fiber Optic Components 125 Mbps, 650 nm LED

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.

Honeywell  
**Sensing & Control**  
1985 Douglas Drive North  
Minneapolis, MN 55422  
©Honeywell International INC. All rights reserved

**Honeywell**

*Helping You Control Your World*

## Fiber Optic Components 125 Mbps, 650 nm LED

HFE7060-200

HFE7060-210 with plastic housing	HFE7060-210i with plastic housing
<p>Pinout: 1: Cathode 2: Cathode 3: Anode 4: Cathode</p>	<p>Pinout: 1: Cathode 2: Cathode 3: Anode 4: Cathode</p>
<h3>HFE7060-200 with metal housing</h3> <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.

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

## Honeywell

*Helping You Control Your World*

Honeywell

**Sensing & Control**

1985 Douglas Drive North

Minneapolis, MN 55422

©Honeywell International INC. All rights reserved

## Fiber Optic Components 125 Mbps, 650 nm LED

HFE7060-200

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

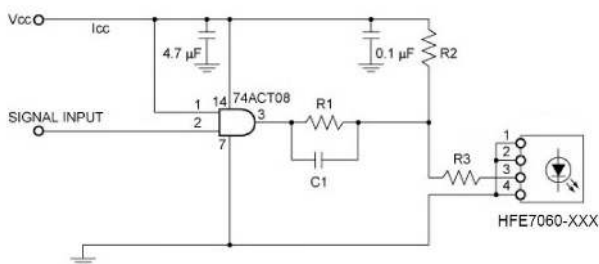
Maximum Ratings	Symbol	Rating
Forward current	$I_F$	40 mA
Reverse voltage	$V_R$	3V
Power dissipation <sup>(1)</sup>	$P_{max}$	250mW
Soldering temperature PB-free	$T_{Sold}$	250°C @ 5s at least 1,8mm away from package surface, once only
Operating temperature	$T_{opr}$	-40°C to +85°C [-40°F to +185°F]
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]

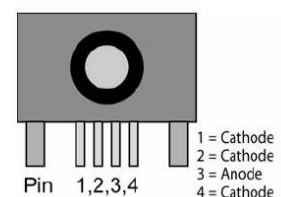
Parameters	Test Condition	Symbol	Min.	Typ.	Max.	Units
Data rate	NRZ <sup>(3)</sup>	$f_D$	DC		125	Mbps
Rise/Fall time <sup>(2)</sup>	20% - 80%	$T_{r/f}$			3,5	ns
Forward voltage	$I_F = 20\text{mA}$	$V_F$	1,8	2,0	2,5	V
Reverse current	$V_R = 3\text{V}$	$I_R$			10	$\mu\text{A}$
Peak emission wavelength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

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

## Honeywell

Honeywell

Sensing & Control

1985 Douglas Drive North

Minneapolis, MN 55422

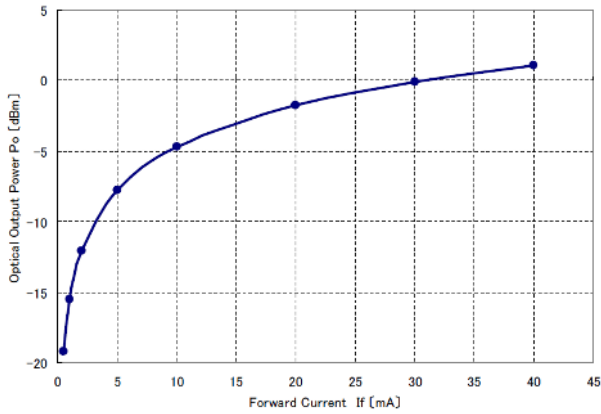
©Honeywell International INC. All rights reserved

Helping You Control Your World

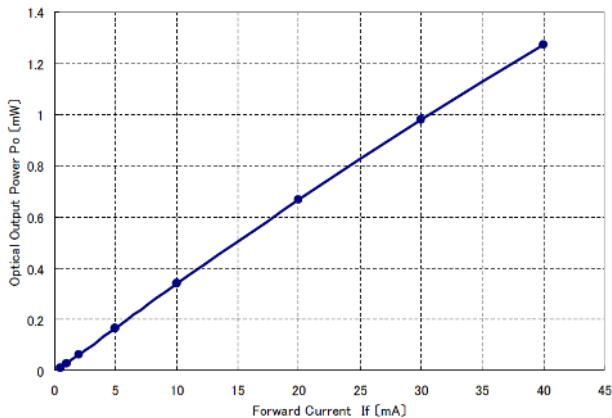
## Fiber Optic Components 125 Mbps, 650 nm LED

HFE7060-200

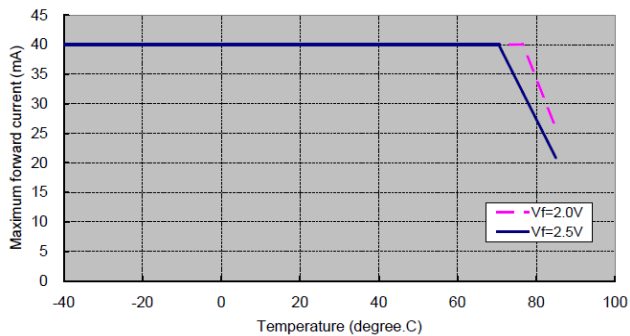
Optical output power (dBm) vs. forward current characteristics <sup>(6)</sup>



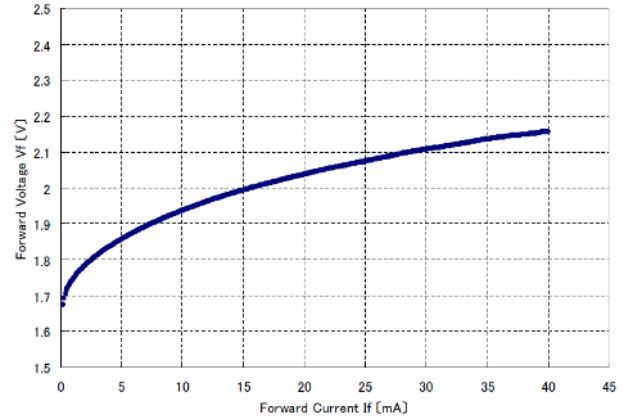
Optical output power (mW) vs. forward current characteristics <sup>(6)</sup>



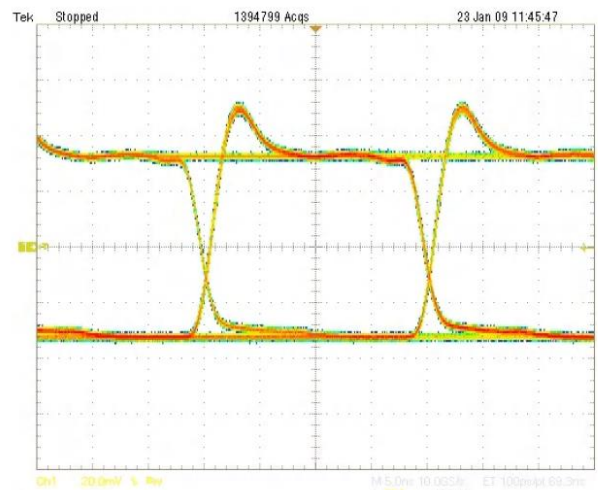
Maximum forward current vs. temperature



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



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



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

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

**Honeywell**

*Helping You Control Your World*

Honeywell  
Sensing & Control  
1985 Douglas Drive North  
Minneapolis, MN 55422  
©Honeywell International INC. All rights reserved

## Fiber Optic Components 125 Mbps, 650 nm LED

HFE7060-200

### Warranty/Remedy

Honeywell warrants goods of its manufacture as being free of defective material and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during that period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance, personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change at any time without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

### SALES AND SERVICE

Honeywell serves its customers through a world-wide network of sales offices and distributors.

For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact a nearby sales office or call:

### TELEPHONE

Germany	+49-89-3581 3310
UK	011-44-1698 481481
USA & Canada	1-800-367-6786
International	1-214-470-4271

### INTERNET

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

Specifications may change at anytime and without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use. While we provide application assistance, personally, through our literature and through the Honeywell website, it is up to the customer to determine the suitability of the product in the application. Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

This publication does not constitute a contract between Honeywell and its customers. The contents may be changed at any time without notice. It is the customer's responsibility to ensure safe installation and operation of the products. Detailed mounting drawings of all products illustrated are available on request.

© Honeywell 2002. All rights reserved.

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

## Honeywell

Honeywell  
**Sensing & Control**  
1985 Douglas Drive North  
Minneapolis, MN 55422  
©Honeywell International INC. All rights reserved

*Helping You Control Your World*