

# HFD3200 and HFE4200 Series

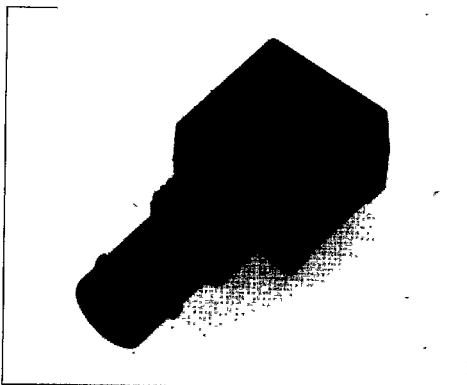
## ST® Fiber-DIP (ST-FD) LEDs and Integrated Receivers

### FEATURES

- Cost effective plastic PCB mountable package
- Operates with 100/140, 85/125, 62.5/125, and 50/125 micron fiber cable sizes
- Choices of LED output power
- High optical efficiency
- Optical port interfaces directly with standard ST® connectors
- Wide operating temperature range: -40°C to +100°C

HONEYWELL INC/ MICRO-

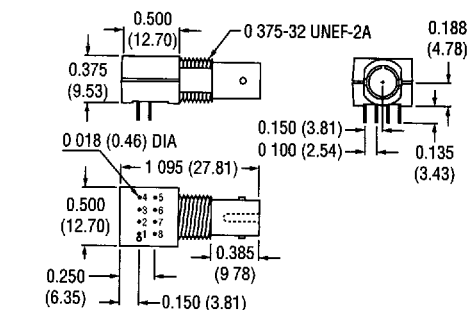
FIBER 271F



### DESCRIPTION

The Fiber-DIP devices consist of a Base Part mounted in a Plastic ST® Fiber-DIP connector. LEDs and receivers are assembled to insure the best power output or responsivity for each dash number. For more information on the Base Part refer to the relevant pages. Specifications are guaranteed limits.

### OUTLINE DIMENSIONS in inches (mm)



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# HFD3200 and HFE4200 Series

ST<sup>®</sup> Fiber-DIP (ST-FD) LEDs and Integrated Receivers

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## LEDs

| Part Number  | Description                               | Base Part                | Coupled Power Into Fiber |     |             |             | $t_r, t_f$<br>ns | Pinout |   |   |   |   |   |   |   |
|--------------|-------------------------------------------|--------------------------|--------------------------|-----|-------------|-------------|------------------|--------|---|---|---|---|---|---|---|
|              |                                           |                          | $\mu$ W                  | dBm | $I_f$<br>mA | Core<br>(4) |                  | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| HFE4211 -012 | Std. LED<br>Fiber-DIP<br>package          | HFE4020<br>or<br>HFE4070 | 3                        | -25 | 50          | 50          | 10               | N      | A | K | N | N | A | A | N |
| -013         |                                           |                          | 6                        | -22 | 50          | 50          | 10               | N      | A | K | N | N | A | A | N |
| -014         |                                           |                          | 10                       | -20 | 50          | 50          | 10               | N      | A | K | N | N | A | A | N |
| -015         |                                           |                          | 15                       | -18 | 50          | 50          | 10               | N      | A | K | N | N | A | A | N |
| -016         |                                           |                          | 25                       | -16 | 50          | 50          | 10               | N      | A | K | N | N | A | A | N |
| HFE4213 -022 | High speed LED<br>Fiber-DIP<br>package    | HFE4073                  | 3                        | -25 | 50          | 50          | 6                | N      | A | K | N | N | A | A | N |
| -023         |                                           |                          | 6                        | -22 | 50          | 50          | 6                | N      | A | K | N | N | A | A | N |
| -024         |                                           |                          | 10                       | -20 | 50          | 50          | 6                | N      | A | K | N | N | A | A | N |
| -025         |                                           |                          | 15                       | -18 | 50          | 50          | 6                | N      | A | K | N | N | A | A | N |
| HFE4213 -032 | Highest speed LED<br>Fiber-DIP<br>package | HFE4073                  | 3                        | -25 | 50          | 50          | 3.5              | N      | A | K | N | N | A | A | N |
| -033         |                                           |                          | 6                        | -22 | 50          | 50          | 3.5              | N      | A | K | N | N | A | A | N |
| -034         |                                           |                          | 10                       | -20 | 50          | 50          | 3.5              | N      | A | K | N | N | A | A | N |
| -035         |                                           |                          | 15                       | -18 | 50          | 50          | 3.5              | N      | A | K | N | N | A | A | N |

## DIGITAL INTEGRATED RECEIVERS (TTL Output, $V_{CC} = 5.0$ V)

| Part Number  | Description              | Base Part   | Sensitivity<br>(1) |     | $I_{CC}$<br>mA | PWD<br>ns<br>(3) | Output<br>(2) | Pinout |   |   |   |   |   |   |   |
|--------------|--------------------------|-------------|--------------------|-----|----------------|------------------|---------------|--------|---|---|---|---|---|---|---|
|              |                          |             | $\mu$ W            | dBm |                |                  |               | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| HFD3212 -002 | Differentiating, 10 Mbps | HFD3020-002 | 0.6                | -32 | 20             | 50               | Inv.          | N      | V | N | N | N | O | G | N |
| -003         | Differentiating, 10 Mbps | HFD3020-002 | 0.6                | -32 | 20             | 50               | Inv.          | N      | V | G | N | N | O | G | N |
| HFD3213 -002 | Direct coupled, 5 Mbps   | HFD3023-002 | 2.8                | -25 | 15             | 60               | Inv.          | N      | V | G | N | N | O | G | N |

## ANALOG INTEGRATED RECEIVERS ( $V_{CC} = 5.0$ V)

| Part Number  | Description   | Base Part   | Responsivity<br>(1)<br>mV/ $\mu$ W | Bandwidth<br>(Typical)<br>MHz | Output<br>(RMS)<br>Noise | $I_{CC}$<br>mA    | Pinout |   |   |   |   |   |   |   |
|--------------|---------------|-------------|------------------------------------|-------------------------------|--------------------------|-------------------|--------|---|---|---|---|---|---|---|
|              |               |             |                                    |                               |                          |                   | 1      | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| HFD3216 -002 | Linear output | HFD3038-002 | 5                                  | 125                           | 0.53 mV                  | 15 <sup>(5)</sup> | N      | O | E | N | N | V | E | N |

### Pinout Definition

|                   |              |                     |
|-------------------|--------------|---------------------|
| A = Anode         | I = Input    | O = Output          |
| C = Capacitor     | K = Cathode  | V = +V ( $V_{CC}$ ) |
| G = Ground (case) | N = Not used | E = -V ( $V_{EE}$ ) |

### Notes

1. Receiver sensitivity and responsivity are measured using a 100/140 micron fiber optic cable.
2. Inv = Output is low (<0.4 V) when light is striking the device
3. Pulse Width Distortion is measured at 1.5 V with an input signal of 100  $\mu$ W, 2.5 MHz, 50% duty cycle
4. Fiber Core is 50/125 micron (50).
5. I<sub>EE</sub>.