

# Ultra High Speed Photodiodes

# BPX65

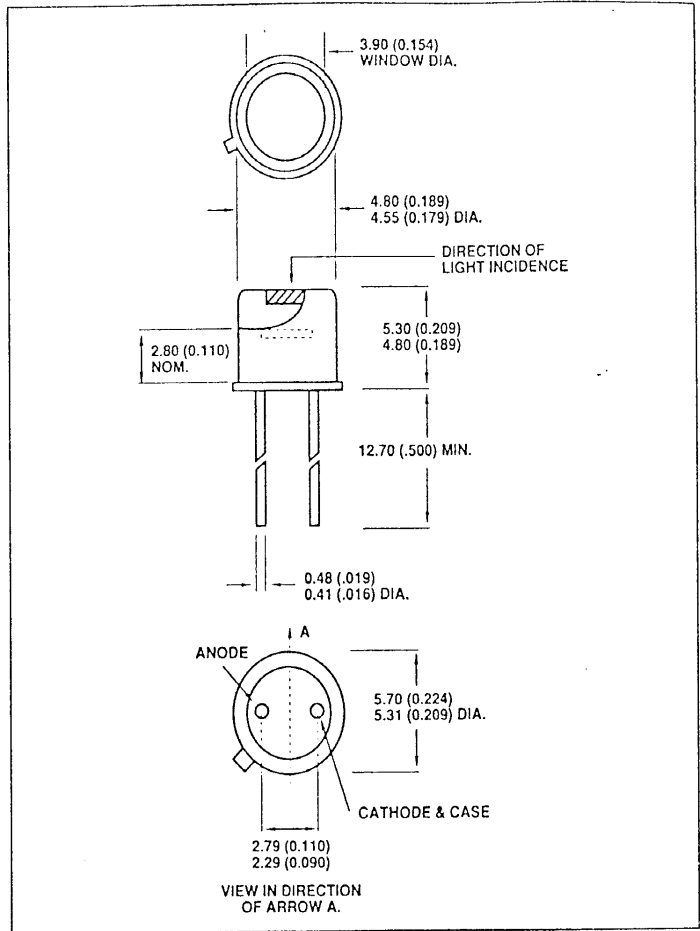
The BPX65 is a high speed, high quality silicon photodetector which is manufactured in large quantity and offers an excellent price-to-performance ratio. Its high frequency response, sensitivity and low cost make the BPX65 suitable for applications including fiber optic communications, shaft encoders, computer light pens, and laser instrumentation.

The photodetector consists of a 1mm<sup>2</sup> active element mounted in a hermetically sealed TO-18 equivalent package. The cathode is connected to the case, although a special isolated version, the BPX65R, is available upon request. This device however utilizes a three-lead TO-18 package, unlike the two-lead version shown in the diagram.

This device is available in a special package for fiber optic applications (the AX65-R2F), with an epoxy covering (the X65-EB), or even in chip form. Centronic can also supply the chip in a special custom-designed package and manufacture the device to MIL SPEC.

### ABSOLUTE MAXIMUM RATINGS

|                              |                 |
|------------------------------|-----------------|
| Storage Temperature          | -55°C to +125°C |
| Operating Temperature        | -50°C to +120°C |
| Temperature Coefficient      | 0.2% per °C     |
| Active Element Dimensions    | 1mm x 1mm       |
| Recommended Wavelength Range | 400nm to 1000nm |
| High Frequency Response      | up to 100 MHz   |
| Field of View                | 74°             |



| ELECTRO-OPTICAL SPECIFICATIONS*                       | MIN. | TYPICAL                 | MAX. | UNITS               |
|---|------|-------------------------|------|---------------------|
| Peak Sensitivity                                      |      |                         | 850  | nm                  |
| Operating Voltage                                     |      |                         | 50   | V                   |
| Power Dissipation (at 25°C)                           |      |                         | 250  | mW                  |
| Illumination Level for Saturation                     |      |                         | 5    | W/cm <sup>2</sup>   |
| Peak DC Current                                       |      |                         | 10   | mA                  |
| Peak Pulse Current (1µs, 1% duty cycle)               |      |                         | 200  | mA                  |
| Response Linearity (to better than 1%)                |      | up to 7.5               |      | mW/cm <sup>2</sup>  |
| Responsivity at 450nm                                 |      | 0.20                    |      | A/W                 |
| at 900nm  | 0.52 | 0.55                    |      | A/W                 |
| at 1064nm   |      | 0.15                    |      | A/W                 |
| Risetime (measured at 900nm) (Vr=20V)                 |      | 3.5                     |      | ns                  |
| Capacitance (Vr = 0V)                                 |      | 15                      |      | pF                  |
| Capacitance (Vr = 20V)                                |      | 3.5                     | 4.0  | pF                  |
| Dark Current (Vr = 20V)                               |      | 1.0                     | 5.0  | nA                  |
| NEP at 900nm (Vr = 20V)                               |      | 3.3 x 10 <sup>-14</sup> |      | WHz <sup>-1/2</sup> |
| Photosensitivity (at color temp of 2856°K) (Vr = 20V) |      | 6                       |      | nA/LUX              |

\* All the parameters are characteristic of a photodiode operating at 23°C, and connected to a load resistance of 50ohms (where appropriate).