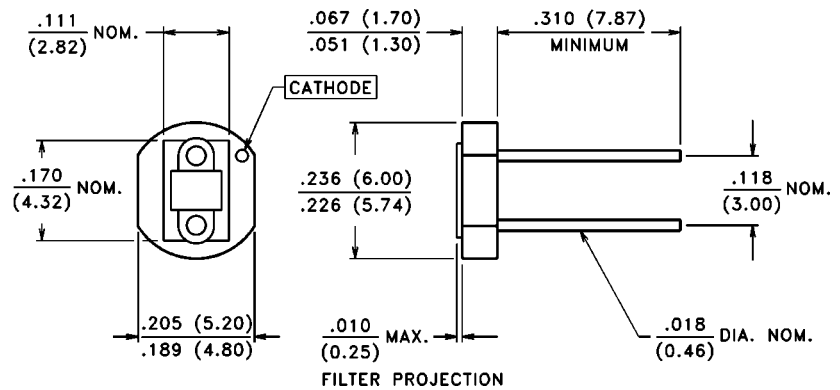


## PACKAGE DIMENSIONS inch (mm)



CASE 20F 6 mm CERAMIC  
CHIP ACTIVE AREA: .0025 in<sup>2</sup> (1.60 mm<sup>2</sup>)

## PRODUCT DESCRIPTION

Small area planar silicon photodiode in a recessed ceramic package. The package incorporates an infrared rejection filter. These diodes have very high shunt resistance and have good blue response.

## ABSOLUTE MAXIMUM RATINGS

Storage Temperature: -20°C to 75°C  
Operating Temperature: -20°C to 75°C

## ELECTRO-OPTICAL CHARACTERISTICS @ 25°C (See also VTB curves, pages 21-22)

| SYMBOL             | CHARACTERISTIC                          | TEST CONDITIONS    | VTB9412B                       |      |      | VTB9413B                       |      |      | UNITS     |
|--------------------|---|--------------------|--------------------------------|------|------|--------------------------------|------|------|-----------|
|                    |   |                    | Min.                           | Typ. | Max. | Min.                           | Typ. | Max. |           |
| I <sub>SC</sub>    | Short Circuit Current                   | H = 100 fc, 2850 K | .8                             | 1.3  |      | .8                             | 1.3  |      | μA        |
| TC I <sub>SC</sub> | I <sub>SC</sub> Temperature Coefficient | 2850 K             |                                | .02  | .08  |                                | .02  | .08  | %/°C      |
| V <sub>OC</sub>    | Open Circuit Voltage                    | H = 100 fc, 2850 K |                                | 420  |      |                                | 420  |      | mV        |
| TC V <sub>OC</sub> | V <sub>OC</sub> Temperature Coefficient | 2850 K             |                                | -2.0 |      |                                | -2.0 |      | mV/°C     |
| I <sub>D</sub>     | Dark Current                            | H = 0, VR = 2.0 V  |                                |      | 100  |                                |      | 20   | pA        |
| R <sub>SH</sub>    | Shunt Resistance                        | H = 0, V = 10 mV   |                                | .25  |      |                                | 7.0  |      | GΩ        |
| TC R <sub>SH</sub> | R <sub>SH</sub> Temperature Coefficient | H = 0, V = 10 mV   |                                | -8.0 |      |                                | -8.0 |      | %/°C      |
| C <sub>J</sub>     | Junction Capacitance                    | H = 0, V = 0       |                                | .31  |      |                                | .31  |      | nF        |
| λ <sub>range</sub> | Spectral Application Range              |                    | 330                            |      | 720  | 330                            |      | 720  | nm        |
| λ <sub>p</sub>     | Spectral Response - Peak                |                    |                                | 580  |      |                                | 580  |      | nm        |
| V <sub>BR</sub>    | Breakdown Voltage                       |                    | 2                              | 40   |      | 2                              | 40   |      | V         |
| θ <sub>1/2</sub>   | Angular Resp. - 50% Resp. Pt.           |                    |                                | ±50  |      |                                | ±50  |      | Degrees   |
| NEP                | Noise Equivalent Power                  |                    | 5.3 x 10 <sup>-14</sup> (Typ.) |      |      | 1.1 x 10 <sup>-14</sup> (Typ.) |      |      | W/√Hz     |
| D*                 | Specific Detectivity                    |                    | 2.4 x 10 <sup>12</sup> (Typ.)  |      |      | 1.2 x 10 <sup>13</sup> (Typ.)  |      |      | cm√Hz / W |