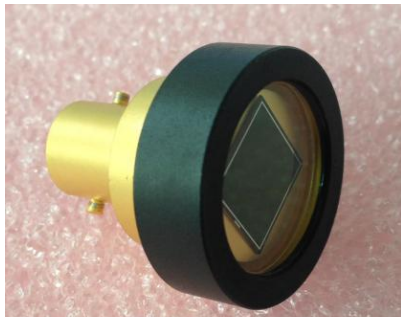


## Human eye response photo diode

### OSD100-EBNC



## Description

The OSD100-EBNC is human eye response high-output, high-speed silicon photo diode which is mounted in BNC package, permits wide angular response.

## Features

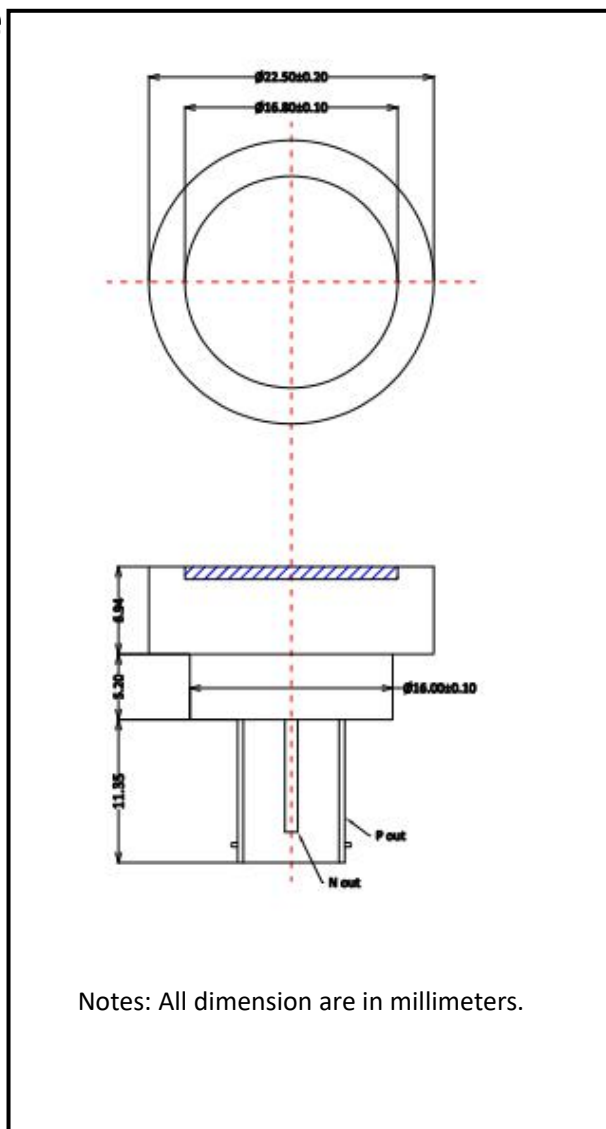
- \* High sensitivity, high speed response
- \* Wide angular response
- \* High reliability in demanding environments
- \* Operating temperature is from -40 to +80°C
- \* Storage temperature is from -40 to +100°C

## General Ratings

- \* Type Silicon Photodiode
- \* High linearity
- \* Low cost
- \* Low dark current

## Applications

- \*Color sensor
- \*Laser detect
- \* Medical equipment
- \*luminometer



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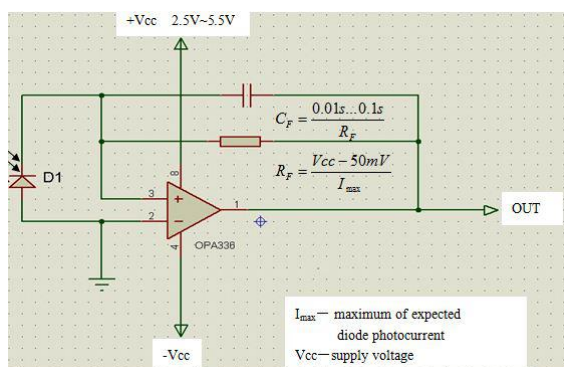
<http://en.e-otron.com>

## Absolute Maximum Ratings (Ta=25°C)

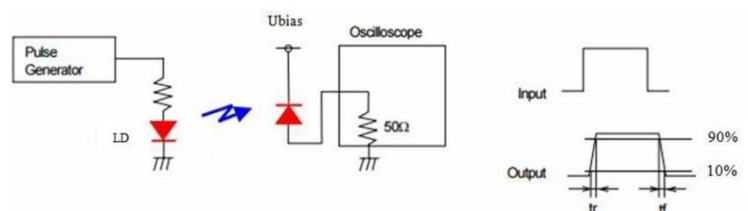
| Parameter                          | Symbol             | Condition   | Min. | Typ.    | Max. | Unit            |
|------------------------------------|--------------------|---|------|---------|------|-----------------|
| Chip size                          | Size               |   |      | 10*10   |      | mm              |
| Active area                        | A                  |   |      | 9.4*9.4 |      | mm <sup>2</sup> |
| Short circuit Current              | I <sub>sc</sub>    | Ev=5mw/cm <sup>2</sup> fc=2856k*                          |      | 750     |      | μA              |
| Isc Temperature Coefficient        | TC I <sub>sc</sub> | 2856k   |      | 1.2     |      | %/°C            |
| Open Circuit Voltage               | V <sub>oc</sub>    | Ev=5mw/cm <sup>2</sup> fc=2856k*                          |      | 450     |      | mV              |
| Voc Temperature Coefficient        | TC Voc             | 2856k   |      | -2.2    |      | mV/°C           |
| Dark current                       | I <sub>D</sub>     | VR=10mV   |      | 80      |      | pA              |
|                                    |                    | VR=10V  |      | 760     |      |                 |
| Rise time                          | t <sub>R**</sub>   | V <sub>R</sub> =0V; λ=535nm; R <sub>L</sub> =50Ω, f=1MHz, |      | 320     |      | ns              |
|                                    |                    | V <sub>R</sub> =5V; λ=535nm; R <sub>L</sub> =50Ω, f=1MHz  |      | 310     |      | ns              |
|                                    |                    | V <sub>R</sub> =10V; λ=535nm; R <sub>L</sub> =50Ω, f=1MHz |      | 270     |      | ns              |
| Temp coefficient of I <sub>D</sub> | T <sub>CID</sub>   |   |      | 0.18    |      | times/°C        |
| Reverse breakdown voltage          | V <sub>(BR)R</sub> | I <sub>R</sub> =100μA Ev=0lx                              | 50   |         |      | V               |
| Junction Capacitance               | C <sub>J</sub>     | V <sub>R</sub> =0V f=1MHz                                 |      | 1754    |      | pF              |
|                                    |                    | V <sub>R</sub> =10V f=1MHz                                |      | 1319    |      |                 |
| Photo sensitivity                  | S <sub>R</sub>     | 550nm   |      | 0.45    |      | A/W             |
| Spectral Application Range         | λ <sub>range</sub> |   | 350  |         | 700  | nm              |
| Spectral Response-Peak             | λ <sub>p</sub>     |   |      | 550     |      | nm              |
| Shunt resistance                   | R <sub>sh</sub>    | VR=10mV   |      | 0.13    |      | GΩ              |
| Rsh Temperature Coefficient        | TC R <sub>sh</sub> |   |      | 0.18    |      | %/°C            |
| Angular Resp 50% Resp Pt           | θ <sub>1/2</sub>   |   |      | ±60     |      | Degrees         |

\* Ev: Illuminance by CIE standard light source A (tungsten lamp)

### Typical application circuit



### \*\* Response time measurement Circuit:

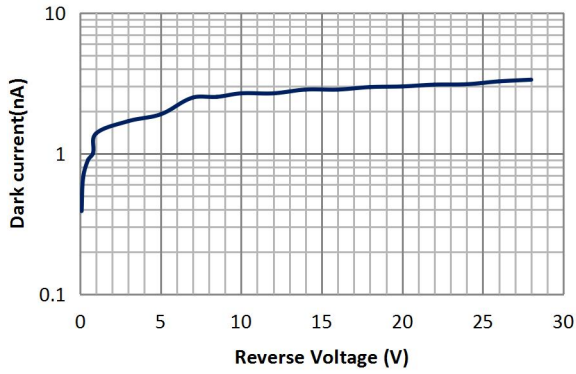


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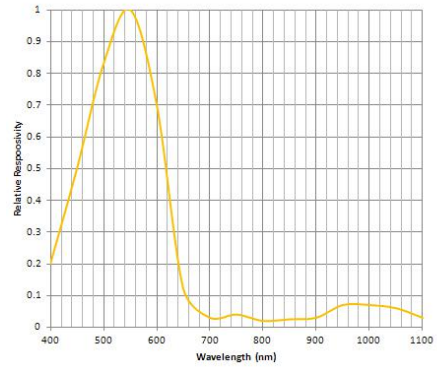


# OSD100-EBNC

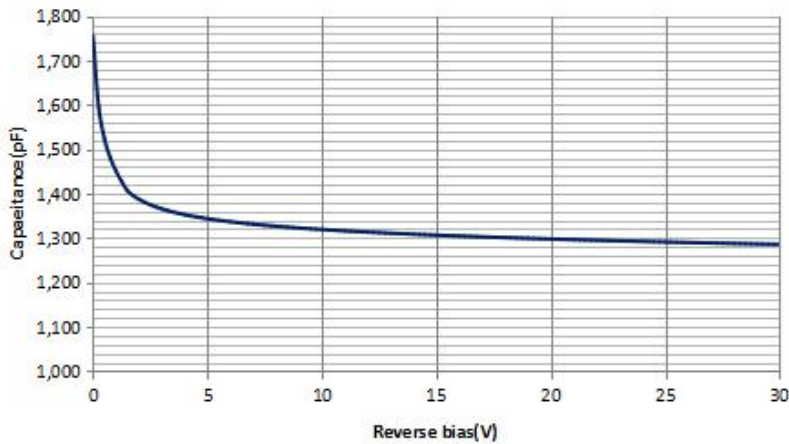
## ■ Dark current vs. reverse voltage



## ■ Spectral response



## ■ Relative Junction Capacitance VS. Voltage



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