

# High Voltage Opto-diode - Axial Lead

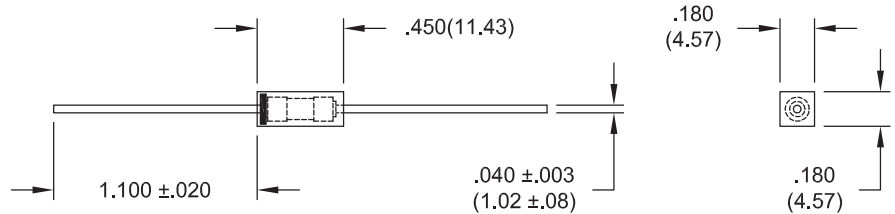
Original Released: 03-06-09

**0.5 A • 3000ns**

| ELECTRICAL CHARACTERISTICS AND MAXIMUM RATINGS   |   |  |         |  |      |                                      |       |   |   |  |                                       |       |        |  |
|--|---|--|---------|--|------|--------------------------------------|-------|---|---|--|---------------------------------------|-------|--------|--|
| Part Number  | Working Reverse Voltage<br>(V <sub>rw</sub> ) | Average Rectified Current<br>(I <sub>o</sub> ) |         | Reverse Current @ V <sub>rw</sub><br>(I <sub>r</sub> ) |      | Forward Voltage<br>(V <sub>f</sub> ) |       | 1 Cycle Surge Current<br>t <sub>p</sub> =8.3ms<br>(I <sub>fsm</sub> ) | Repetitive Surge Current<br>(I <sub>frm</sub> ) | Reverse Recovery Time<br>(3)<br>(T <sub>rr</sub> ) | Thermal Impedance<br>θ <sub>J-L</sub> |       |        | Junction Cap.<br>@50VDC<br>@ 1kHz<br>(C <sub>j</sub> ) |
|  |   | Volts  | 55°C(1) | 100°C(2)   | 25°C | 100°C                                | 25°C  |   | 25°C  | 25°C   | 25°C                                  | L=000 | L=.125 | L=.250   |
|  | Amps  |  | Amps    | Amps   | μA   | μA                                   | Volts | Amps  | Amps  | Amps   | ns                                    | °C/W  | °C/W   | °C/W   |
| OZ100SG  | 10000   | 0.50   | 0.25    | 1.0  | 25   | 12.0                                 | 0.60  | 25  | 5.0   | 3000   | 6                                     | 9     | 15     | 8.0  |
| (1)TL=55°C L=0.375" (2)TL=100°C L=0.375" (3)I <sub>f</sub> =0.5A, I <sub>r</sub> =1.0A, I <sub>rr</sub> =0.25A *Op.Temp.= -65°C to +175°C Stg.Temp.= -65°C to +200°C |   |  |         |  |      |                                      |       |   |   |  |                                       |       |        |  |

Markings:  
B VMI  
A OZ100SG  
N D/C  
D

Tolerance:  
XXX ±.010



Dimensions: In. (mm) • All temperatures are ambient unless otherwise noted.



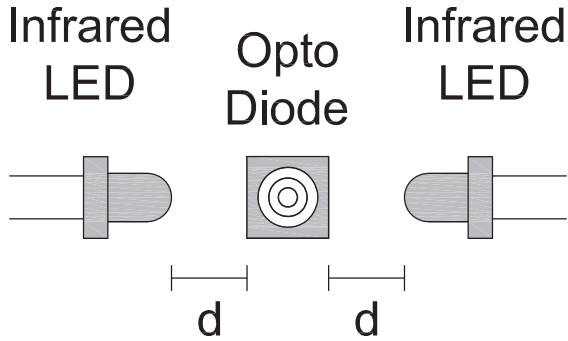
Voltage Multipliers Inc.

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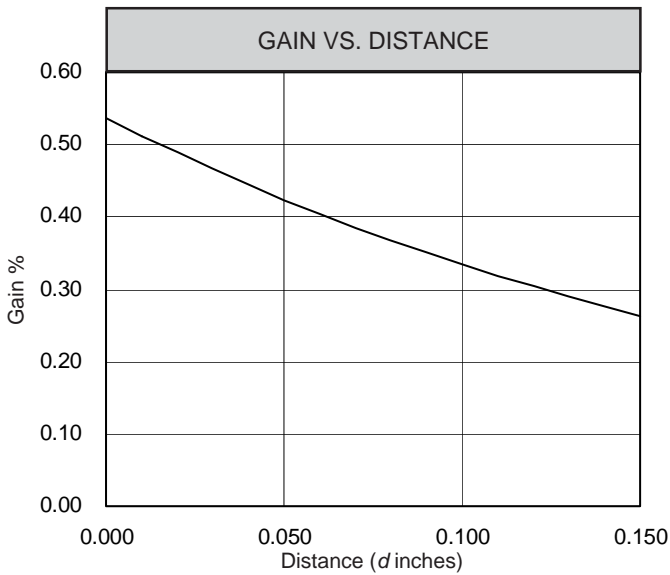
# OZ100SG

## Typical HV Opto-Coupler Configuration

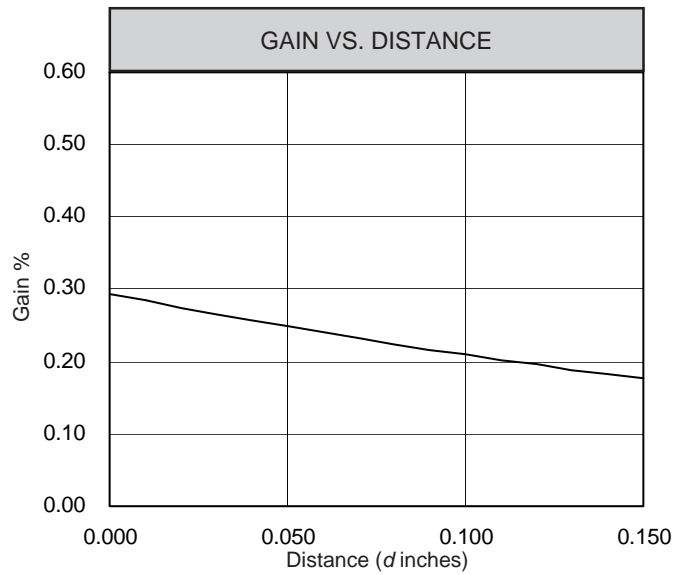


- LEDs placed in close proximity to opto-diode.
- Gain of configuration is determined by:
 
$$\frac{I_{\text{OPTO}}}{I_{\text{LED}}} \times 100\%$$
- Gain is dependent on:
  - Distance ( $d$ ) of LEDs from opto-diode.
  - Wavelength of LED light ( $\lambda_{\text{LED}}$ ).
  - Intensity of LED light ( $\Phi_e$ ).
  - Optical properties of medium between LEDs and opto-diode.

$\lambda_{\text{LED}} = 940 \text{ nm}, \Phi_{e \text{ min}} = 40 \text{ mW/sr}$



$\lambda_{\text{LED}} = 890 \text{ nm}, \Phi_{e \text{ min}} = 50 \text{ mW/sr}$



Both configurations use  $V_{\text{OPTO}} = 10\text{kV}$  and two LEDs

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