

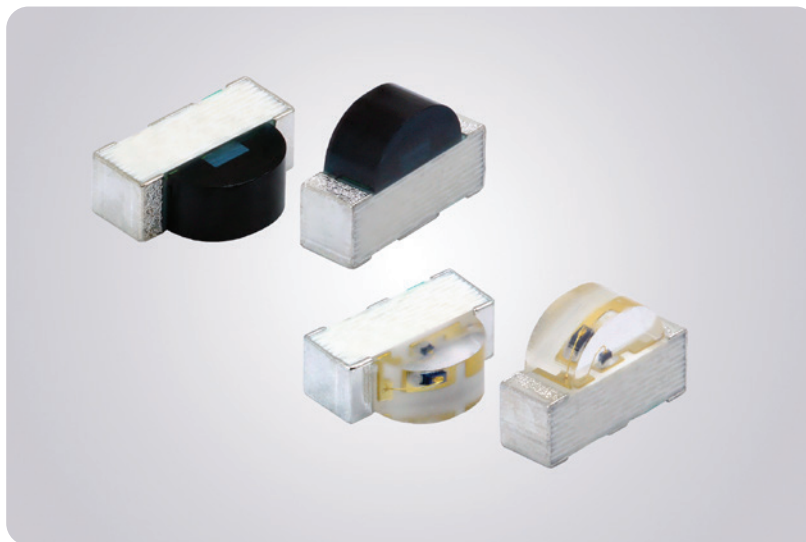


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# INFRARED EMITTERS AND PHOTO DETECTORS

VSMB10940, VEMD10940F

## Low-Profile, Surface-Mount Side Lookers



### 1 mm Height, Side-view Infrared Emitters and PIN Photodiode

Vishay's 1 mm height emitters and detector have the best performance on the market. The emitters have the highest radiant intensity and feature the highest DC operating current up to 52 °C. At a 40 °C ambient temperature, the radiant intensity of the Vishay part is higher than the competing emitters by more than a factor of 2. The PIN Photodiode has the lowest dark current, which results in the best signal-to-noise ratio.

## FEATURES AND BENEFITS

### Detector – VEMD10940F

- Wavelength of peak sensitivity:  $\lambda_P = 920 \text{ nm}$
- Reverse light current:  $I_{ra} = 3 \text{ }\mu\text{A}$
- Low dark current:  $I_{ro} = 1 \text{ nA}$
- Daylight filter
- Dimensions (L x W x H in mm): 3 x 2 x 1
- Operating temperature range: -40 °C to +100 °C

### Emitter - VSMB10940

- Emitting wavelength:  $\lambda_P = 940 \text{ nm}$
- Angle of half intensity:
  - Horizontal:  $\phi_H = \pm 77.5^\circ$
  - Vertical:  $\phi_V = \pm 72.5^\circ$
- Radiant intensity,  $I_e = 1 \text{ mW/sr}$
- Dimensions (L x W x H in mm): 3 x 2 x 1
- Operating temperature range: -40 °C to + 85 °C

## APPLICATIONS

- Infrared touch panels
- Space-constrained assemblies

## RESOURCES

- Datasheet: [VSMB10940](#), [VEMD10940F](#), [VEMD10940FX01](#)
- For technical questions contact [support@vishay.com](mailto:support@vishay.com)
- Material categorization: For definitions of compliance please see <http://www.vishay.com/doc?99912>

RoHS  
COMPLIANT

HALOGEN  
FREE

GREEN  
[5-2008]



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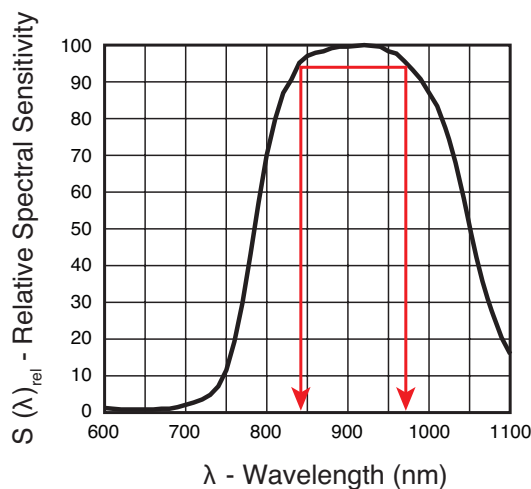
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VSMB10940, VEMD10940F

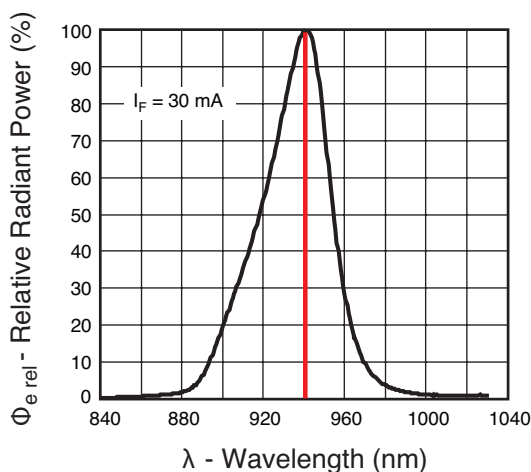
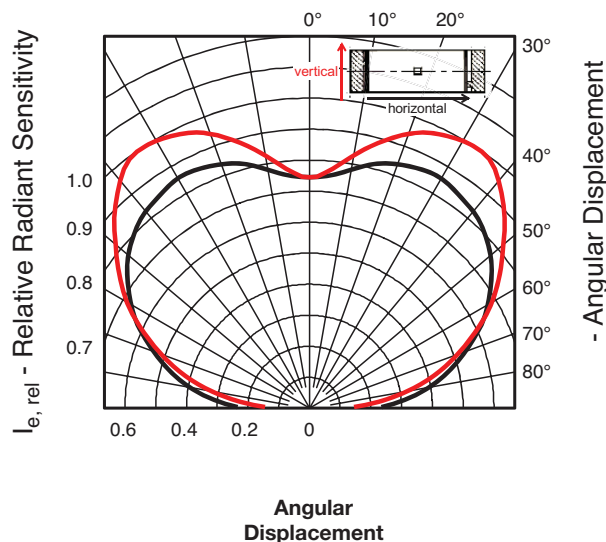
## Low-Profile, Surface-Mount Side Lookers

### ANGULAR DISPLACEMENT, INTENSITY AND SENSITIVITY

The VEMD10940F and VSMB10940 have a wide angle of half sensitivity and intensity profile, typically  $\pm 75^\circ$ . The VSMB10940 has a peak intensity of 940 nm and it provides a radiant intensity of typically 1 mW/sr at 20 mA drive current. The VEMD10940F has a peak sensitivity of 920 nm and is optimized to maintain over 95 % sensitivity for the wavelength range of 840 nm to 970 nm. Therefore, it is ideally matched to both emitters. The VEMD10940F includes a filter to block visible light and provides a typical photo current of 3  $\mu\text{A}$  given an irradiance of 1 mW/cm<sup>2</sup>,  $V_r = 5\text{ V}$ ,  $\lambda = 950\text{ nm}$ .



VEMD10940F  
PIN Photodiode



VEMD10940F  
PIN Photodiode