



# TSSP93038DF1PZA and TSSP93038SS1ZA IR Sensor Modules Provide Robust Operation in Direct Sunlight Without Attenuators, Feature Typical Irradiance of 1.3 mW/m<sup>2</sup> for Long Range Presence and Proximity Sensing of 1 m, and 11 m for Light Curtain Applications

## Product Benefits:

- Typical irradiance of 1.3 mW/m<sup>2</sup>
- Offered in compact Minimold packages
- Fast 260 μs reaction time
- Long range proximity sensing of 1 m, and 11 m for light curtain applications, when used with Vishay's TSAL6100 IR emitting diode at a forward current of 100 mA
  - Longer ranges can be achieved by using a more focused emitter like the VSLY5940 or by increasing the emitter forward current
- Supply voltage range from 2.0 V to 3.6 V
- Low supply current of 0.35 mA
- Sensitive to a carrier frequency of 38 kHz
- Insensitive to ripple noise on the supply voltage
- Provide shielding against EMI
- An IR filter suppresses visible light
- RoHS-compliant, halogen-free, and Vishay Green



## Market Applications:

- Proximity sensor for toys, drones, robots, and vicinity switches
- Presence detection for traffic control lights and parking lot, gateway access, and water level sensors
- Light barriers for sports racing and lawnmower robots
- Reflective sensors for hand dryers, towel or soap dispensers, water faucets, toilets, vending machine fall detection, and security and pet gates



## The News:

Vishay Intertechnology introduces two new fixed-gain infrared (IR) sensor modules designed to lower costs and increase stability for outdoor sensor applications. Offering typical irradiance of 1.3 mW/m<sup>2</sup> in compact Minimold packages, the surface-mount TSSP93038DF1PZA and leaded TSSP93038SS1ZA provide robust operation in direct sunlight, while still providing enough sensitivity for light barrier applications.

- Unlike high sensitivity fixed-gain IR sensor modules that require attenuators like dark panels, apertures, and sunshades to protect them against sunlight — adding to overall solutions costs — the controlled sensitivity of the TSSP93038DF1PZA and TSSP93038SS1ZA allows them to operate in full sunlight without unwanted pulses
- For short range presence and proximity applications, the sensors' reduced sensitivity eliminates the need for extremely low emitter forward currents, which can lead to unstable intensity outputs
- Designed to receive IR pulses from an emitter with a peak wavelength of 940 nm

## The Key Specifications:

- Package: Minimold
- Typical irradiance: 1.3 mW/m<sup>2</sup>
- Reaction time: 260  $\mu$ s
- Supply voltage range: 2.0 V to 3.6 V
- Supply current: 0.35 mA
- Angle of half transmission distance:  $\pm 45^\circ$

### Availability:

Samples and production quantities of the new sensors are available now, with lead times of six weeks.

To access the product datasheets on the Vishay Website, go to

<http://www.vishay.com/ppg?82909> (TSSP93038DF1PZA)

<http://www.vishay.com/ppg?82910> (TSSP93038SS1ZA)

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