New 850 nm, 890 nm, and 940 nm High Speed IR Emitters in Compact 0805 SMD Package With 30 % Higher Brightness vs. Previous Generation Devices; Opaque Side Walls Eliminate Unwanted Side Emissions

Product Benefits:

- Available with peak wavelengths of 850 nm, 890 nm, and 940 nm
- Built on SurfLight™ surface emitter chip technology
- Compact 2 mm by 1.25 mm by 0.8 mm 0805 surface-mount package with opaque side walls
- High radiant intensity to 13 mW/sr at 100 mA
- Wide temperature range from -40 °C to +110 °C
- ± 60° angle of half intensity
- Fast rise and fall times of 7 ns
- Low forward voltages down to 1.6 V at 100 mA
- Automotive Grade part (qualification acc. to AEC-Q101)
- Floor life of 168 hours
- Feature a moisture sensitivity levels of 3 in accordance with J-STD-020
- Support lead (Pb)-free reflow soldering
- RoHS-compliant, halogen-free, and Vishay Green

Market Applications:

- Position tracking in virtual reality headsets
- Proximity sensors, optical switches, and miniature light barriers
- Automotive sensors

The News:

Vishay Intertechnology broadens its optoelectronics portfolio with the release of new high speed infrared (IR) emitters in a 2 mm by 1.25 mm by 0.8 mm 0805 surface-mount package, the industry's smallest package to offer opaque side walls. Built on Vishay's SurfLight surface emitter chip technology, the Vishay Semiconductors VSMY5850X01 (850 nm), VSMY5890X01 (890 nm), and VSMY5940X01 (940 nm) deliver 30 % higher radiant intensity than previous-generation devices over a wide temperature range from -40 °C to +110 °C.

- Unlike traditional PCB packages that utilize an all-transparent epoxy to embed the emitter chip, the opaque side walls of the VSMY5850X01, VSMY5890X01, and VSMY5940X01 prevent unwanted side emissions that can cause a halo effect in camera images
  - Ideal for position tracking in virtual or augmented reality applications
  - Simplify designs by eliminating the need for external barriers such as rubber rings
- While standard IR emitters emit light in all directions, SurfLight devices emit nearly all of their light and power out of the top of the chip
  - With most of the light concentrated on the surface, the IR emitters achieve higher intensity

The Key Specifications:

Part number	VSMY5850X01	VSMY5890X01	VSMY5940X01
Peak wavelength (nm)	850	890	940
Typical radiant intensity (mW/sr) at 100 mA	13		
Angle of half intensity (°)	± 60		
Typical forward voltage (V) at 100 mA	1.8	1.8	1.6
Rise / fall time (ns)	7		

Availability:
Samples of the new IR emitters are available now. Production quantities are available with lead times of 10 weeks

For the latest in all things opto — articles, videos, and products — visit Vishay's Opto Squad blog site: www.vishayopto.com.

To access the product datasheets on the Vishay Website, go to
https://www.vishay.com/ppg?84915 (VSMY5850X01)
https://www.vishay.com/ppg?84952 (VSMY5890X01)
https://www.vishay.com/ppg?84886 (VSMY5940X01)

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