

Ushio's Epitex D-Series SWIR LEDs now up to four times more powerful

Ushio has commenced production of its latest high-powered short-wavelength infrared (SWIR) LEDs, the Epitex D-Series. Following the prior success of the S-Series, the Epitex D-Series achieves the world's highest output power and efficiency.

Low-power chips are mounted in SMT packages and moulded type LEDs; while with 1 mm² high-powered chips, the SWIR D-Series can be mounted in EDC, SMBB, and TO-66 packages. For the majority of wavelengths, a two-fold improvement of output and efficiency is attained; however, the high-power versions have ramped up their forward current to 1 A and gain a boost of up to four times the original radiated power output. The resulting efficiency improvement gives operators the opportunity to enjoy cheaper power output, thereby reducing the overall cost per Watt.

As a part of the ever-changing solid state lighting (SSL) sector, the list of applications for SWIR is evolving and expanding continuously. To serve its customers best, Ushio offers a wide range of SWIR wavelengths (1000 nm – 1750 nm) and many customisation options, such as multi-chip packages or the output of specific wavelengths. This ability to create the perfect SWIR LED for each individual application bestows Ushio's renowned solution versatility upon the Epitex D-Series.

Epitex D-Series SWIR LEDs applications

- Biological tissue characterisation
- Biometrics
- Blood analysis
- Counterfeit detection
- Machine vision
- Material identification
- Medical sensors
- Moisture content measurement
- Mineral exploration
- Night vision
- Optical sorting
- Produce inspection
- Quality control / quality assurance
- Retinal scan and OCT-Angiography
- Spectroscopy
- Sun simulation
- Wafer inspection

The Kyoto-based developers of the Epitex D-Series, Ushio Opto Semiconductors, Inc., have found great success in the optical semiconductor device business. This has led to the company becoming fully integrated into its parent company, Ushio, Inc., as of 1st April 2020. The new D-Series marks another record-breaking foray into the solid state lighting (SSL) sector for the Japanese firm.

Following the successful release of the [Spectro Broadband LED Series](#), Ushio is no stranger to world records and first-time breakthroughs. Ushio has also committed to offering the most comprehensive range in speciality solid state lighting. The Epitex LED range covers UV, visible, NIR, and SWIR wavelengths between 365 nm and 1750 nm and relies on over 30 years of experience in chip and packaging technologies. Chip technology includes bespoke design, in-house epitaxial growth, and device processing; while packaging

technology brings optics design and thermal management techniques. Epitex offers [EDC](#), [SMBB](#), [SMT](#), and [multi-chip SMT](#) standard packages alongside many others.

The SWIR D-Series, which is based on InGaAsP semiconductor wafer technology, is not the only SWIR LED series to receive an upgrade. The SMBB1050GD-1100 high-power SWIR LED uses GaAs wafer technology to achieve a 1050 nm wavelength with an increased output power of 700 mW at 1 A. This latest update exemplifies how Ushio returns to the drawing board to improve on its past successes.

Epitex D-Series benefits

- World's highest output power and efficiency ever achieved by an SWIR LED, with a two to four-fold improvement over the conventional Epitex S-Series.
- Wide range of wavelengths can be chosen across the SWIR sector, between 1000 nm and 1750 nm.
- Excellent customisation options – Ushio can deliver the perfect solution to your application needs with variations on wavelength, chip size, lens type, and more.

Contact Ushio to begin your sales enquiries

To begin your **EMEA** sales enquiries regarding Epitex SWIR LEDs, Ushio Europe's SSL Sales Director, Ardan Fuessmann, can be reached via our [contact page](#), or by emailing SSL@ushio.eu. Mr. Fuessmann is readily available to discuss all your solid state lighting needs and is happy to guide you through our entire LED and laser diode portfolio.

Further reading regarding Ushio's recent SSL achievements

[Release of high-power red laser diode for laser projectors - achieved World's highest pulse optical output power of 3.5 W \(January 2019\)](#)

[Spectro broadband LED series is the most powerful ever \(June 2019\)](#)

[SMBB LED family expanded to 1100 nm and 1150 nm by Ushio \(June 2019\)](#)

[659 nm biomedical red laser diode reaches highest power ever with CW optical output power of 1.2 W \(October 2019\)](#)

[Ushio unveils 660 nm single-mode high-power red laser diode \(January 2020\)](#)