

PowerBoost VCSELs

Summer 2020
Light is OSRAM

PowerBoost spotlight

Features

Compact footprint with leading-edge VCSEL multi-junction technology.

Applications

AR/VR
Face recognition
Home Automation
Industrial Automation
3D Sensing
LiDAR

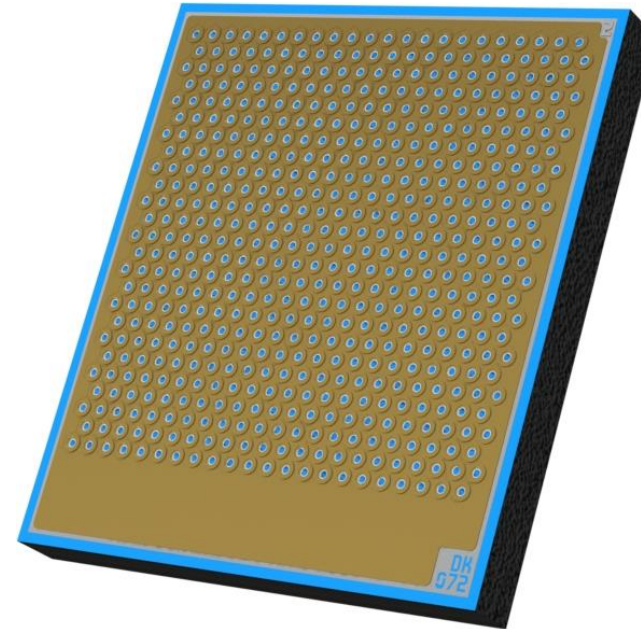
Benefits

Exceptional Efficiency

- Power conversion >%50
- Slope efficiency of 2 W/A for dual junction
- Slope efficiency of 3 W/A for triple junction

High Optical Power

- Less current required to achieve the same optical performance as a single junction VCSEL.
- Faster switching speed of the driver possible due to greatly reducing required current.



PowerBoost – V00155 - Dual Junction VCSEL

Characteristics

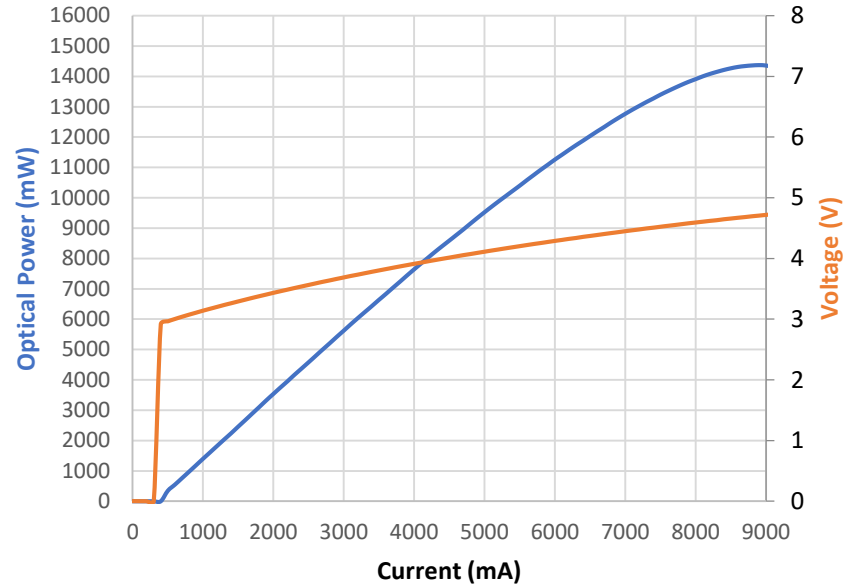
$T_a = 20^\circ\text{C}$, $I_f = 4\text{ A}$; $t_p = 100\ \mu\text{s}$; DC = 1%

Forward Voltage	3.9 V
Output Power	7 W
Threshold Current	0.5 A
Slope Efficiency	2.0 W/A
Power Conversion Efficiency	49%
Peak Wavelength	940nm
Field of View at 50% FWHM	25°

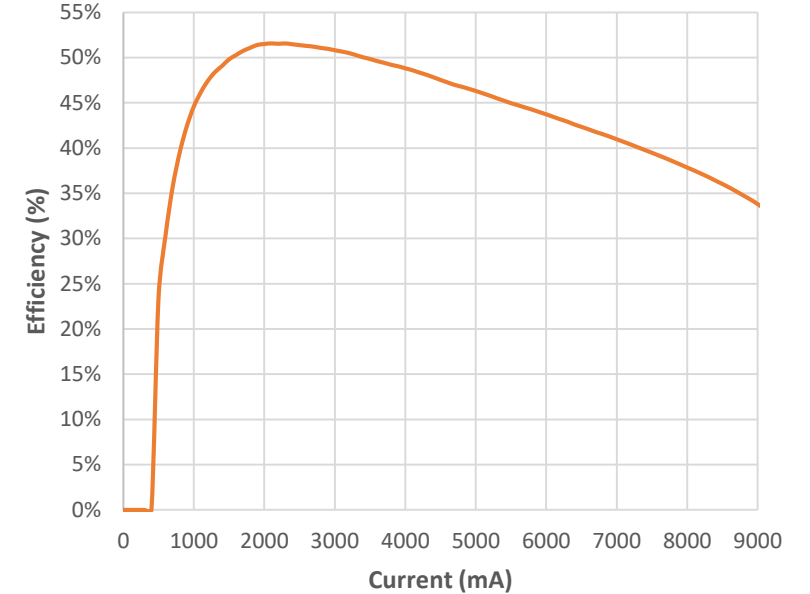
Die Specifications

Dimensions	1.0 mm x 0.90 mm x 0.10mm
Apertures	550
Aperture Size	10 μm
Emission Area	0.815mm x 0.796mm
Chip Technology	GaAs VCSEL

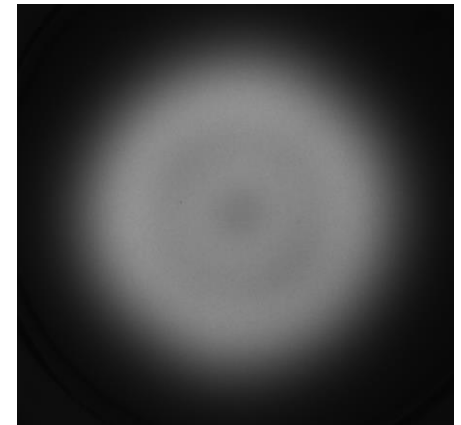
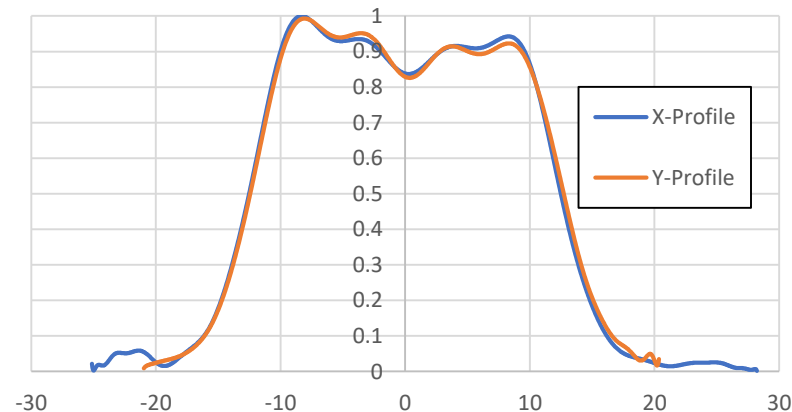
LIV Performance



Efficiency



Beam Profile



PowerBoost – V00156 - Triple Junction VCSEL

Characteristics

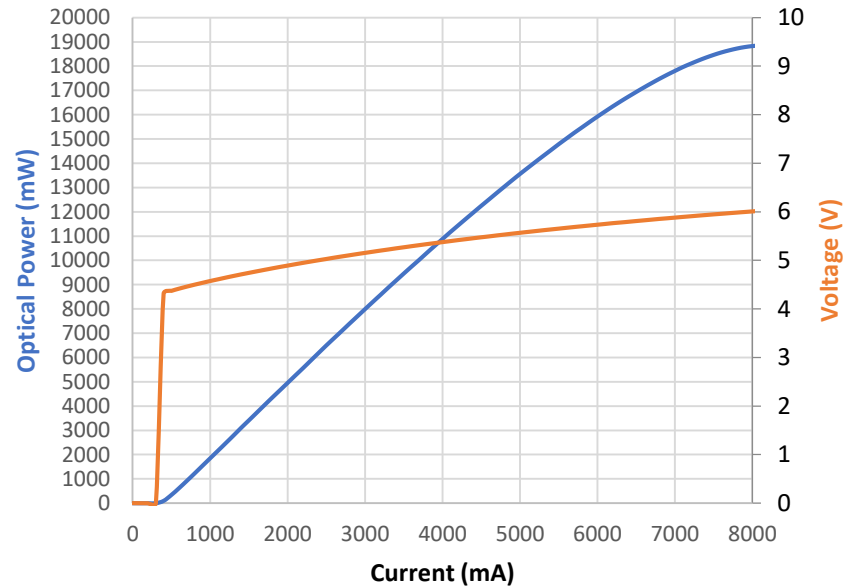
$T_a = 20^\circ\text{C}$, $I_f = 4\text{ A}$; $t_p = 100\ \mu\text{s}$; DC = 1%

Forward Voltage	5.9 V
Output Power	10.8 W
Threshold Current	0.5 A
Slope Efficiency	3.0 W/A
Power Conversion Efficiency	50%
Peak Wavelength	940nm
Field of View at 50% FWHM	28°

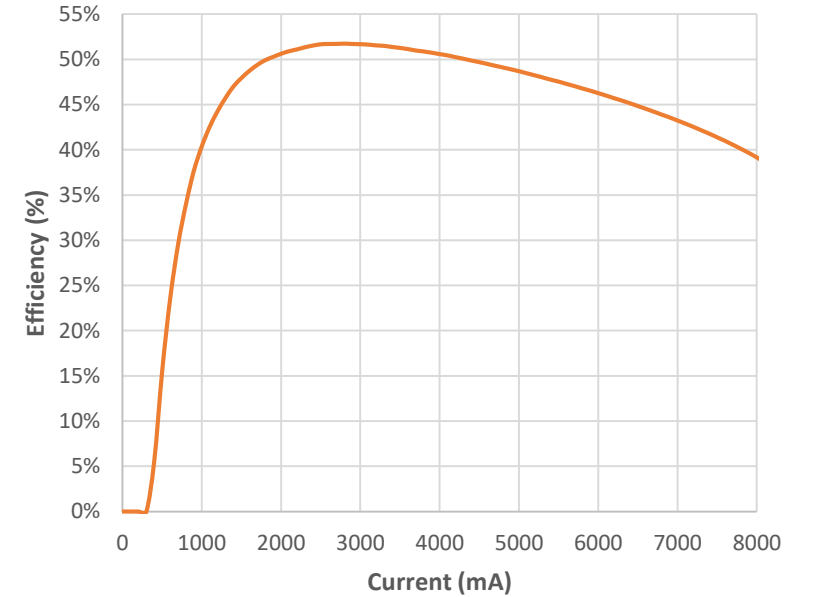
Die Specifications

Dimensions	1.0 mm x 0.90 mm x 0.10mm
Apertures	550
Aperture Size	10 μm
Emission Area	0.815mm x 0.796mm
Chip Technology	GaAs VCSEL

LIV Performance



Efficiency



Beam Profile

