

Preliminary Datasheet



InPHRED SA-E02 multi-mode VCSEL emits at 1,380 nm wavelength with multiple transverse emission modes. The single 7 μ m aperture offers 2~3mW output power at 25°C, power conversion efficiency (PCE) of ~27%, and is optimized for a broad range of high-volume consumer applications such as proximity and 3D sensing.

Electro-Optical Characteristics

All characteristics are specified at 25°C, continuous wave operation, unless otherwise noted.

Parameter	Symbol	Condition	Ratings			Unit
			Min	Typ	Max	
Threshold Current	I_{th}			0.7		mA
Wavelength coefficient	$d\lambda/dT$			0.1		nm/°C
Operating current (mode 1)	$I_{op1, 25^\circ C}$			2.0		mA
Operating power (mode 1)	$P_{op1, 25^\circ C}$	$I = I_{op1, 25^\circ C}$		0.6		mW
Operating voltage (mode 1)	$U_{op1, 25^\circ C}$	$I = I_{op1, 25^\circ C}$		1.3		V
PCE (mode 1)	$PCE_{op1, 25^\circ C}$	$I = I_{op1, 25^\circ C}$		24.4		%
Operating current (mode 2)	$I_{op2, 25^\circ C}$			3.5		mA
Operating power (mode 2)	$P_{op2, 25^\circ C}$	$I = I_{op2, 25^\circ C}$		1.4		mW
Operating voltage (mode 2)	$U_{op2, 25^\circ C}$	$I = I_{op2, 25^\circ C}$		1.4		V
PCE (mode 2)	$PCE_{op2, 25^\circ C}$	$I = I_{op2, 25^\circ C}$		27.0		%
Operating current (mode 3)	$I_{op3, 25^\circ C}$			5.0		mA
Operating power (mode 3)	$P_{op3, 25^\circ C}$	$I = I_{op3, 25^\circ C}$		2.1		mW
Operating voltage (mode 3)	$U_{op3, 25^\circ C}$	$I = I_{op3, 25^\circ C}$		1.6		V
PCE (mode 3)	$PCE_{op3, 25^\circ C}$	$I = I_{op3, 25^\circ C}$		26.4		%

Typical Performance Measurements

All measurements are representative of performance with continuous ramping operation.

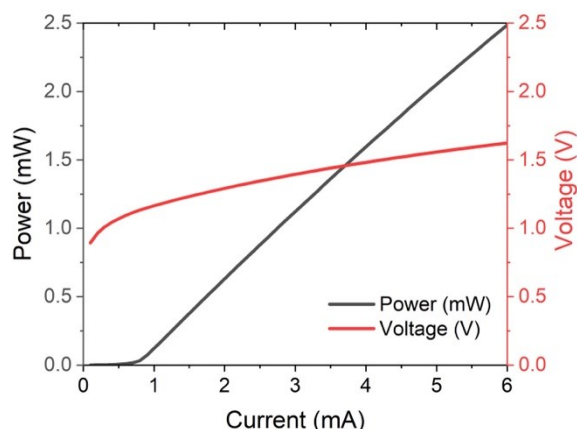


Figure 1. Light versus current (black) and voltage versus current (red) at 25°C.

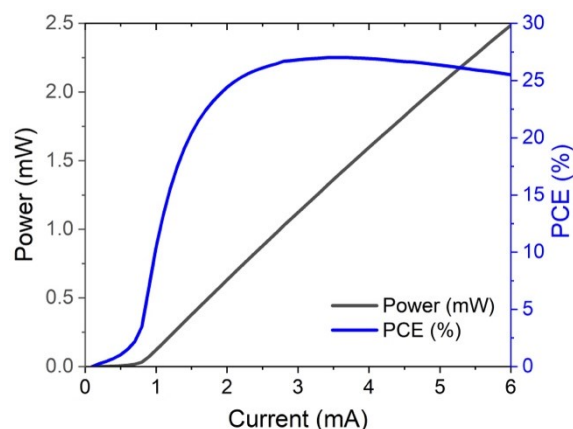


Figure 2. Light versus current (black) and PCE versus current (blue) at 25°C.