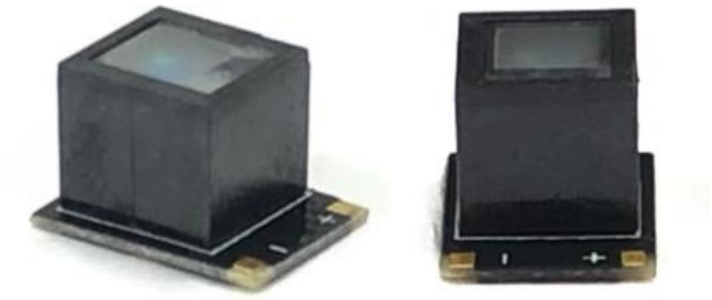
Structure Light Module

SLM-5048-S940-200-J10K-68-53

Description

The structure light module provided accurate and low distortion dot pattern of DOE with laser emitting technology. It can project 10k dots to long distance with low noise. The wavelength of structure light module is narrow under stable thermal condition (DFB laser). The module is designed for industrial device and PWM drivable.



Features

- **No distortion pattern**
- **High density random dots**
- **Long distance projection**
- **SMT package for industrial application**
- **Near-IR illumination (940nm)**
- **Narrow wavelength under stable thermal condition**
- **IEC 60825-1: CLASS 1 eye safety test**
- **PWM drivable**

Applications

- **Machine vision**
- **3D object distance measurement**
- **IR illumination**

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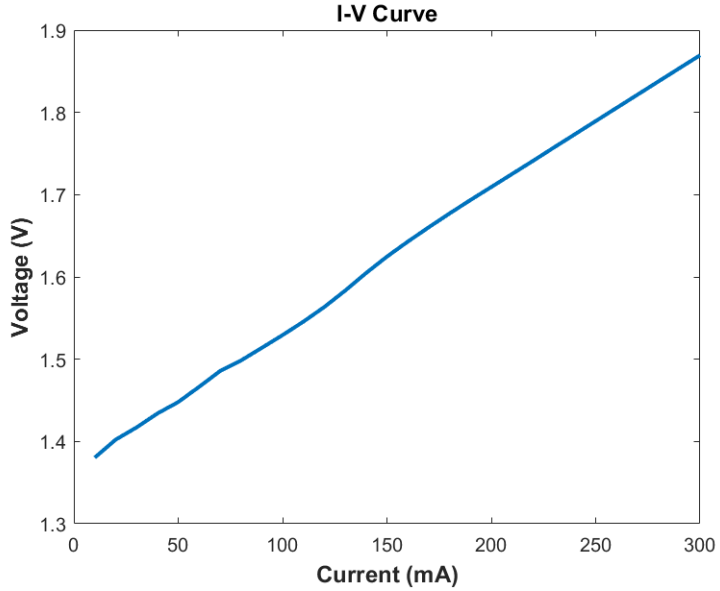
Absolute Maximum Rating

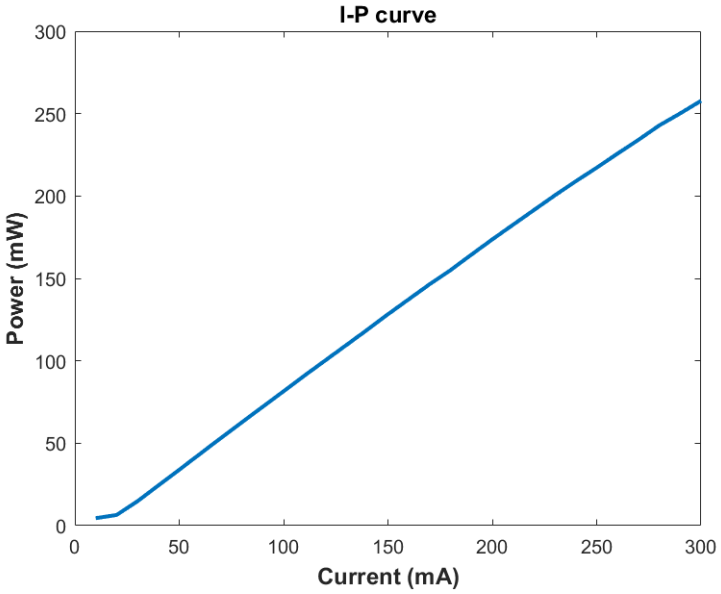
Parameters	Condition	min	typical	max	unit
Max. Operating current	Room 25℃, Chip 60℃, CW		250	290	mA
Max. Operating voltage	Room 25℃, Chip 60℃, CW	1.56	1.71	2.00	V

Electronical Characteristics (CW)

Parameters	Condition	min	typical	max	unit
Threshold current	Room 25℃, Chip 60℃		28	38	mA
Operating current	Room 25℃, Chip 60℃		250	290	mA
Operating voltage	Room 25℃, Chip 60℃	1.56	1.71	2.00	V
Convert efficiency	Room 25℃, Chip 60℃	33	48		%



Forward Voltage vs. Forward Current



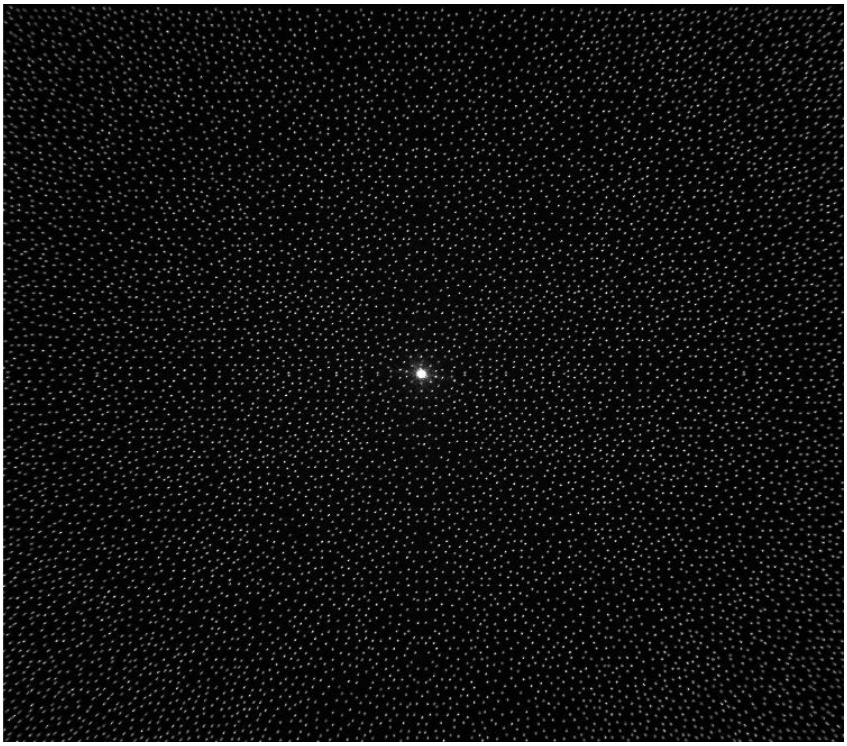
Output Power vs. Forward Current

Optical Characteristics

Parameters	Condition	min	typical	max	unit
Wavelength	25±3℃	936	938	940	nm
Working range	$P_{out,effective\ area}$=200mW	0.3	1	1.5	m
Horizontal FOV of projection	940nm, 25℃	66	68	70	deg
Vertical FOV of projection	940nm, 25℃	51	53	55	deg
Number of dots	@FOV		10,000		pc
Uniformity[1]		45	60	75	%
Diffraction efficiency	25℃		70	75	%
Laser compliance (Eye-safety regulation)	Class 1, IEC 60825-1:2014	@ 225mA current & 10% duty cycle.			

Notes:

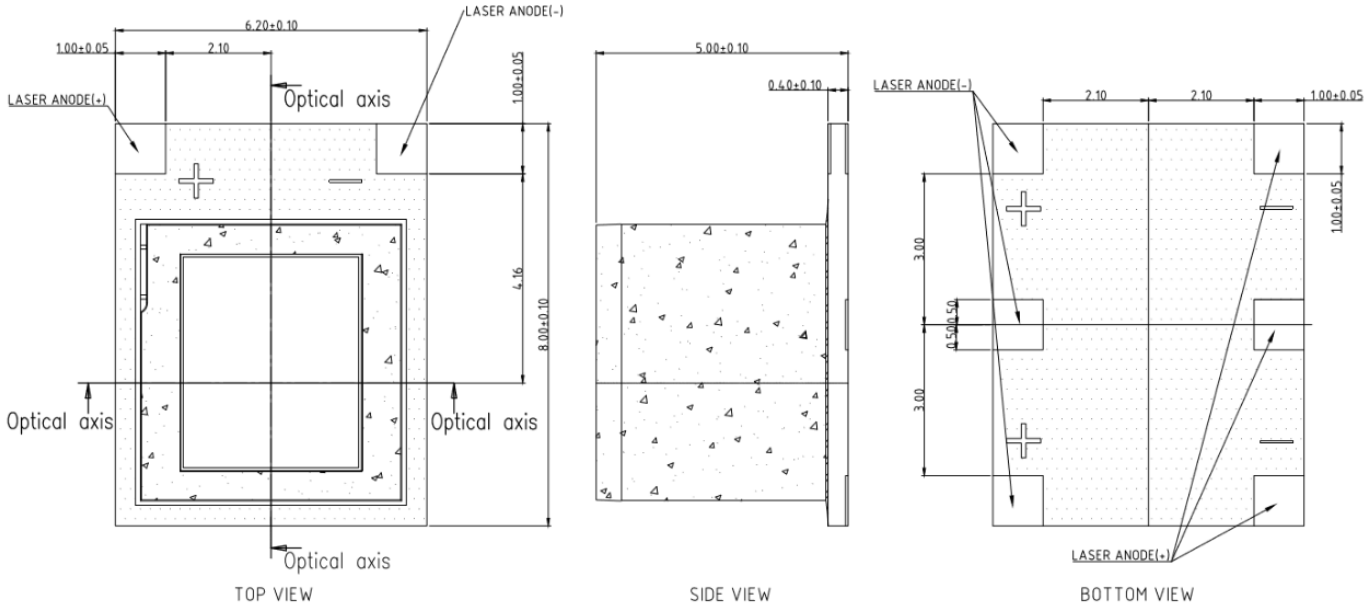
1. Uniformity is defined for a single module as $1 - (I_{max} - I_{min})/ (I_{max} + I_{min})$



Pattern @ 0.4M

Mechanical characteristics

2D Drawing



Cautions

1. **Wearing ESD protections device before handling the moulde.**
2. **Avoid to touch the emitting area or optical items of the module.**
3. **Never look into the light from emitting area directly.**

Disclaimer

1. **Semiconductor devices generally fail due to intrinsic characteristic so does EPIC module as it includes laser chip and laser diode TO-CAN(LD). Hence, customer's product has to be designed with full regard to the safety by incorporating the redundancy, fire prevention, error prevention therefore, any problem or error with EPIC module does not cause any accidents resulting in injury, death, fire, property damage, economic damage or environment damage. In case customer uses module in the system requiring higher safety, customer is responable to review the conditions for consistency of entire system and all safety concerns to meet the specific requirements. EPIC is not liable to the user for any losses, costs, damages or expenses incurred arising directly or indirectly from any misuse or unintended use of the product.**
2. **Accoding to the above is provided by EPIC who reserves the rights to modify, to insert, and/or to withdraw any part of the rules specified herein.**