

Data Sheet

VCSEL TOF3532 Module(6045)

940nm 3W B01

Dogain Optoelectronic Technology(Suzhou)Co.,Ltd

PN: DG-VP-A940-3WBS32
Rev. 1.0

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Note: Customers represent that they have all the necessary expertise to create and implement their own safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions.

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Product Introduction

Performance characteristics

- **High output power** : High power optical sensing device with 940nm VCSEL array
- **High efficiency, high reliability, high processability**
- **Low power consumption, high photoelectric conversion efficiency** : 45% Power Conversion Efficiency (PCE) at 25°C.
- **Stable wavelength, narrow spectral width**
- **Other wavelengths, chip dimensions, and emitter patterns are available according to customer request.**

Application

- **Face recognition, gesture recognition**
- **People flow statistics**
- **TOF**
- **Volumemeasurement, 3D scanning**
- **Avoidance**
- **AR/VR**
- **Infrared Uniform Lighting**

Electro-optical characteristics (50°C)

Parameters	Symbol	Min	Typical	Max	Units	Test Condition
Optical Output Power	P_{OP}	2.7	3	-	W	200us/5% @ $I_f = 3.5A$ 25°C
Threshold Current	I_{th}	0.3	0.55	0.85	A	200us/5% @ $I_f = 3.5A$ 25°C
Operating Current	I_{op}	-	3.5	-	A	200us/5% @ $I_f = 3.5A$ 25°C
Differential resistance	R_s	-	0.15	0.4	Ω	200us/5% @ $I_f = 3.5A$ 25°C
Operating Voltage	V_{op}	1.7	2	2.3	V	200us/5% @ $I_f = 3.5A$ 25°C
Slope Efficiency	η_s	0.8	1	-	W/A	200us/5% @ $I_f = 3.5A$ 25°C
Power Conversion Efficiency	PCE	-	45	-	%	200us/5% @ $I_f = 3.5A$ 25°C
Wavelength	λ_{peak}	932	940	948	nm	200us/5% @ $I_f = 3.5A$ 25°C
Spectral Width (RMS)	$\Delta\lambda$	-	-	2.5	nm	200us/5% @ $I_f = 3.5A$ 25°C
Beam Full Divergence H (D86)	φ	-	60	-	°	200us/5% @ $I_f = 3.5A$ 25°C
Beam Full Divergence V (D86)	φ	-	45	-	°	200us/5% @ $I_f = 3.5A$ 25°C
Wavelength coefficient	$d\lambda/dT$		0.07		nm/°C	200us/5% @ $I_f = 3.5A$ 25°C

* All tests are under pulse condition on 0.2ms, 5% D.C. at room temperature 25°C

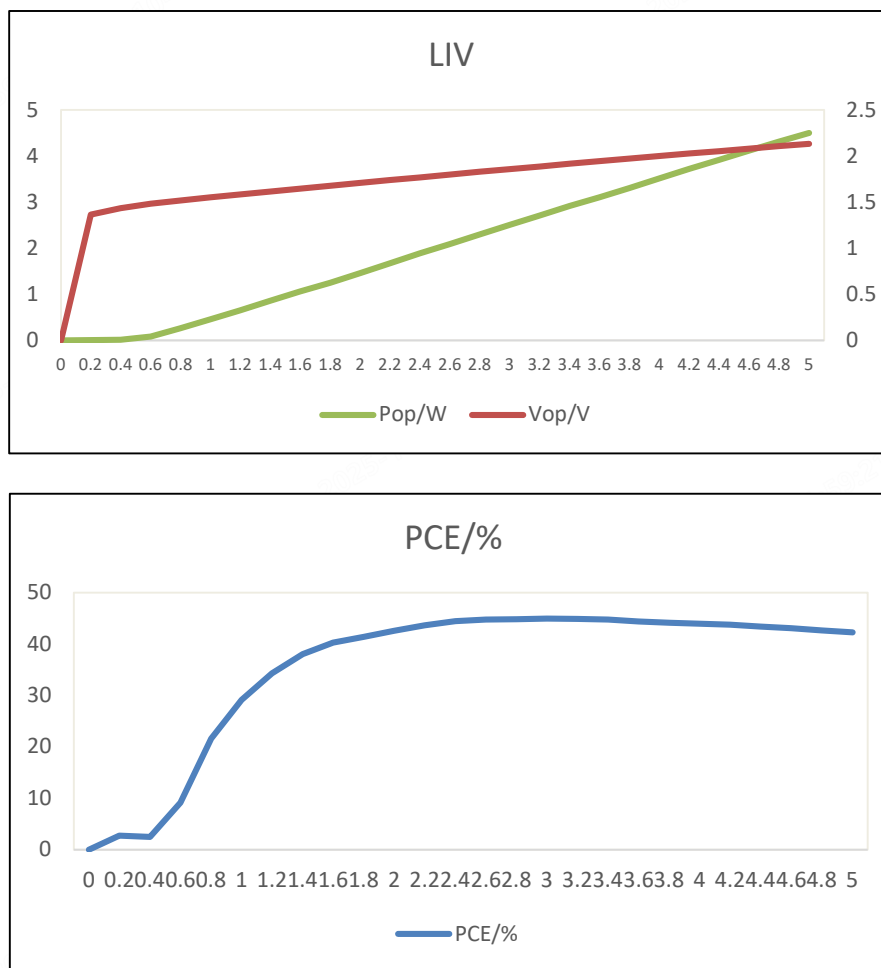
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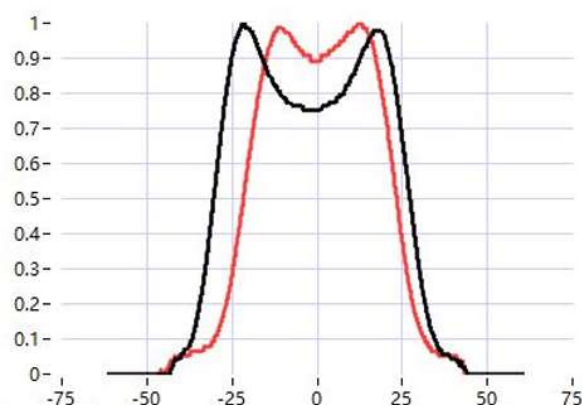
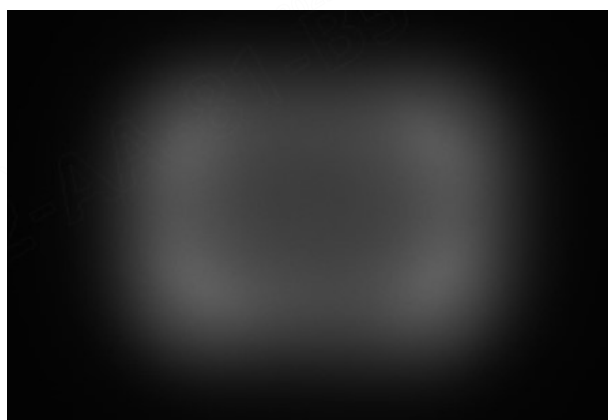
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Electro-optic conversion curve



* All tests are under pulse condition on 0.2ms, 5% D.C. at room temperature 25°C.

Far Field profile



Tested at 25°C in QCW mode($I_{op}=3.5A$, pulse width:0.2ms, pulse duty cycle:5%).

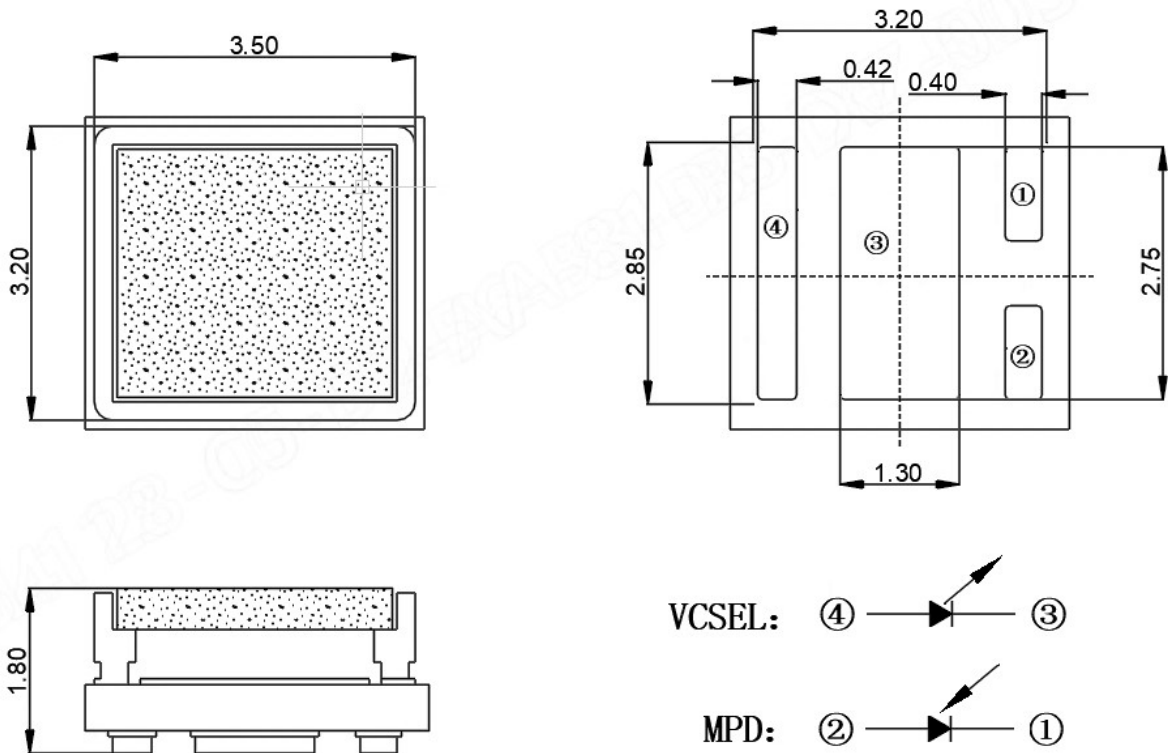
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Product appearance mechanical characteristics



Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Operating temperature	Top	-20	60	°C
Operating humidity	Hop	0	85	%
Storage temperature	Ts	-40	70	°C
Storage humidity	Hs	0	85	%

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Eye safety and disclaimer

Security recommendations

Depending on the usage of the device, the module may emit highly concentrated invisible infrared light that is harmful to the human eye. Products containing these modules may be required to follow the safety precautions specified in IEC 60850-1 and IEC62471.

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Note:

No responsibility is assumed for the use of these products. The products can emit Class I~IV radiation and must be operated with extreme care. Avoid directly viewing the laser beam or exposure to specular reflections. Proper eye wear must be worn at all times when operating. VCSEL Chip in the modules are electrostatic-sensitive device and proper ESD protection is required for handling.



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