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睿感RaySense系列芯片

Catalog of VCSEL chips for consumer electronics

类别		产品型号	波长 (nm)	功率 (mW)	PCE	发散角（D86）(°)	产品特点
距离传感芯片		VCA940R2	940	150	40%	24	可应用于接近传感、手机终端、工业测量、扫地机、无人机等
		VCA940R3	940	270	35%	24	
		VCA940R4	940	6.5	40%	28@1/e^2	
		VCA940R6	940	6.5	40%	22@1/e^2	
		VCA940R8 (3孔)	940	8.5	40%	22@1/e^2	
TOF芯片	标准产品	VCA940L3	940	2300	40%	21	高PCE、高功率 可应用于手机终端、VR/AR、红外照明、机器视觉、工业测量、IoT等
		VCA940K5	940	3000	42%	17	
	单边打线产品	VCA940L6	940	3000	41%	21	
		VCA940L7	940	2300	41%	21	
	高功率产品	VCA940K7	940	7300	37%	20	
	多结产品	VCC940L2-2J	940	3000	43%	24	效率更高 功率密度更大
		VCC940L4-2J	940	4600	43%	19	
		VAC940K1-3J	940	8400	48%	20	
		VAC905A1a-5J	905	30000	10%	20	
		VCC905G2-6J	905	5000	22%	22	
	850nm产品	VCA850K2	850	2750	40%	18	可应用于机器视觉、红外照明、工业测量、IoT等
	分区产品	VCC940T1	940	2080	37.5%	21	可应用于手机终端、VR/AR、红外照明、机器视觉等
		VCC940T2-3J	940	2450	33%	19	
3D结构光芯片	客户定制产品	VCA940F1	940	1600	38%	17	高PCE 高功率 高光斑质量 可应用于手机终端、闸机、支付、智能家居等
		VCA940Q1	940	1780	41%	18	
		VCA940Q3	940	1720	41%	19	
	公版结构光芯片	VCA940C2	940	950	45%	18	
		VCA940Q2	940	2100	43%	18	
		VCA850Q2	850	2050	40%	18	
线激光芯片		VCA850R4	850	200	42%	28	适合扫地机延边、避障及更多近距离传感应用的场景

*功率及PCE为在50℃，客户工作条件下的测试值

睿感RaySense系列模组

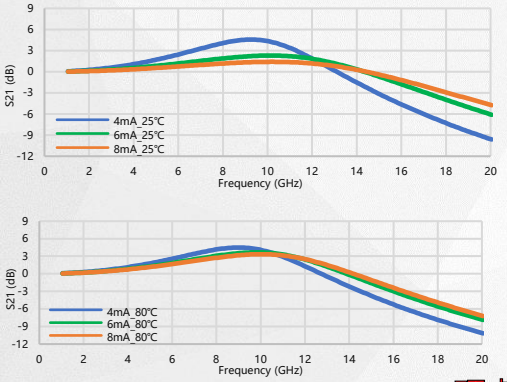
Catalog of module for consumer electronics

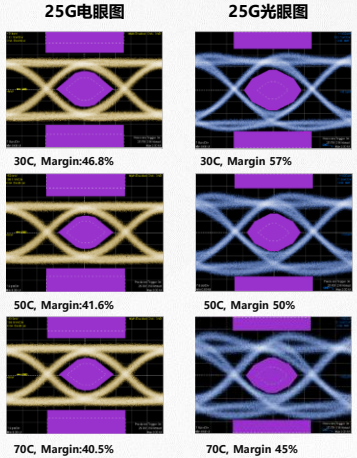
类型	产品型号	芯片型号	中心波长 (nm)	光功率 (mW)	PCE （%）	发散角度_θ1/2(X) (°)	发散角度_θ1/2(Y)(°)	产品特点
TOF模组	MTA2CA04	VCA940K5	940	2300	37	62	47	高亮度 高可靠性 视场角/模组尺寸可按需定制 可应用于人脸识别、手势识别、无人机、扫地机器人、疲劳驾驶检测、安保摄像头等
	MTA2GD02	VCA940K5	940	2200	37	73	59	
	MTA2GM02	VCA940K5	940	2100	37	102	113	
	MTA3GT02	VCA940K5	940	2700	37	98	74	
	MTA2GU02	VCA940K5	940	2200	37	115	55	
	MTA2GV01	VCA940K5	940	2200	37	88	70	
	MTA2GR01	VCA940K5	940	2200	37	80	70	
	MTA2CE01	VCA940K5	940	2200	36	109	100	
	MTA8GM01	VAC940K1	940	7500	41	113	99	
	MTB2GU01	VCA850K2	850	2000	35	55	115	
	MTB2GT01	VCA850K2	850	2050	35	98	74	
	MTB4CE01	VCA850K2	850	3900	35	110	100	
	MTB2GS02	VCA850K2	850	2050	35	28	118	
	MTB2GK02	VCA850K2	850	2050	34	111	22	
	MTB2GW01	VCA850K2	850	2100	36	40	30	
TWS模组	MPA0K001	VCA940R4	940	550uA(光电流)	/	/	/	可应用于手机、耳机、智能穿戴等
	MPA0S002	VCA940R8	940	8.1	/	/	/	
单点雷达模组	MRC5T001	VCC905G2	905	5000	22	22	22	可用于扫地机导航、AGV等工业机器人导航、避障、车载激光雷达、望远镜测距等
	MRCBT001	VAC905A1a	905	30000	10	20	20	
	MRCCT001	VAC905A6	905	70000	10	19	19	
结构光规模组	MSA2PR01	VCA940Q2	940	2000	36	77	71	高性能散斑投射器高性价比低成本散斑投射器视场角/模组尺寸/散斑点数可按需定制可应用于人脸识别、手势识别、机器人视觉等
	MSA2MQ02	VCA940Q2	940	1800	35	105	75	
	MSB2HN03	VCA850Q2	850	1750	33	105	75	
	MSB2QT01	VCA850Q2	850	1800	34	96	77	
线激光模组	MSB0RK01	VCA850R3	850	70		120°	（线宽）2mm	高光束质量，定制化光型分布 应用场景为扫地机避障、延边等
	MSB0RK04	VCA850R4	850	200		110°	（线宽）3mm	
	MSB0RK07	VCA850R4	850	200		130°	（线宽）3mm	

睿迅RayCom系列芯片

Chips for data communication

类别	产品名称	波长(nm)	产品特点
数通类	VDA850B1	10G VCSEL1*1	高良率，高一致性，高可靠性
	VDA850B2	10G VCSEL1*4	
	VDA850A1	25G VCSEL1*4	
	PDA850A1	25G PD 1*4	
	VDA850A2	25G VCSEL1*1	
	PDA850A2	25G PD 1*1	
	VDA850D1	56G PAM4 VCSEL1*4	
	PDA850C1	56G PAM4 PD1*4	





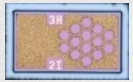
Link is OM3 1meter fiber

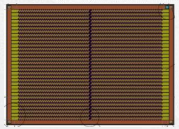
睿驰RayDrive系列芯片

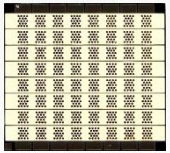
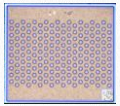
Custom chips for automotive

类别	类型	产品名称	波长(nm)	功率（W）	发光点数/阵列	PCE	发散角(°)	产品特点
智能驾驶系列	高功率单点雷达芯片	VAC905A6	905	50	14e	15%	20	功率密度可达3500W/mm²
	半固态阵列雷达芯片	VAC905A5	905	客户定制			16	
	全固态一维可寻址芯片	VAC905A3	905	客户定制				高重频（>1MHZ）、高功率、高可靠性
		VAC940A3	940	120	90 channels	21%	20	
		VAC940A7	940	客户定制			20	
	全固态二维可寻址芯片	VAC940A2	940	50	8×8units	11%	19	
智能座舱系列	车载TOF芯片	VAA940D1	940	4	640e	40%	24	车规级（AEC-Q）、支持TOF高功率、支持OMS补光大视场角
		VAC940K1	940	8.4	180e	48%	20	
	智能座舱投射灯	MAA3BC02	940	2.8	/	38%	72x58	
		MAA4DE01	940	3.6	/	37%	110x85	
		MAA4BZ01	940	4.15	/	30%	125x105	

部分产品图片






我们能够提供芯片定制产品服务以满足客户的需求，包括：

尺寸图

光功率

PCE

发散角

封装形式

等其他要求

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距离传感芯片

VCA940R2芯片规格

Chip specification of VCA940R2

产品说明和功能

多点940nm VCSEL
直流功率：150mW
发散角：24°

典型应用

接近传感、手机终端、工业测量、IoT等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.255 x 0.175x 0.100
Emitter Area		mm^2	0.083 x 0.085
Number of emitters		ea	12
Threshold Current	I_{th}	mA	20
Forward Bias Current	I_0	mA	180
Forward Voltage	V_0	V	2.2
Central Wavelength	λ_p	nm	940
FOV (D86)		°	24
Optical Power	P_o	mW	150
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width = 0.1ms, duty cycle = 10%, temperature on the backside of the chip: 50℃

距离传感芯片

VCA940R3芯片规格

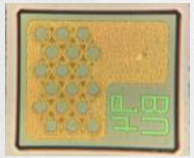
Chip specification of VCA940R3

产品说明和功能

多点940nm VCSEL
直流功率：270mW
发散角：24°

典型应用

接近传感、手机终端、工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.250 x 0.220x 0.100
Emitter Area		mm^2	0.063 x 0.109
Number of emitters		ea	18
Threshold Current	I_{th}	mA	20
Forward Bias Current	I_0	mA	330
Forward Voltage	V_0	V	2.4
Central Wavelength	λ_p	nm	940
FOV (D86)		°	24
Optical Power	P_o	mW	270
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	35

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width = 0.1ms, duty cycle = 10%, temperature on the backside of the chip: 50 ℃

距离传感芯片

VCA940R4芯片规格

Chip specification of VCA940R4

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.175 x 0.175x 0.100
Emitter Area		mm^2	0.080 x 0.080
Number of emitters		ea	1
Threshold Current	I_{th}	mA	1.8
Forward Bias Current	I_0	mA	9
Forward Voltage	V_0	V	1.8
Central Wavelength	λ_p	nm	940
FOV (1/e^2)		°	28
Optical Power	P_o	mW	6.5
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width =CW temperature on the backside of the chip: 50 ℃

产品说明和功能

单点940nm VCSEL
直流功率：6.5mW
发散角：28°

典型应用

可应用于接近传感、TWS、智能穿戴

距离传感芯片

VCA940R6芯片规格

Chip specification of VCA940R6

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.150 x 0.150x 0.100
Number of emitters		ea	1
Threshold Current	I_{th}	mA	2
Forward Bias Current	I_0	mA	9
Forward Voltage	V_0	V	1.8
Central Wavelength	λ_p	nm	940
FOV (1/e^2)		°	22
Optical Power	P_o	mW	6.5
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width = CW temperature on the backside of the chip: 50℃

产品说明和功能

单点940nm VCSEL
直流功率：6.5mW
发散角：22°

典型应用

可应用于接近传感、TWS、智能穿戴

距离传感芯片

VCA940R8芯片规格

Chip specification of VCA940R8

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.160 x 0.160x 0.100
Number of emitters		ea	3
Threshold Current	I_{th}	mA	1.5
Forward Bias Current	I_0	mA	10
Forward Voltage	V_0	V	1.8
Central Wavelength	λ_p	nm	940
FOV (1/e^2)		°	22
Optical Power	P_o	mW	8.5
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width = CW temperature on the backside of the chip: 50℃

产品说明和功能

单点940nm VCSEL
直流功率：8.5mW
发散角：20°

典型应用

可应用于接近传感、TWS、智能穿戴

VCA940L3芯片规格

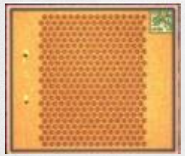
Chip specification of VCA940L3

产品说明和功能

规则阵列940nm VCSEL
功率：2.3W
PCE：40%

典型应用

手机终端、VR/AR、红外照明、机器视觉、
工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 790 x 0.690 x 0.100
Emitter Area		mm^2	0.470x 0.580
Number of Emitters			368
Threshold Current	I_{th}	mA	300
Forward Bias Current	I_0	mA	2100
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV （D86）		°	21
Optical Power	P_o	mW	2300
Uniformity		%	19
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50℃

TOF芯片

VCA940K5芯片规格

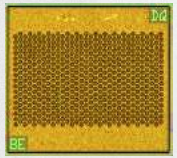
Chip specification of VCA940K5

产品说明和功能

规则阵列940nm VCSEL
功率：3W
PCE：42%

典型应用

手机终端、VR/AR、红外照明、机器视觉、
工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 880 x 0.980 x 0.100
Emitter Area		mm^2	0.515x 0.838
Number of Emitters			544
Threshold Current	I_{th}	mA	500
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	940
FOV （D86）		°	17
Optical Power	P_o	mW	3000
Uniformity		%	13
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	42

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50℃

TOF芯片

VCA940L6芯片规格

Chip specification of VCA940L6

产品说明和功能

规则阵列940nm VCSEL（单边打线）
功率：3W
PCE：41%

典型应用

手机终端、VR/AR、红外照明、机器视觉、
工业测量、IoT等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 900 x 0.790 x 0.100
Emitter Area		mm^2	0.676 x 0.657
Number of Emitters			504
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	940
FOV （D86）		°	21
Optical Power	P_o	mW	3000
Uniformity		%	<30
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	-
PCE	PCE	%	41

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50℃

TOF芯片

VCA940L7芯片规格

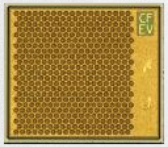
Chip specification of VCA940L7

产品说明和功能

规则阵列940nm VCSEL（单边打线）
功率：2.3W
PCE：41%

典型应用

手机终端、VR/AR、红外照明、机器视觉、
工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 785x 0.685x 0.100
Emitter Area		mm^2	0.561 x 0.577
Number of Emitters			437
Threshold Current	I_{th}	mA	500
Forward Bias Current	I_0	mA	2800
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	940
FOV （D86）		°	21
Optical Power	P_o	mW	2300
Uniformity		%	<30
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	1
PCE	PCE	%	41

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50℃

TOF芯片

VCA940K7芯片规格

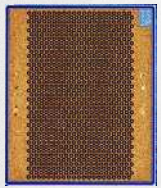
Chip specification of VCA940K7

产品说明和功能

规则阵列940nm VCSEL
功率：7.3W
PCE：37%

典型应用

大功率红外照明、大功率工业测量、
VR/AR、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 985 x 1.185x 0.100
Emitter Area		mm^2	0.664 x 1.066
Number of Emitters			819
Threshold Current	I_{th}	mA	750
Forward Bias Current	I_0	mA	9000
Forward Voltage	V_0	V	2.2
Central Wavelength	λ_p	nm	940
FOV （D86）		°	20
Optical Power	P_o	mW	7300
Uniformity		%	20
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulse width=0.1ms,duty cycle=1%, temperature on the backside of the chip=50℃

TOF芯片-多结产品

VCC940L2芯片规格

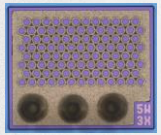
Chip specification of VCC940L2

产品说明和功能

规则阵列940nm VCSEL
功率：3.0W
PCE：35%

典型应用

手机终端、VR/AR、红外照明、机器视觉、
工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 448 x 0.382x 0.100
Threshold Current	I_{th}	mA	100
Forward Bias Current	I_0	mA	1700
Forward Voltage	V_0	V	4.1
Central Wavelength	λ_p	nm	940
FOV （D86）		°	24
Optical Power	P_o	mW	3000
Uniformity		%	/
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	1.9
PCE	PCE	%	43

Tested under the following conditions: at suggested bias current, pulse width=50ns duty cycle=1%, temperature on the backside of the chip=50℃

TOF芯片-多结产品

VCC940L4芯片规格

Chip specification of VCC940L4

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 79 x 0.69x 0.100
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2800
Forward Voltage	V_0	V	3.8
Central Wavelength	λ_p	nm	940
FOV （D86）		°	19
Optical Power	P_o	mW	4600
Uniformity		%	/
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	1.9
PCE	PCE	%	43

Tested under the following conditions: at suggested bias current, pulse width=50ns duty cycle=1%, temperature on the backside of the chip=50℃

产品说明和功能

规则阵列940nm VCSEL
功率：5W
PCE：43%

典型应用

手机终端、VR/AR、机器视觉、工业测量、IoT等

TOF芯片-多结产品

VAC940K1芯片规格

Chip specification of VAC940K1

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 98 x 0.88x 0.100
Threshold Current	I_{th}	mA	550
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	5
Central Wavelength	λ_p	nm	940
FOV （D86）		°	20
Optical Power	P_o	mW	8400
Uniformity		%	/
Dead Emitter		%	1
SE	η_{SE}	mW/mA	2.95
PCE	PCE	%	48

Tested under the following conditions: at suggested bias current, pulse width=50ns duty cycle=1%, temperature on the backside of the chip=50℃

产品说明和功能

规则阵列940nm VCSEL
功率：8W
PCE：48%

典型应用

手机终端、VR/AR、机器视觉、工业测量、IoT等

TOF芯片-多结产品

VAC905A1a芯片规格

Chip specification of VAC905A1a

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.250x 0.465x 0.100
Emitter Area		mm^2	0.1x 0.1
Number of Emitters		ea	7
Threshold Current	I_{th}	mA	40
Forward Voltage	V_0	V	40
Central Wavelength	λ_p	nm	905
Divergence	Θ	°	20
Optical Power	P_o	mW	30000
SE	η_{SE}	mW/mA	4.7
PCE	PCE	%	10

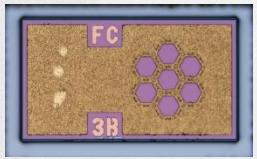
Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 25℃

产品说明和功能

905nm VCSEL
功率：30W
PCE：10%

典型应用

单线激光雷达、单点测距等



TOF芯片-多结产品

VCC905G2 芯片规格

Chip specification of VCC905G2

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 263x 0.196x 0.100
Emitter Area		mm^2	0.05*0.05
Number of Emitters		ea	1
Forward Bias Current	I_0	mA	1000
Forward Voltage	V_0	V	22.5
Central Wavelength	λ_p	nm	905
Divergence	Θ	°	22
Optical Power	P_o	mW	5000
PCE	PCE	%	22

Tested under the following conditions: at suggested bias current=6.8A, pulsed width=3ns with duty cycle = 0.02%, temperature on the solder pad: 50℃

产品说明和功能

905nm VCSEL
功率：30W
PCE：10%

典型应用

单线激光雷达等

TOF芯片

VCA850K2芯片规格

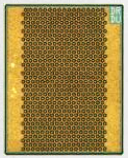
Chip specification of VCA850K2

产品说明和功能

规则阵列850nm VCSEL
功率：2.75W
PCE：40%

典型应用

机器视觉、红外照明、工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 841 x 1.017 x 0.100
Emitter Area		mm^2	0.544x 0.915
Number of Emitters			595
Threshold Current	I_{th}	mA	700
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV （D86）		°	18
Optical Power	P_o	mW	2750
Uniformity		%	14
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50 ℃

VCC940T1芯片规格

Chip specification of VCC940T1

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 854 x 1.072 x 0.100
Emitter Area		mm^2	0.588x 0.413
Number of Emitters			64
Threshold Current	I_{th}	mA	25
Forward Bias Current	I_0	mA	840
Forward Voltage	V_0	V	6.6
Central Wavelength	λ_p	nm	940
FOV （D86）		°	21
Optical Power	P_o	mW	2080
Uniformity		%	10
Dead Emitter		%	0
SE	η_{SE}	mW/mA	2.7
PCE	PCE	%	37.5

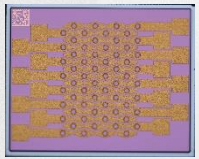
Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=50℃

产品说明和功能

规则阵列940nm VCSEL
功率：2.08
PCE：37.5%

典型应用

机器视觉、红外照明、工业测量、IoT等



DTOF芯片

VCC940T2芯片规格

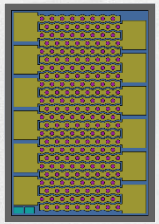
Chip specification of VCC940T2

产品说明和功能

规则阵列940nm VCSEL
功率：单点150mW、单区2.45W
PCE：33%
共阳极设计

典型应用

手机后置、机器视觉等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0. 906 x 0.622 x 0.100
Emitter Area		mm^2	0.793x 0.326
Number of Emitters			16
Threshold Current	I_{th}	mA	32
Forward Bias Current	I_0	mA	850
Forward Voltage	V_0	V	8.7
Central Wavelength	λ_p	nm	940
FOV （D86）		°	19
Optical Power	P_o	mW	2450
Uniformity		%	10
Dead Emitter		%	0
SE	η_{SE}	mW/mA	2.9
PCE	PCE	%	33

Tested under the following conditions: at suggested bias current, pulse width=5ns, duty cycle=10%, temperature on the backside of the chip=60℃

3D结构光芯片(客户定制产品)

VCA940F1芯片规格

Chip specification of VCA940F1

产品说明和功能

非规则阵列940nm VCSEL
功率：1.6W
PCE：38%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等

**The emitter area is obscured to protection of intellectual property rights*

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.772 x 0.606 x 0.100
Emitter Area		mm^2	0.506 x 0.411
Number of Emitters			371
Threshold Current	I_{th}	mA	300
Forward Bias Current	I_0	mA	2000
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV （D86）		°	17
Optical Power	P_o	mW	1600
Uniformity		%	15
Dead Emitter		each	<2
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	38

Tested under the following conditions: at suggested bias current, pulse width=0.1ms,duty cycle=1%, temperature on the backside of the chip=50℃

3D结构光芯片(客户定制产品)

VCA940Q1芯片规格

Chip specification of VCA940Q1

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.778x 0.918x 0.100
Emitter Area		mm^2	0.570 x 0.575
Number of Emitters			200
Threshold Current	I_{th}	mA	300
Forward Bias Current	I_0	mA	2100
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	940
FOV （D86）		°	18
Optical Power	P_o	mW	1780
Uniformity		%	7.5
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	41

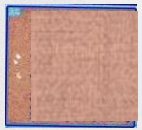
Tested under the following conditions: at suggested bias current, pulse width=3ms, duty cycle=10%, temperature on the backside of the chip=50℃

产品说明和功能

非规则阵列940nm VCSEL
功率：1.78W
PCE：41%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等



*The emitter area is obscured to protection of intellectual property rights

3D结构光芯片(客户定制产品)

VCA940Q3芯片规格

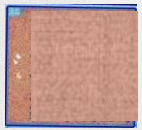
Chip specification of VCA940Q3

产品说明和功能

非规则阵列940nm VCSEL
功率：1.72W
PCE：41%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等



*The emitter area is obscured to protection of intellectual property rights

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.608x 0.764x 0.100
Emitter Area		mm^2	0.506x 0.462
Number of Emitters			205
Threshold Current	I_{th}	mA	200
Forward Bias Current	I_0	mA	2000
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV （D86）		°	19
Optical Power	P_o	mW	1720
Uniformity		%	18
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	41

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=10%, temperature on the backside of the chip=60℃

3D结构光芯片

VCA940C2芯片规格

Chip specification of VCA940C2

产品说明和功能

非规则阵列940nm VCSEL
功率：0.95W
PCE：45%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.520 x 0.562 x 0.100
Emitter Area		mm^2	0.422x 0.364
Number of Emitters			212
Threshold Current	I_{th}	mA	140
Forward Bias Current	I_0	mA	1100
Forward Voltage	V_0	V	1.9
Central Wavelength	λ_p	nm	950
FOV （D86）		°	18
Optical Power	P_o	mW	950
Uniformity		%	15
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	1
PCE	PCE	%	45

Tested under the following conditions: at suggested bias current, pulse width=1ms,duty cycle=3%, temperature on the backside of the chip=60℃

3D结构光芯片

VCA940Q2芯片规格

Chip specification of VCA940Q2

产品说明和功能

非规则阵列940nm VCSEL
功率：2.1W
PCE：43%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.735 x 0.796x 0.100
Emitter Area		mm^2	0.612 x 0.568
Number of Emitters			361
Threshold Current	I_{th}	mA	300
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	1.95
Central Wavelength	λ_p	nm	940
FOV （D86）		°	18
Optical Power	P_o	mW	2100
Uniformity		%	12
Dead Emitter		%	<1
SE	η_{SE}	mW/mA	0.95
PCE	PCE	%	43

Tested under the following conditions: at suggested bias current, pulse width=1ms, duty cycle=3%, temperature on the backside of the chip=60℃

3D结构光芯片

VCA850Q2芯片规格

Chip specification of VCA850Q2

产品说明和功能

非规则阵列850nm VCSEL
功率：2.05W
PCE：40%
可定制pattern开发

典型应用

手机终端、闸机、支付、智能家居等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.735 x 0.796x 0.100
Emitter Area		mm^2	0.612 x 0.568
Element Count		ea	361
Threshold Current	I_{th}	mA	380
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	850
FOV （D86）		°	18
Optical Power	P_o	mW	2050
Uniformity		%	13
Dead Emitter			<2
SE	η_{SE}	mW/mA	0.97
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulse width=3ms, duty cycle=10%, temperature on the backside of the chip=50℃

线激光芯片

VCA850R4芯片规格

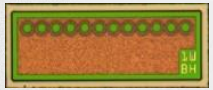
Chip specification of VCA850R4

产品说明和功能

850nm VCSEL
直流功率：200mW
发散角：21°

典型应用

接近传感、工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		Mm^3	0.568x 0.223x 0.100
Number of emitters		ea	12
Threshold Current	I_{th}	mA	43
Forward Bias Current	I_0	mA	230
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	850
FOV （$1/e^2$）		°	28
Optical Power	P_o	mW	200
SE	η_{SE}	mW/mA	1.1
PCE	PCE	%	42

Tested under the following conditions: at suggested bias current, pulsed operation with pulse width =CW temperature on the backside of the chip: 25℃

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MTA2CA04模组规格

Module specification of MTA2CA04

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.6
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	62x47
Optical Power	P_o	mW	2300
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulse width=0.5ms, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTA2GD02模组规格

Module specification of MTA2GD02

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	73x59
Optical Power	P_o	mW	2200
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulse width=0.5ms ,pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTA2GM02模组规格

Module specification of MTA2GM02

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	102x113
Optical Power	P_o	mW	2100
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTA3GT02模组规格

Module specification of MTA3GT02

产品说明和功能

940nm TOF投射灯，3W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV		°	98*74
Optical Power	P_o	mW	2700
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTA2GU02模组规格

Module specification of MTA2GU02

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	115*55
Optical Power	P_o	mW	2200
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTA2GV01模组规格

Module specification of MTA2GV01

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	88*70
Optical Power	P_o	mW	2200
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTA2GR01模组规格

Module specification of MTA2GR01

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	80*70
Optical Power	P_o	mW	2200
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTA2CE01模组规格

Module specification of MTA2CE01

产品说明和功能

940nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.55
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV		°	109x100
Optical Power	P_o	mW	2200
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	36

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTA8GM01模组规格

Module specification of MTA8GM01

产品说明和功能

940nm TOF投射灯，8W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、扫地机器人、疲劳驾驶检测等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	440
Forward Bias Current	I_0	mA	3500
Forward Voltage	V_0	V	5
Central Wavelength	λ_p	nm	940
FOV		°	113x99
Optical Power	P_o	mW	7500
SE	η_{SE}	mW/mA	2.6
PCE	PCE	%	41

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTB2GU01模组规格

Module specification of MTB2GU01

产品说明和功能

850nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	800
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV		°	55x115
Optical Power	P_o	mW	2000
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	35

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTB2GT01模组规格

Module specification of MTB2GT01

产品说明和功能

850nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	850
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV		°	98x74
Optical Power	P_o	mW	2050
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	35

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTB4CE01模组规格

Module specification of MTA2CE01

产品说明和功能

850nm TOF投射灯，4W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.45
Threshold Current	I_{th}	mA	850
Forward Bias Current	I_0	mA	5000
Forward Voltage	V_0	V	2.2
Central Wavelength	λ_p	nm	940
FOV		°	110x100
Optical Power	P_o	mW	3900
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	35

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTB2GS02模组规格

Module specification of MTB2GS02

产品说明和功能

850nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.45
Threshold Current	I_{th}	mA	850
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV		°	28x118
Optical Power	P_o	mW	2050
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	35

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MTB2GK02模组规格

Module specification of MTB2GK02

产品说明和功能

850nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	850
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV		°	111×22
Optical Power	P_o	mW	2050
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	34

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

TOF模组

MTB2GW01模组规格

Module specification of MTB2GW01

产品说明和功能

850nm TOF投射灯，2W
高亮度、高可靠性
视场角/模组尺寸可按需定制

典型应用

可应用于人脸识别、手势识别、无人机、
扫地机器人、疲劳驾驶检测、安保摄像头等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.5x 3.2x 1.4
Threshold Current	I_{th}	mA	850
Forward Bias Current	I_0	mA	2900
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	850
FOV		°	40×30
Optical Power	P_o	mW	2100
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	36

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MPA0K001模组规格

Module specification of MPA0K001

产品说明和功能

940nm TWS投射灯
视场角/模组尺寸可按需定制

典型应用

可应用近距传感、耳机等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	1.98x 1.58x 0.75
Threshold Current	I_{th}	mA	1.8
Forward Bias Current	I_0	mA	9
Forward Voltage	V_0	V	1.9
Central Wavelength	λ_p	nm	940
FOV		°	21
Optical Power	P_o	mW	550uA(光电流)
SE	η_{SE}	mW/mA	/
PCE	PCE	%	/

Tested under the following conditions: at suggested bias current,on the solder pad: 25℃

接近传感模组

MPA0S002模组规格

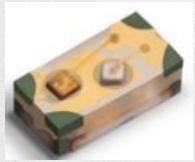
Module specification of MPA0S002

产品说明和功能

940nm TWS投射灯，2W
视场角/模组尺寸可按需定制

典型应用

可应用近距传感、耳机等



Parameter	Symbol	Unit	Typical
Module Size		mm^3	1.0x 0.5x 0.35
Threshold Current	I_{th}	mA	1.6
Forward Bias Current	I_0	mA	10
Forward Voltage	V_0	V	2.0
Central Wavelength	λ_p	nm	940
FOV		°	23
Optical Power	P_o	mW	8.1
SE	η_{SE}	mW/mA	1.0
PCE	PCE	%	41

Tested under the following conditions: at suggested bias current,on the solder pad: 25℃

单点DTOF模组

MRC5T001模组规格

Module specification of MRC5T001

产品说明和功能

905nm dtof投射灯，5W
视场角/模组尺寸可按需定制

典型应用

可应用扫地机雷达、工业小车雷达等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.0x 3.0x 0.6
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	1000
Forward Voltage	V_0	V	22.5
Central Wavelength	λ_p	nm	905
FOV		°	22
Optical Power	P_o	mW	5000
SE	η_{SE}	mW/mA	/
PCE	PCE	%	22

Tested under the following conditions: at suggested bias current,on the solder pad: 25℃

单点DTOF模组

MRCBT001模组规格
Module specification of MRCBT001

产品说明和功能

905nm dtof投射灯，30W
视场角/模组尺寸可按需定制

典型应用

可应用车载激光雷达、工业小车导航雷达、望远镜测距等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.0x 3.0x 0.6
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	6500
Forward Voltage	V_0	V	40
Central Wavelength	λ_p	nm	905
FOV		°	20
Optical Power	P_o	mW	30000
SE	η_{SE}	mW/mA	4.7
PCE	PCE	%	10

Tested under the following conditions: at suggested bias current,on the solder pad: 25℃

单点DTOF模组

MRCCT001模组规格
Module specification of MRCCT001

产品说明和功能

905nm dtof投射灯，50W
视场角/模组尺寸可按需定制

典型应用

可应用车载激光雷达、工业小车导航雷达、望远镜测距等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.0x 3.0x 0.6
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	13500
Forward Voltage	V_0	V	43
Central Wavelength	λ_p	nm	905
FOV		°	19
Optical Power	P_o	mW	70000
SE	η_{SE}	mW/mA	/
PCE	PCE	%	10

Tested under the following conditions: at suggested bias current,on the solder pad: 25℃

MSA2PR01模组规格

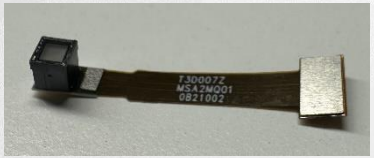
Module specification of MSA2PR01

产品说明和功能

940nm 结构光投射灯，2W
高亮度、高可靠性

典型应用

可应用于人脸识别、手势识别、扫地机器人等



Parameter	Symbol	Unit	Typical
Module Size		mm^3	FPC
Threshold Current	I_{th}	mA	350
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	2.2
Central Wavelength	λ_p	nm	940
FOV		°	77×71
Optical Power	P_o	mW	2000
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	36
Number of Dots			20K

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MSA2MQ02模组规格

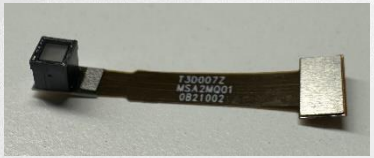
Module specification of MSA2MQ02

产品说明和功能

940nm 结构光投射灯，2W
高亮度、高可靠性

典型应用

可应用于人脸识别、手势识别、扫地机器人等



Parameter	Symbol	Unit	Typical
Module Size		mm^3	FPC
Threshold Current	I_{th}	mA	300
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	2.05
Central Wavelength	λ_p	nm	940
FOV		°	105×75
Optical Power	P_o	mW	1800
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	35
Number of Dots			27.8K

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

结构光模组

MSB2HN03模组规格

Module specification of MSB2HN03

产品说明和功能

940nm 结构光投射灯，2W
高亮度、高可靠性

典型应用

可应用于人脸识别、手势识别、扫地机器人等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	3.45x 3.45x 3.65
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	850
FOV		°	105×75
Optical Power	P_o	mW	1750
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	33
Number of Dots			12.6K

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

MSB2QT01模组规格

Module specification of MSB2QT01

产品说明和功能

940nm 结构光投射灯，2W
高亮度、高可靠性

典型应用

可应用于人脸识别、手势识别、扫地机器人等

Parameter	Symbol	Unit	Typical
Module Size		mm^3	4.0x 4.0x 4.84
Threshold Current	I_{th}	mA	400
Forward Bias Current	I_0	mA	2500
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
FOV		°	96×77
Optical Power	P_o	mW	1800
SE	η_{SE}	mW/mA	0.85
PCE	PCE	%	34
Number of Dots			22.7K

Tested under the following conditions: at suggested bias current, pulsed operation with duty cycle = 1%, temperature on the solder pad: 25℃

线结构光模组

MSB0RK01模组规格

Module specification of MSB0RK01

Parameter	Symbol	Unit	Typical
Module Size		mm^3	5.4*5.4*7.15
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	80
Forward Voltage	V_0	V	2.2
Central Wavelength	λ_p	nm	850
FOV		°	120
Optical Power	P_o	mW	70
Peak-center-ratio	-	-	1.5：1

产品说明和功能

850nm 线结构光投射灯
高性价比、高可靠性

典型应用

可应用于扫地机器人、服务机器人等

线结构光模组

MSB0RK04模组规格

Module specification of MSB0RK04

Parameter	Symbol	Unit	Typical
Module Size		mm^3	5.4*5.4*7.15
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	230
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	850
FOV		°	110
Optical Power	P_o	mW	200
Peak-center-ratio	-	-	0.5：1

产品说明和功能

850nm 线结构光投射灯
高性价比、高可靠性

典型应用

可应用于扫地机器人、服务机器人等

线结构光模组

MSB0RK07模组规格

Module specification of MSB0RK07

Parameter	Symbol	Unit	Typical
Module Size		mm^3	5.4*5.4*7.15
Threshold Current	I_{th}	mA	/
Forward Bias Current	I_0	mA	230
Forward Voltage	V_0	V	2.3
Central Wavelength	λ_p	nm	850
FOV		°	130
Optical Power	P_o	mW	200
Peak-center-ratio	-	-	1.2：1

产品说明和功能

850nm 线结构光投射灯
高性价比、高可靠性

典型应用

可应用于扫地机器人、服务机器人等

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VDA850B1芯片规格

Specification for 10Gb/s VCSEL

产品说明和功能

850nm 10G VCSEL
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.235x0.245x0.150
Threshold Current	I_{th}	T=25° C T=85° C	mA	0.7 0.85
Slope Efficiency	η_{SE}	T=25° C T=85° C	mW/mA	0.46 0.36
Output Power	P_{out}	Iop=6mA, T=25° C Iop=6mA, T=85° C	mW	2.4 1.8
Operating Voltage	V_{op}		V	2.0
Differential Resistance	R_d		Ω	65
Emission Wavelength	λ		nm	850
Spectral Width, RMS	Δλ		nm	< 0.45
Beam Divergence	Θ	Full width 1/e2	°	25
Modulation Bandwidth	f_{3dB}	Iop=6mA, T=25° C Iop=6mA, T=85° C	GHz	> 10 > 9

T=25℃ unless otherwise noted

VDA850B2芯片规格

Specification for 10Gb/s VCSEL Array

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.985x0.245x0.150
Threshold Current	I_{th}	T=25° C T=85° C	mA	0.7 0.85
Slope Efficiency	η_{SE}	T=25° C IT=85° C	mW/mA	0.46 0.36
Output Power	P_{out}	Iop=6mA, T=25° C Iop=6mA, T=85° C	mW	2.4 1.8
Operating Voltage	V_{op}		V	2.0
Differential Resistance	R_d		Ω	65
Emission Wavelength	λ		nm	850
Spectral Width, RMS	Δλ		nm	< 0.45
Beam Divergence	Θ	Full width 1/e2	°	25
Modulation Bandwidth	f_{3dB}	Iop=6mA, T=25° C Iop=6mA, T=85° C	GHz	> 10 > 9

T=25℃ unless otherwise noted

产品说明和功能

850nm 10G VCSEL
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

VDA850A1芯片规格

Specification for 25Gb/s VCSEL Array

产品说明和功能

850nm 25G VCSEL
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.985×0.245x0.150
Threshold Current	I_{th}	T=25° C	mA	0.7
Slope Efficiency	η_{SE}	$I= I_{th}$+1mA, T=25° C $I= I_{th}$+1mA, T=85° C	mW/mA	0.6 0.45
Output Power	P_{out}	I_{op}=6mA, T=25° C I_{op}=8mA, T=80° C	mW	3.1 2.3
Operating Voltage	U_{op}		V	2.1
Differential Resistance	R_d		Ω	75
Emission Wavelength	λ		nm	850
Spectral Width, RMS	Δλ		nm	0.4
Beam Divergence	Θ	I_{op}=6 mA, Full width 1/e^2	°	25
Modulation Bandwidth	f_{3dB}	I_{op}=6mA, T=25° C I_{op}=6mA, T=85° C	GHz	16 15
Threshold Uniformity	ΔI_{th}	Range across 1x4 array chips	mA	<0.1
Slope Efficiency Uniformity	$\Delta\eta$		mW/mA	<0.05

T=25℃ unless otherwise noted

PDA850A1芯片规格

Specification for 25Gb/s PD Array

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.985×0.245x0.150
Aperture diameter	d		um	40
Wavelength	λ		nm	850
Responsivity	R		A/W	0.5
Resistance	Rd		Ω	20
Dark current	I_d	V_{op}=-2.4 V	nA	2
Breakdown voltage	V_{BD}		V	-50
Capacitance	C	V_{op}=-2.4 V	fF	150
3dB-bandwidth	f_{3dB}	V_{op}=-2.4 V	GHz	18
Responsivity uniformity	ΔR	Range across 1x4 array chips	%	10

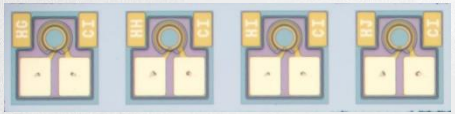
T=25℃ unless otherwise noted

产品说明和功能

850nm 25G PD
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等



VDA850A2芯片规格

Specification for 25Gb/s VCSEL

产品说明和功能

850nm 25G VCSEL
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.235×0.245×0.150
Threshold Current	I_{th}	T=25° C	mA	0.7
Slope Efficiency	η_{SE}	I= I_{th}+1mA, T=25° C I= I_{th}+1mA, T=85° C	mW/mA	0.6 0.45
Output Power	P_{out}	I_{op}=6mA, T=25° C I_{op}=8mA, T=80° C	mW	3.1 2.3
Operating Voltage	U_{op}		V	2.1
Differential Resistance	R_d		Ω	75
Emission Wavelength	λ		nm	850
Spectral Width, RMS	Δλ		nm	0.4
Beam Divergence	Θ	I_{op}=6 mA, Full width 1/e^2	°	25
Modulation Bandwidth	f_{3dB}	I_{op}=6mA, T=25° C I_{op}=6mA, T=85° C	GHz	16 15

T=25℃ unless otherwise noted

PDA850A2芯片规格

Specification for 25Gb/s PD

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.985×0.245x0.150
Aperture diameter	d		um	40
Wavelength	λ		nm	850
Responsivity	R		A/W	0.6
Resistance	Rd		Ω	10
Dark current	I_d	V_{op}=-2.4 V	pA	100
Breakdown voltage	V_{BD}		V	-50
Capacitance	C	V_{op}=-2.4 V	fF	120
3dB-bandwidth	f_{3dB}	V_{op}=-2.4 V	GHz	18

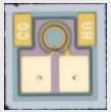
T=25℃ unless otherwise noted

产品说明和功能

850nm 25G PD
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等



VDA850D1芯片规格

50Gbps PAM-4 850nm VCSEL Array

产品说明和功能

850nm 56G PAM-4 VCSEL
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	0.985×0.245x0.150
Threshold Current	I_{th}	T=25° C	mA	0.6
Slope Efficiency	η_{SE}	I= I_{th}+1mA, T=25° C I= I_{th}+1mA, T=85° C	mW/mA	0.6 0.5
Output Power	P_{out}	I_{op}=7mA, T=25° C I_{op}=7mA, T=85° C	mW	3.8 3.0
Operating Voltage	U_{op}		V	2.1
Differential Resistance	R_d		Ω	80
Emission Wavelength	λ		nm	850
Spectral Width, RMS	Δλ		nm	0.35
Beam Divergence	Θ	I_{op}=6 mA, Full width 1/e^2	°	24.5
Modulation Bandwidth	f_{3dB}	I_{op}=7mA, T=25° C I_{op}=7mA, T=85° C	GHz	18.5 17.5
Threshold Uniformity	ΔI_{th}	Range across 1x4 array chips	mA	<0.1
Slope Efficiency Uniformity	$\Delta\eta$		mW/mA	<0.05

T=25℃ unless otherwise noted

PDA850C1芯片规格

850nm 28Gb/s GaAs PIN PD Array

产品说明和功能

850nm 56G PAM-4 PD
大带宽
高可靠性

典型应用

可应用于数据中心、云计算等

Parameter	Symbol	Conditions	Unit	Typical
Chip Size			mm^3	1.045×0.245x0.150
Aperture diameter	d		um	35
Wavelength	λ		nm	850
Responsivity	R		A/W	0.56
Dark current	I_d	V_{op}=-2.4 V	pA	100
Breakdown voltage	V_{BD}		V	-50
3dB-bandwidth	f_{3dB}	V_{op}=-2.4 V	GHz	23

T=25℃ unless otherwise noted

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VAC905A6芯片规格

Chip specification of VAC905A6

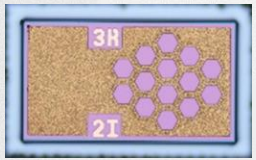
产品说明和功能

高功率密度＞ 3500W/mm^2

小发光面积：直径150um

典型应用

可应用于车载激光雷达、工业单线雷达、单点测距雷达等



Parameter	Symbol	Unit	Typical
Operation temperature	T	° C	-40~105
Forward voltage	V0	V	32
Operating current	IF	A	9
Central wavelength	λp	nm	905
Emitter power non-uniformity		%	10
Divergence	Θ	°	20
Optical power	Po	W	50
Power conversion efficiency	PCE	%	15
Chip area		um	368 x 225
Chip height		um	100
Emitter area		um	φ150
# of emitters		-	14
Emitter Aperture		um	24

Tested under the following conditions: pulse width=8ns,duty cycle=0.08%, temperature on the backside of the chip= 50℃

VAC940A3芯片规格

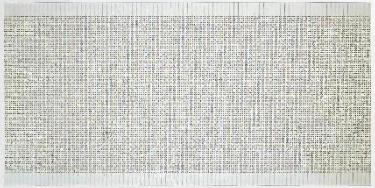
Chip specification of VAC940A3

产品说明和功能

一维可寻址芯片
极高重频
车规级高可靠性
百瓦级高功率

典型应用

可应用于车载/工业补盲雷达等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	9.666 x4.665x 0.150
Emitter Area		mm^2	9.512x 3.9526
Peak operating current/channel	I_0	A	32
Peak operating voltage/channel	V_0	V	18
Central Wavelength	λ_p	nm	940
Divergence	Θ	°	20
Optical Power	P_o	W	120
PCE	PCE	%	20.8

Tested under the following conditions: at suggested bias current, pulsed width=5ns with duty cycle = 0.8%, temperature on the solder pad: 25℃

VAC940A7芯片规格

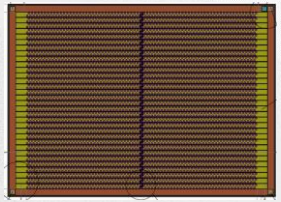
Chip specification of VAC940A7

产品说明和功能

一维可寻址芯片
极高重频
车规级高可靠性
百瓦级高功率

典型应用

可应用于车载/工业补盲雷达等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	5.277×3.799×0.150
Emitter Area		mm^2	4.538×3.471
Peak operating current/channel	I_0	A	28
Peak operating voltage/channel	V_0	V	22
Central Wavelength	λ_p	nm	940
Divergence	Θ	°	20
Optical Power	P_o	W	150
PCE	PCE	%	24

Tested under the following conditions: at suggested bias current, pulsed width=5ns with duty cycle = 0.8%, temperature on the solder pad: 25℃

VAC940A2芯片规格

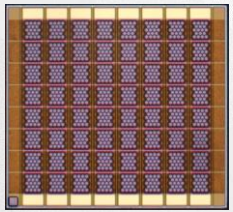
Chip specification of VAC940A2

产品说明和功能

二维可寻址芯片
极高重频
车规级高可靠性
可根据需求定制

典型应用

可应用于车载/工业补盲雷达等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	3.045×2.785×0.15
#of emitters			8×8
Peak operating current/channel	I_0	A	12
Peak operating voltage/channel	V_0	V	38
Central Wavelength	λ_p	nm	940
Divergence	Θ	°	19
Optical Power	P_o	W	50
PCE	PCE	%	11

Tested under the following conditions: at suggested bias current, pulsed width=5ns with duty cycle = 0.8%, temperature on the solder pad: 25℃

VAA940D1芯片规格

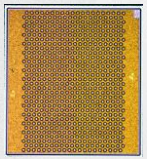
Chip specification of VAA940D1

产品说明和功能

规则阵列940nm VCSEL
功率：4W
PCE：40%
过AEC-Q102

典型应用

车载智能座舱、工业测量、IoT等



Parameter	Symbol	Unit	Typical
Chip Size		mm^3	1.150x 1.250x 0.100
Emitter Area		mm^2	0.819x 1.1275
Number of Emitters			640
Threshold Current	I_{th}	A	0.66
Forward Bias Current	I_0	A	5
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
Divergence	Θ	°	24
Optical Power	P_o	W	4
Dead Emitter		%	<1
SE	η_{SE}	W/A	0.95
PCE	PCE	%	40

Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 50℃

VAC940K1芯片规格

Chip specification of VAC940K1

产品说明和功能

规则阵列940nm VCSEL
功率：8W
PCE：48%

典型应用

车载智能座舱、手机终端、VR/AR、机器视觉、工业测量、IoT等

Parameter	Symbol	Unit	Typical
Chip Size		mm^3	0.880x 0.980x 0.100
Emitter Area		mm^2	0.551x 0.854
Number of Emitters			180
Threshold Current	I_{th}	mA	550
Forward Bias Current	I_0	A	3.5
Forward Voltage	V_0	V	5
Central Wavelength	λ_p	nm	940
Divergence	Θ	°	20
Optical Power	P_o	W	8.4
Dead Emitter		%	<1
SE	η_{SE}	W/A	2.95
PCE	PCE	%	48

Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 25℃

MAA3BC02模组规格

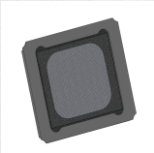
Module Specification for DMS Applications

产品说明和功能

940nm TOF投射灯，3W
可过AEC-Q102
视场角72*58

典型应用

可应用于车载智能座舱、人脸识别、手势识别等



Parameter	Symbol	Unit	Typical
Threshold Current	I_{th}	mA	500
Forward Bias Current	I_0	A	3.5
Forward Voltage	V_0	V	2.1
Central Wavelength	λ_p	nm	940
Optical Power	P	W	2.8
Field of View	$\theta_{1/2}(X)$	°	72
	$\theta_{1/2}(Y)$	°	58
SE	η_{SE}	mW/mA	0.9
PCE	PCE	%	38

Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 25℃

MAA4DE01模组规格

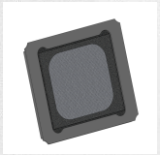
Module Specification for TOF Application &OMS

产品说明和功能

940nm TOF投射灯，4W
可过AEC-Q102
视场角110*85

典型应用

可应用于车载智能座舱等



Parameter	Symbol	Unit	Typical
Threshold Current	I_{th}	mA	600
Forward Bias Current	I_0	A	4.5
Forward Voltage	V_0	V	2.15
Central Wavelength	λ_p	nm	940
Optical Power	P	W	3.56
Field of View	$\theta_{1/2}(X)$	°	110
	$\theta_{1/2}(Y)$	°	85
SE	η_{SE}	mW/mA	0.93
PCE	PCE	%	37

Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 25℃

MAA4BZ01模组规格

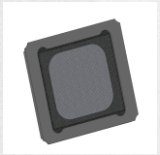
Module Specification for TOF Applications & OMS

产品说明和功能

940nm TOF投射灯，4W
可过AEC-Q102
视场角125*105

典型应用

可应用于车载智能座舱等



Parameter	Symbol	Unit	Typical
Threshold Current	I_{th}	mA	940
Forward Bias Current	I_0	A	6
Forward Voltage	V_0	V	2.35
Central Wavelength	λ_p	nm	940
Optical Power	P	W	4.15
Field of View	$\theta_{1/2}(X)$	°	125
	$\theta_{1/2}(Y)$	°	105
SE	η_{SE}	mW/mA	0.81
PCE	PCE	%	30

Tested under the following conditions: at suggested bias current, pulsed width=0.1ms with duty cycle = 1%, temperature on the solder pad: 25℃