



光电器件行业先锋—奥伦德科技
Optoelectronic device industry pioneer—Orient Technology

深圳市奥伦德科技股份有限公司
SHENZHEN ORIENT POLYTRON TECHNOLOGIES INC

【技能和态度是生存基础】

Skills and attitudes are the basis for survival

【被需要为存在之理由】

Being needed as a reason for existence



奥伦德公司简介 Company profile

奥伦德，1998年创立于广东深圳，是一家专业研发制造光电器件、封装、芯片、LED外延片的国家级高新技术企业，并获得多项LED发明专利与实用新型专利荣誉称号。公司于2015年2月16日在全国中小企业股份转让系统（即新三板）挂牌，证券简称：奥伦德，证券代码：832016。

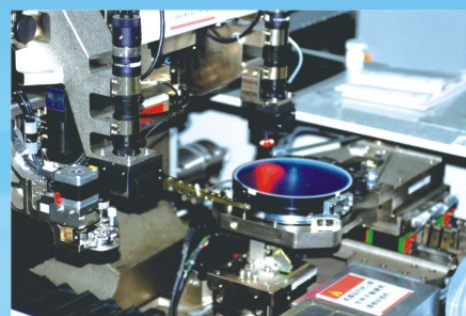
深圳市奥伦德科技股份有限公司致力于光电器件产业二十载，旗下子公司有深圳市奥伦德光电有限公司、深圳市奥伦德元器件有限公司、江门市奥伦德光电有限公司，子公司均为国家高新技术企业。产品线涵盖光电耦合器、LED显示、LED背光、LED照明各类封装、LED贴片灯、光电传感器、LED全系列波段芯片、LED外延片等。

行远必自迩，追求无止境。奥伦德人秉承“合作、勤奋、务实”的理念，“客户至上”的原则，共创奥伦德的新纪元。

Orient, a national high-tech enterprise that is specialized in researching and manufacturing Photocouplers, Packaging, LED Chips and Epi-wafers, was established in Shenzhen, Guangdong in 1998, winning numerous titles in LED invention patents and utility model patents. Orient was listed in medium-sized enterprise share transfer system (NEEQ) on Feb 16th, 2015. The name of securities for short is "Orient" and the code is 832016.

Shenzhen Orient Technology Co., Ltd have been committed to photoelectric industry over 20 years, with several subsidiaries growing up, Shenzhen Orient Electronics Opto Co., Ltd, Shenzhen Orient Components Co., Ltd and Jiangmen Orient Electronics Opto Co., Ltd, all of which are national high-tech enterprises. Our product line covers Photocouplers, LED display, LED backlight, LED packaging, LED SMD, Photoelectric sensor, all types of LED wave chips and Epi-wafers, etc.

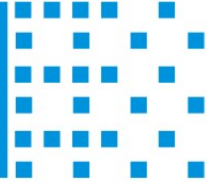
The line will be far from you, the pursuit of Endless. Orient will uphold the concept of "Cooperative, Diligent and Pragmatic" and the principle of "Customer First" to create a new era in the future.



卓越品质，资质为证

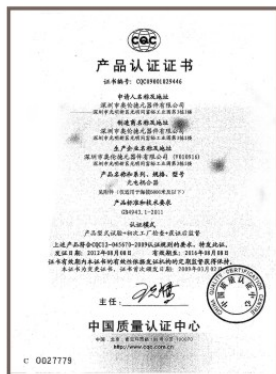
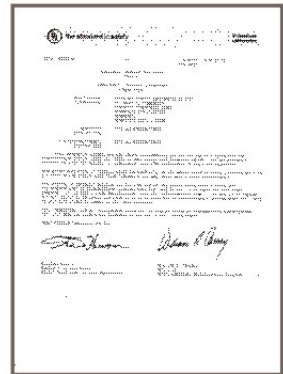
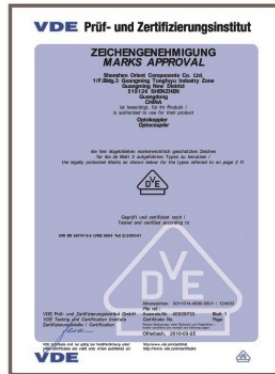
我们追求的不仅仅是荣誉，更要求客户的认可。

奥伦德视品质如生命，以创新为宗旨，尽心尽力，孜孜不倦，
为半导体事业贡献自己的光和热。



深圳市奥伦德科技股份有限公司

SHENZHEN ORIENT POLYTRON TECHNOLOGIES INC





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Development history

Yesterday, Orient had only a blue sky, ambition and enthusiasm.

Over the years, the rapids have been surging, the waves have been washing away the sand, going through hardships and going beyond.

Today, it has become a trendsetter in the industry.

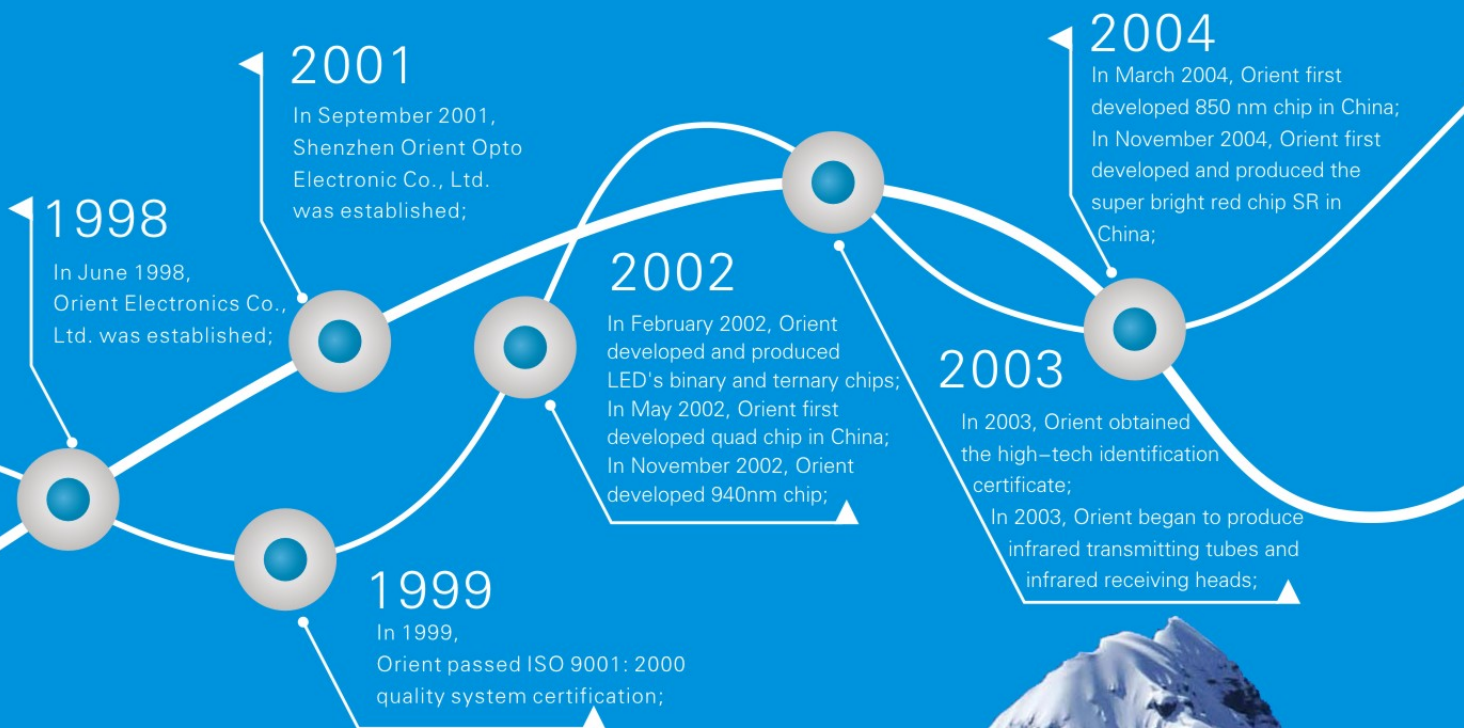
The Orient brand has been achieved by the brand-new management concept, excellent talent resources, advanced management system and high new technology.

With research and development, production and application of epitaxy, chip and package as the core, it has expanded widely at home and abroad, and hundreds of close partners have become the model of the industry.

Good social reputation and deep corporate culture have formed Orient's perfect connotation system ...

Tomorrow, it will be better ...

In the new course, the Orients will walk side by side, arm in arm, heart to heart, laughing, singing and moving forward ...





2015

In February 2015, Orient landed on the new 3rd board with the security code 832016;
In August 2015, the optocoupler for smart meters developed by Orient was certified by the State Grid;

2018

In 2018, the optocoupler for smart meters by Orient was certified by the State Grid again.

2013年

In June 2013, Orient successfully developed and mass produced many types of LED epi wafers;

2010

In March 2010, Orient passed VDE certification;
In April 2010, Jiangmen Orient Opto Electronic Co., Ltd. was established;

2008

In March 2008, Shenzhen Orient Components Co., Ltd. was established;
In April 2008, Orient first started the production of optocouplers in China;
In October 2008, Orient passed CE certification;

2017

In February 2017, Jiangmen R&D Manufacturing Center was invested, completed and put into use.
In October 2017, Orient successfully developed many types of new optocouplers and began to expand production;

2011

In October 2011, Orient put LED epi wafer project into production;

2009

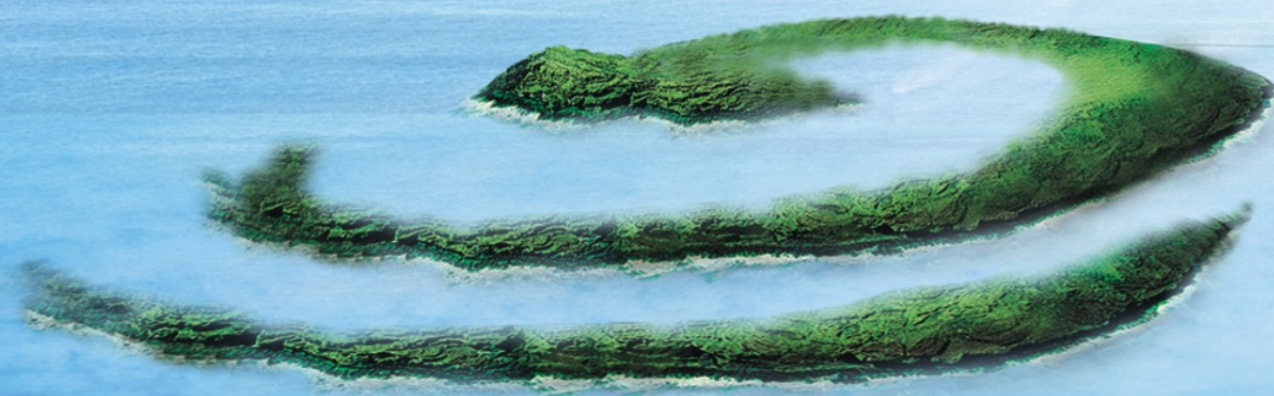
In March 2009, Orient passed CQC certification;
In March 2009, Orient passed UL certification;
In March 2009, Orient won the title of national high-tech enterprise;

2005

In March 2005, Orient obtained the utility model patent certificate (LED display);
In December 2005, Shenzhen Orient Technology Co., Ltd. was established;
In December 2005, Orient began to produce pure blue and pure green chips;
In December 2005, PD production line was began to put into operation;



P roduct introduction



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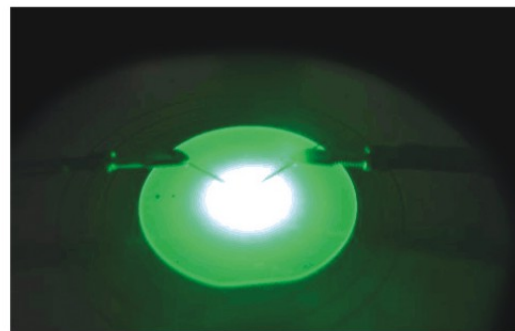
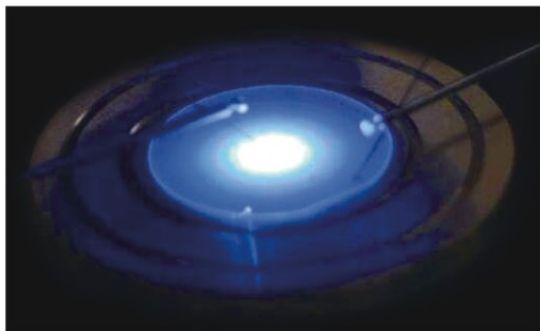


GaN LED Epi Wafer



GaN LED Epi Wafer

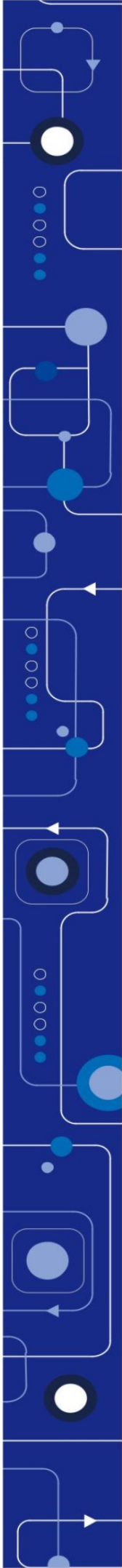
Feature	Process	Market
MOCVD Epi-wafer	High-Power Big Chip	Indicator Light
Excellent Uniformity	Low-Power Small Chip	Dot Matrix
Good Reliability		Digital tube
High Anti-static Electricity		Back Light



Epi Wafer	WAFER SIZE	Substrate	Structure	Peak wavelength	ESD (HBM)/V
GaN Blue Epi wafer	2 inch	Sapphire	N /MQWs/P	440-475nm	>2000V
	4 inch	Sapphire	N /MQWs/P	440-475nm	>2000V
GaN Green Epi Wafer	2 inch	Sapphire	N /MQWs/P	510-535nm	>2000V
	4 inch	Sapphire	N /MQWs/P	510-535nm	>2000V

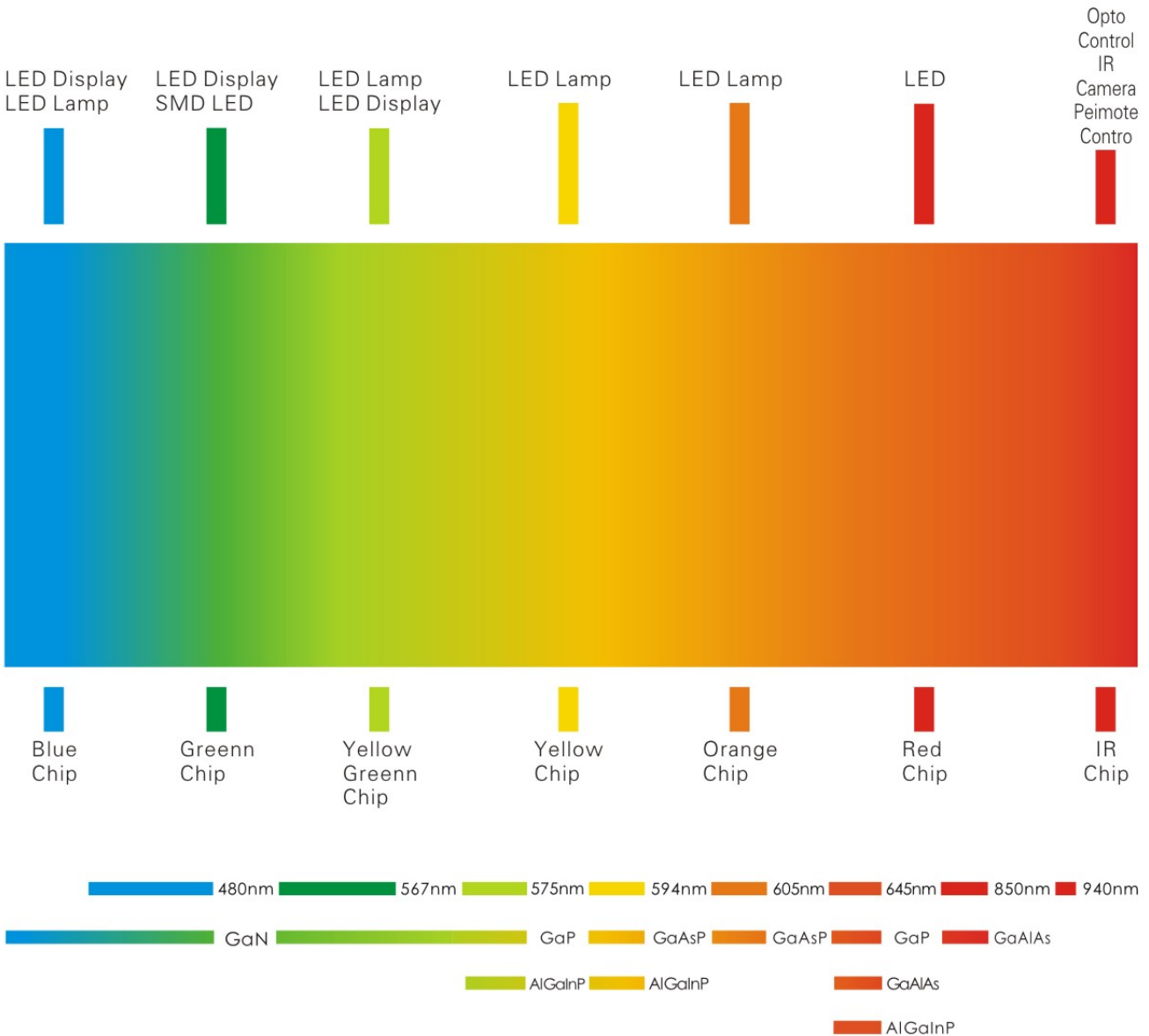


Chip



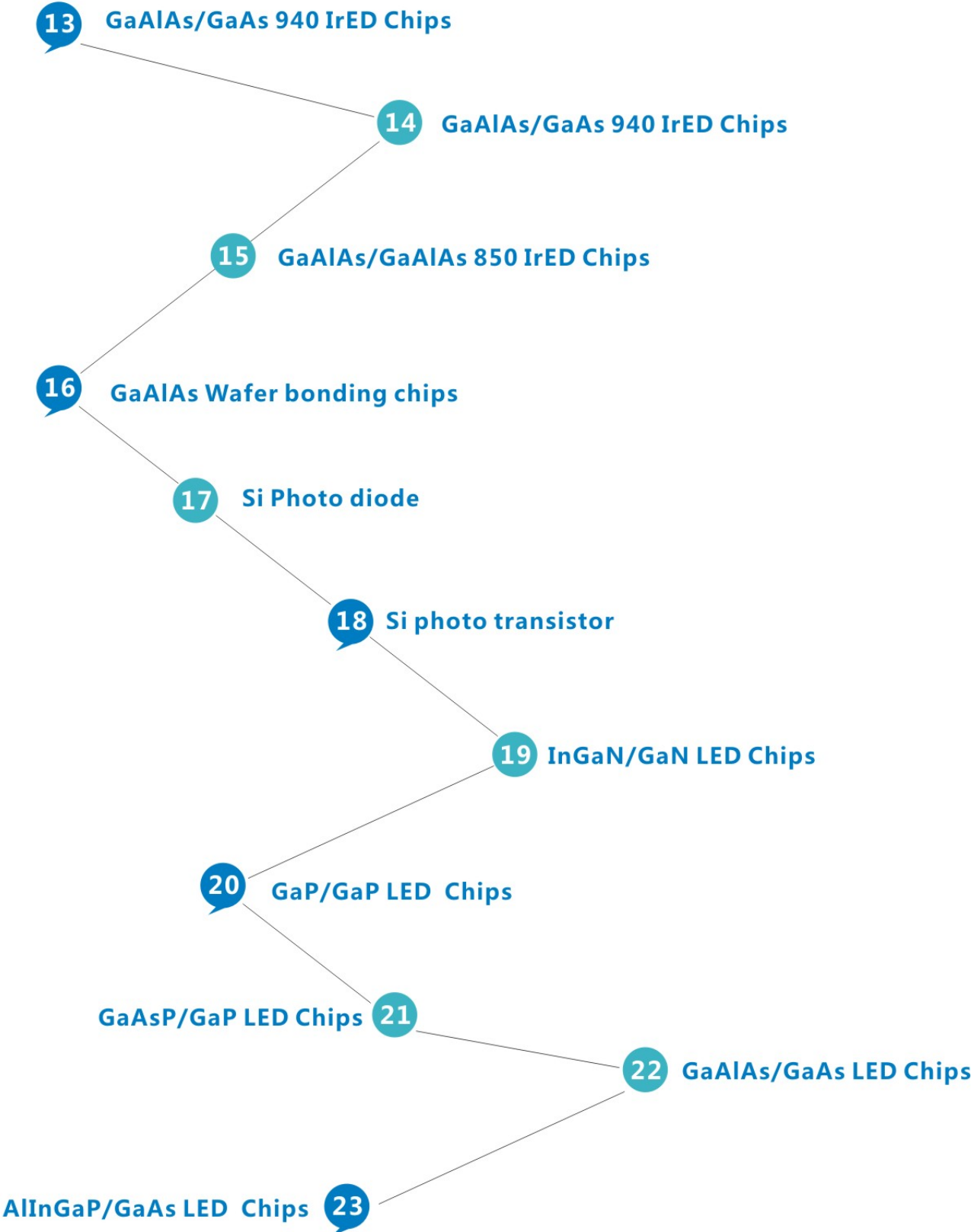
Orient Chip Series

Application



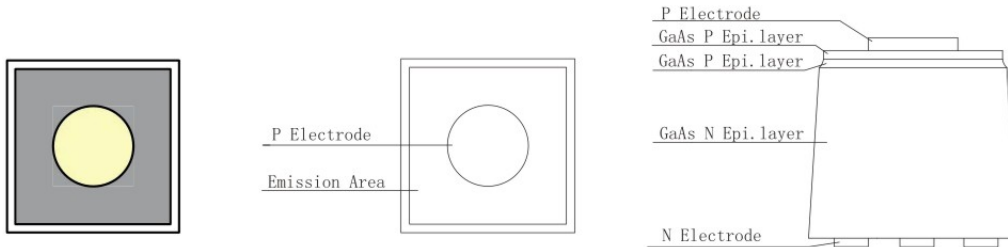
Chip

Chip



GaAs /GaAs 940 IrED Chips

Features	Package	Market
GaAs/GaAs Homo-Epitaxial growth	Lamp	Peripheral Device
Good Reliability	SMD etc	Photo Coupler
Good spectral matched to Si Detector		Photo Interrupter



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
008IRC	200 ± 30	200 ± 30	215 ± 20	104 ± 10	Dot(Φ55)
ORT010IRC	245 ± 30	245 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT010IRC-L	204 ± 30	204 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT109IRC	210 ± 30	210 ± 30	215 ± 20	104 ± 10	Dot(Φ45)

Material /Structure

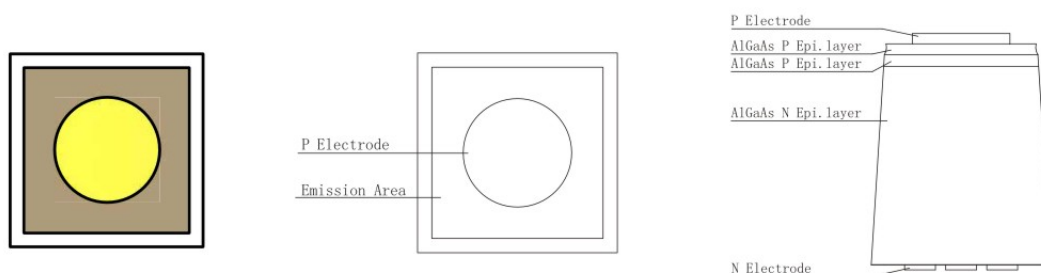
Substrate Material	GaAs
Epitaxy Structure	GaAs
P electrode(anode)	Al Alloy
N electrode(cathode)	Au Alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Peak WavelengthWLP(nm)@20mA
008IRC	< 1.35@20mA	> 0.5@20mA	930-950
ORT010IRC	< 1.3@20mA	> 0.5@20mA	930-950
ORT010IRC-L	< 1.3@20mA	> 0.5@20mA	930-950
ORT109IRC	< 1.3@20mA	> 0.5@20mA	930-950

GaAlAs/GaAs 940 IrED Chips

Features	Package	Market
GaAlAs/GaAs Wafer	Lamp	Remote Controller
High Power	SMD etc	Peripheral Device
Good spectral matched to Si Detector		Photo Coupler
		Photo Interrupter



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT007IRA	175 ± 30	175 ± 30	215 ± 20	104 ± 10	Dot(Φ55)
ORT008IRA	200 ± 30	200 ± 30	215 ± 20	104 ± 10	Dot(Φ55)
ORT010IRA	245 ± 30	245 ± 30	215 ± 20	104 ± 10	Dot(Φ55)
ORT012IRA	280 ± 30	280 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT112IRA	300 ± 30	300 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT912IRA	300 ± 30	300 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT114IRA-L	330 ± 30	330 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT114IRA	350 ± 30	350 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT015IRA	380 ± 30	380 ± 30	215 ± 20	104 ± 10	Dot(Φ45)
ORT016IRA	405 ± 30	405 ± 30	215 ± 20	104 ± 10	Dot(Φ45)

Material /Structure

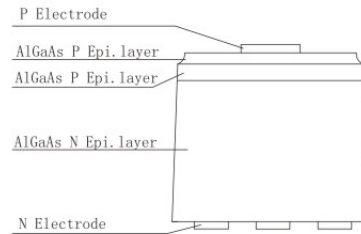
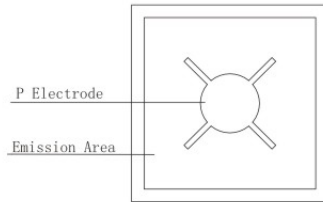
Substrate Material	GaAlAs
Epitaxy Structure	GaAlAs/GaAs
P electrode(anode)	Au Alloy
N electrode(cathode)	Au Alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Peak WavelengthWLP(nm)@20mA
ORT007IRA	< 1.35@20mA	> 1.3@20mA	930-950
ORT008IRA	< 1.3@20mA	> 1.4@20mA	930-950
ORT010IRA	< 1.3@20mA	> 1.6@20mA	930-950
ORT012/112/912IRA	< 1.3@20mA	> 1.7@20mA	930-950
ORT114IRA-L/114IRA	< 1.25@20mA	> 1.75@20mA	930-950
ORT015IRA	< 1.25@20mA	> 1.8@20mA	930-950
ORT016IRA	< 1.25@20mA	> 1.85@20mA	930-950

GaAlAs/GaAlAs 850 IrED Chips

Features	Package	Market
GaAlAs/GaAlAs Wafer	Lamp	CCD Camera
Very High Power	SMD etc	Surveillance
Superior Thermal stability		IrDA
High Speed		Encoder
High Performance		Data Communication



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT509IRA	200 ± 30	200 ± 30	130–220	104 ± 10	Dot(Φ55)
ORT810IRA	250 ± 30	250 ± 30	130–220	104 ± 10	Dot(Φ55)
ORT512IRA	300 ± 30	300 ± 30	130–220	104 ± 10	Dot(Φ55)
ORT812IRA	280 ± 30	280 ± 30	130–220	104 ± 10	Dot(Φ45)
ORT814IRA	350 ± 30	350 ± 30	130–220	104 ± 10	Dot(Φ45)
ORT816IRA	405 ± 30	405 ± 30	130–220	104 ± 10	Dot(Φ45)

Material /Structure

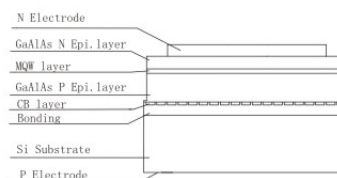
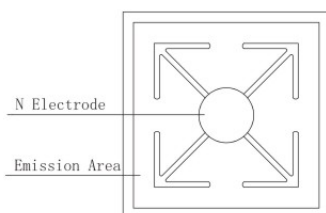
Substrate Material	GaAlAs
Epitaxy Structure	GaAlAs/GaAlAs
P electrode(anode)	Au Alloy
N electrode(cathode)	Au Alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Peak WavelengthWLP(nm)@20mA
ORT509IRA	< 1.5V@20mA	> 3.2@20mA	840–870
ORT810IRA	< 1.45V@20mA	> 3.5@20mA	840–870
ORT512/812IRA	< 1.45V@20mA	> 4.2@20mA	840–870
ORT814IRA	< 1.45@20mA	> 4.8@20mA	840–870
ORT816IRA	< 1.40@20mA	> 5.4@20mA	840–870

GaAlAs Wafer bonding chips

Features	Package	Market
High radiant flux	SMD	CCD Camera
Thin film structure	PLCC etc	Data Communication
Vertical electrode		Surveillance
High driving current		



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORTWB850N-14	355 ± 30	355 ± 30	170 ± 10	104 ± 10	Full Area
ORTWB940N-14	355 ± 30	355 ± 30	170 ± 10	104 ± 10	Full Area

Material /Structure

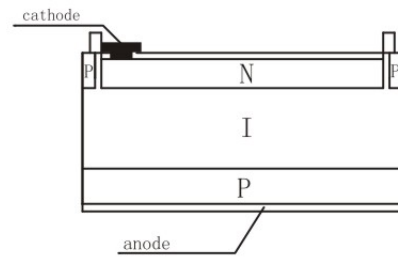
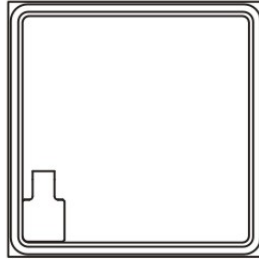
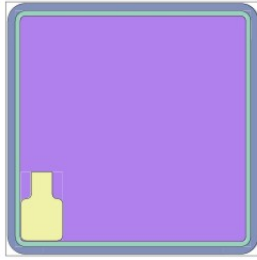
Substrate Material	GaAlAs
Epitaxy Structure	GaAlAs/GaAlAs MQW
P electrode(anode)	Au alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Peak WavelengthWLP(nm)@20mA
ORTWB850-12/14/20/28	< 2.2@100mA	> 30	840-870
ORTWB940-12/14/20/28	< 2.2@100mA	> 25	930-950

Si Photo diode

Features	Package	Market
NIP silicon structure	Lamp	Infrared receiving
Excellent Uniformity	SMD	Tube
Good Reliability	TO etc	Electronic whiteboard Optical communication



Size

Part No.	L(um)	W(um)	T(um)	Active area(um)	N-pad(um)
ORPD2140	1000 ± 30	1000 ± 30	300 ± 10	840*840	100 ± 10
ORPD2143	1090 ± 30	1090 ± 30	300 ± 10	910*910	200 ± 10
ORPD2151	1270 ± 30	1270 ± 30	300 ± 10	1090*1090	250 ± 10
ORPD2160	1520 ± 30	1520 ± 30	300 ± 10	1350*1350	250 ± 10

Material /Structure

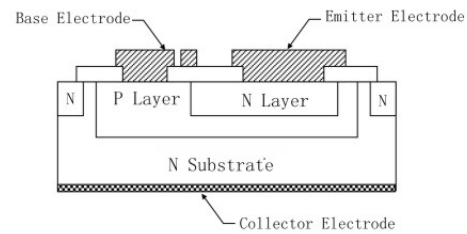
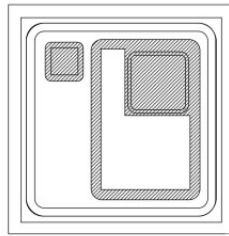
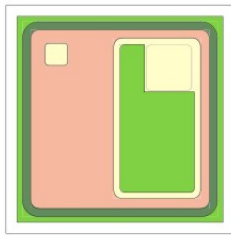
Substrate Material	Si
Epitaxy Structure	N/I/P
N electrode(anode)	Al alloy
P electrode(cathode)	Ag alloy

Photoelectric Properties

Part No.	Forward VoltageVF (V) @10mA	ReverseBrokenVoltage (V) @IR=100 μ A, H=0	Light CurrentILmA) VR=5V,Has 1mw/cm2,@ 940nm	Reverse Dark Current (nA) ID@VR=10V, H=0
ORPD2140/2143	< 1.3	VBR > 30	>30	< 10
ORPD2151	< 1.3	VBR > 30	>40	< 10
ORPD2160	< 1.3	VBR > 30	>55	< 10

Si photo transistor

Features	Package	Market
NPN silicon structure	Lamp	Infrared receiving
Excellent Uniformity	SMD etc	Tube
Good Reliability		Electronic whiteboard
		Photo Coupler
		Photo Interrupter



Size

Part No.	L(um)	W(um)	T(um)	Base(um)	Emitter(um)
ORPT3041	415 ± 30	415 ± 30	200 ± 10	70*70	138*138
ORPT3046	460 ± 30	460 ± 30	200 ± 10	80*80	135*135
ORPT3061	610 ± 30	610 ± 30	200 ± 10	90*90	155*155

Material /Structure

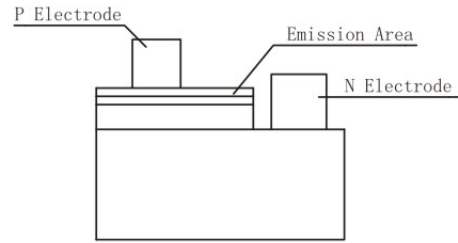
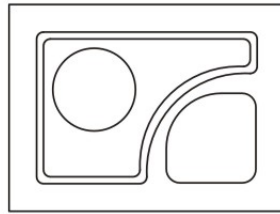
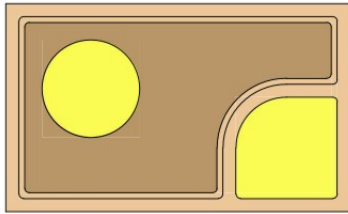
Substrate Material	Si
Epitaxy Structure	N/P/N
P electrode(anode)	Al alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	I _{ceo} (nA)@20V	BV _{ceo} (V)@50uA	BV _{ceo} (V)@500uA	HFE(@VCE=10V&IC=1mA)
ORPT3041	<50nA	>7	>70	300-2000
ORPT3046	<50nA	>7	>70	300-2000
ORPT3061	<50nA	>7	>70	300-2500

InGaN/GaN LED Chips

Features	Package	Market
High luminous Intensity	Dot Matrix	Indicator Light
Good Reliability	Digital displays	Dot Matrix
Excellent Uniformity	Lamp	Digital tube
Good Weathering Resistance	SMD etc	Back Light
MOCVD Epi-wafer		



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT0811B	265 ± 10	160 ± 10	100 ± 10	80 ± 5	85 ± 5
ORT0912B	275 ± 10	185 ± 10	100 ± 10	80 ± 5	85 ± 5
ORT0912G	275 ± 10	185 ± 10	100 ± 10	80 ± 5	85 ± 5
ORT09AB	190 ± 10	130 ± 10	90 ± 10	65 ± 5	65 ± 5
ORT09AG	190 ± 10	130 ± 10	90 ± 10	65 ± 5	65 ± 5

Material /Structure

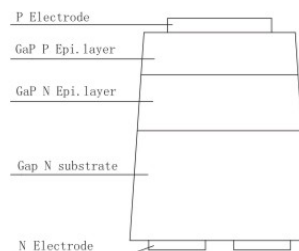
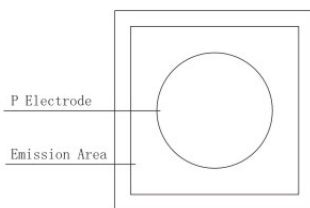
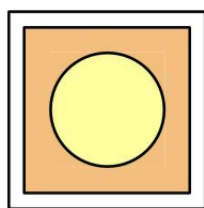
Substrate Material	Sapphire
Epitaxy Structure	InGaN/GaN MQWs
P electrode(anode)	Au alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityIV	Dominant WavelengthWLD(nm)	ESD(HBM)rate@2KV
ORT0811B	< 2.9@5mA	> 60mcd@5mA	448-468@5mA	> 98%
ORT0912B	< 3.2@20mA	> 24mw@20mA	448-475@20mA	> 98%
ORT0912G	< 3.2@20mA	> 700mcd@20mA	510-535@20mA	> 98%
ORT09AB	< 3.1@5mA	> 50mcd@5mA	448-475@5mA	> 98%
ORT09AG	< 3.0@5mA	> 200mcd@5mA	512-530@5mA	> 98%

GaP/GaP LED Chips

Features	Package	Market
Homo-Epitaxial growth	Dot Matrix	Indicator Light
Good Reliability	Digital tube	Digital tube
Good Weathering Resistance	Lamp	RJ45
	SMD etc	Back Light



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT007RD	165 ± 30	165 ± 30	250 ± 30	95 ± 10	Full Area
ORT008RD	180 ± 30	180 ± 30	250 ± 30	104 ± 10	Full Area
ORT007YG	165 ± 30	165 ± 30	240 ± 30	95 ± 10	Full Area
ORT008YG	190 ± 30	190 ± 30	240 ± 30	104 ± 10	Net(25)
ORT009YG	215 ± 30	215 ± 30	240 ± 30	95 ± 10	Dot(45)
ORT008YGK	165 ± 30	165 ± 30	240 ± 30	95 ± 10	Full Area

Material /Structure

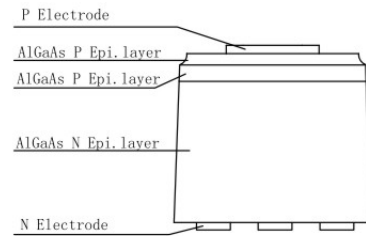
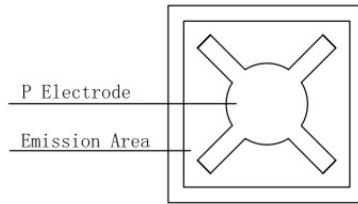
Substrate Material	GaP
Epitaxy Structure	GaP/GaP
P electrode(anode)	Au alloy/Al alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous Intensity Po(mw)	Dominant
ORT007RD	< 2.6V@20mA	> 0.3@5mA	620-650
ORT008RD	< 2.4V@20mA	> 0.5@5mA	620-650
ORT008YG	< 2.4V@20mA	> 7@20mA	568-574
ORT009YG	< 2.4V@20mA	> 7@20mA	568-574
ORT007YG	< 2.6V@20mA	> 6@20mA	568-574
ORT008YGK	< 2.6V@20mA	> 6@20mA	568-574

GaAsP/GaP LED Chips

Features	Package	Market
GaAsP/GaP Epi-wafer	Dot Matrix	Indicator Light
Good Reliability	Digital tube	Digital tube
Excellent Uniformity	Lamp	RJ45
Good Weathering Resistance	SMD etc	Display



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT008HO	190 ± 30	190 ± 30	200 ± 30	104 ± 10	Net(25)
ORT008HY	190 ± 30	190 ± 30	200 ± 30	104 ± 10	Net(25)
ORT007HY	165 ± 30	165 ± 30	200 ± 30	95 ± 10	Full Area

Material /Structure

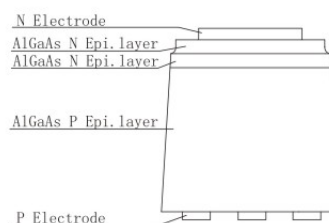
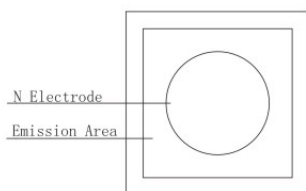
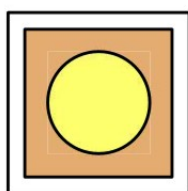
Substrate Material	GaP
Epitaxy Structure	GaAsP/GaP
P electrode(anode)	Au alloy/Al alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Dominant WavelengthWLD(nm)@20mA
ORT008HO	< 2.4V@20mA	> 5@20mA	613-623
ORT008HY	< 2.3V@20mA	> 3.5@20mA	585-593
ORT007HY	< 2.3V@20mA	> 3@20mA	585-593

GaAlAs/GaAs LED Chips

Features	Package	Market
High luminous Intensity	Dot Matrix	Indicator Light
GaAlAs/GaAs Epi-wafer	Digital tube	Digital tube
Single Heterojunction Structure	Lamp	Display
	SMD etc	



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT007SRH	165 ± 30	165 ± 30	245 ± 30	95 ± 10	Full Area
ORT008SRH	190 ± 30	190 ± 30	245 ± 30	100 ± 10	Full Area

Material/Structure

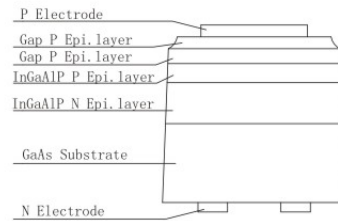
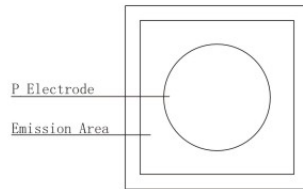
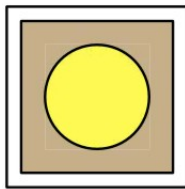
Substrate Material	GaAs
Epitaxy Structure	GaAlAs/GaAs
P electrode(anode)	Au alloy/Al alloy
N electrode(cathode)	Au alloy

Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous IntensityPo(mw)	Peak WavelengthWLP(nm)@20mA
007SRH	< 2.10@20mA	> 3@20mA	640-650
008SRH	< 2.10@20mA	> 3.5@20mA	640-650

AlInGaP/GaAs LED Chips

Features	Package	Market
High luminous Intensity	Dot Matrix	Indicator Light
MOVPE Epi-wafer	Digital tube	Digital tube
Excellent Uniformity	Lamp	RJ45
Low Cost	SMD etc	X' mas lamp etc



Size

Part No.	L(um)	W(um)	T(um)	P-pad(um)	N-pad(um)
ORT008URV	155 ± 30	155 ± 30	180 ± 30/100 ± 30	90 ± 10	Full Area
ORT008USRK	165 ± 30	165 ± 30	180 ± 30	95 ± 10	Full Area
ORT008UYGK	165 ± 30	165 ± 30	180 ± 30/100 ± 30	95 ± 10	Full Area
ORT108UYG	165 ± 30	165 ± 30	180 ± 30/100 ± 30	95 ± 10	Full Area

Material /Structure

Substrate Material	GaAs
Epitaxy Structure	AlInGaP/GaAs
P electrode(anode)	Au alloy/Al alloy
N electrode(cathode)	Au alloy

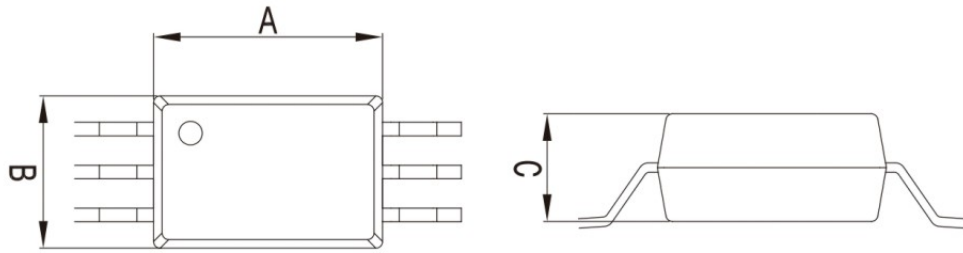
Photoelectric Properties

Part No.	Forward VoltageVF(V)	Luminous Intensity Po(mw)	Dominant Wavelength WLD(nm)@20mA
ORT008URV	< 2.25	> 20	620-640
ORT008USRK	< 2.25	> 15	635-645
ORT008UYGK	< 2.20	> 15	567-574
ORT108UYG	< 2.30	> 15	567-574



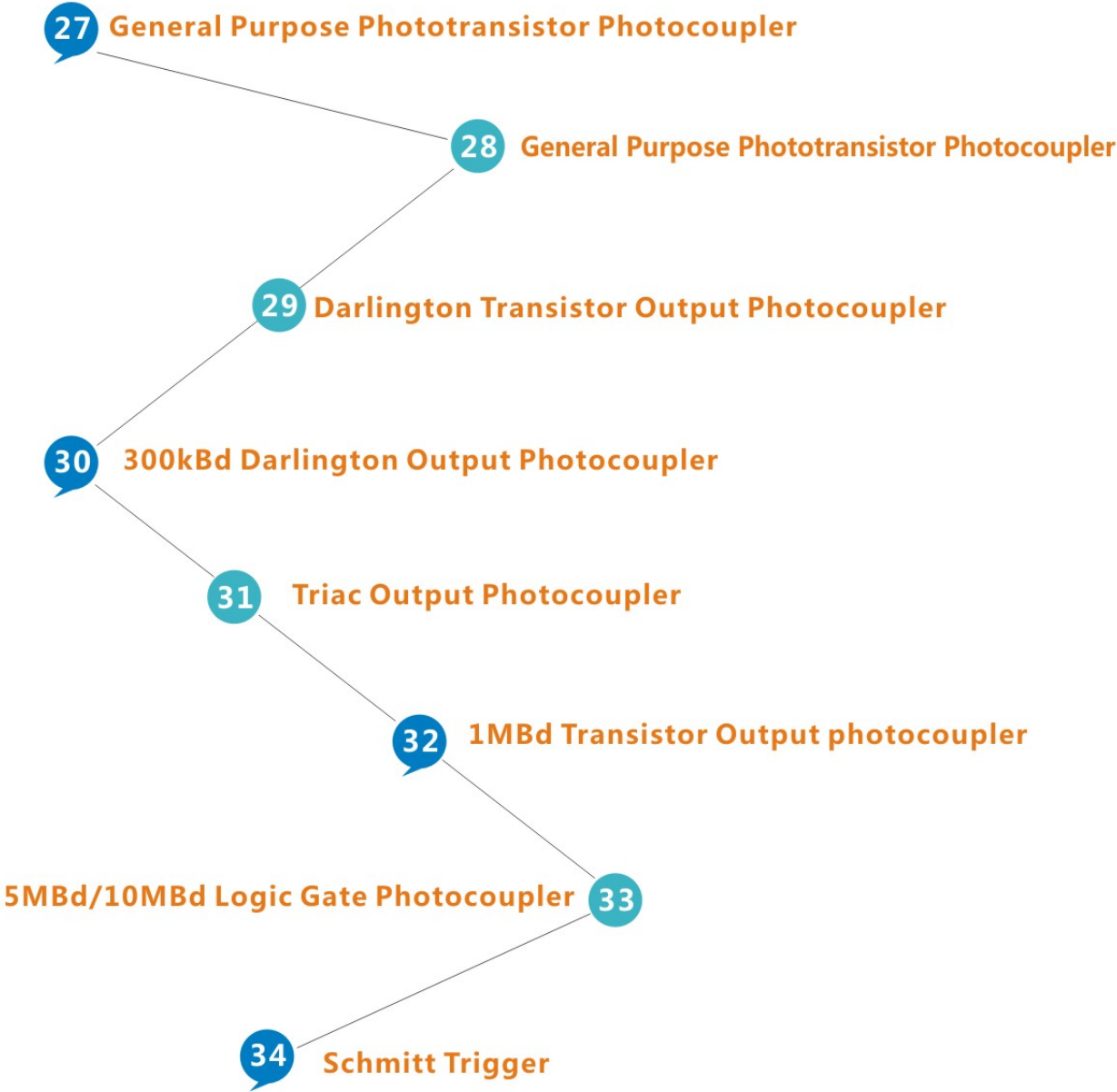
Photocoupler





picture	package	size A x B x C
 	DIP4	6.4 x 4.6 x 3.48
	SMD4	6.4 x 4.6 x 3.48
	SSOP4	4.4 x 2.6 x 2
	LSOP4	7.5 x 2.54 x 2
 	DIP6	7.14 x 6.5 x 3.5
	SMD6	7.14 x 6.5 x 3.5
 	DIP8	9.68 x 6.5 x 3.5
	SMD8	9.68 x 6.5 x 3.5
	DIP16	6.5 x 19.84 x 3.5
	SOP4	4.5 x 3.9 x 2.1
	SSOP5/SSOP6	4.5 x 3.9 x 2.1

Photocoupler package

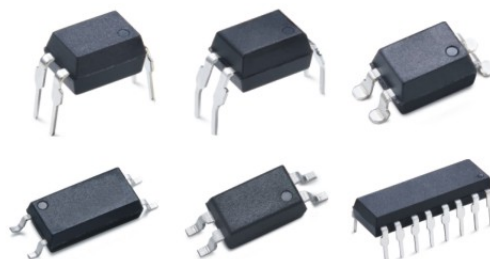


General Purpose Phototransistor Photocoupler

A general purpose Photocoupler is the most common and preferred choice for providing isolated feedback in a regulation loop. They are available in 1-channel and 4-channel, both DC and AC inputs, to suit the requirements of multiple isolation such as interfaces between logic circuits.

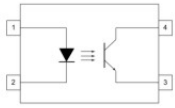
Application

- ◆ Ground loop elimination
- ◆ Interface between logic circuits
- ◆ Level shifting
- ◆ Regulation feedback circuits in SMPS



Part No.	Device	Feature	Package	Viso(Vrms)	Vceo(V)min.	CTRmin(%)	CTRmax(%)	I _F (mA)
OR-3H4(214)		AC input	SSOP4	3750	80	20	400	± 1
OR-814		AC input	DIP4	5000	80	20	300	± 1
OR-814S		AC input	SMD4	5000	80	20	300	± 1
OR-844		AC input 4 Channels	DIP16	5000	35	20	300	± 1
OR-3H7(217)		DC input High V _{ceo}	SSOP4	3750	80	20	400	5
OR-816		DC input	DIP4	5000	80	50	600	5
OR-816S		DC input, High V _{ceo}	SMD4	5000	80	50	600	5
OR-817		DC input, High V _{ceo}	DIP4	5000	80	50	600	5
OR-817S		DC input	SMD4	5000	80	50	600	5
OR357T		DC input	SOP4	3750	80	50	600	5
OR-847		DC input, 4 Channels	DIP16	5000	80	50	600	5

General Purpose Phototransistor Photocoupler

Part No.	Device	Feature	Package	Viso(Vrms)	Vceo(V)min.	CTRmin(%)	CTRmax(%)	I _F (mA)
OR-1001		DC input High V _{ceo}	LSOP4	5000	80	50	600	5
OR-1002				5000	80	22	125	1
				63	10			
OR-1003				5000	80	34	200	1
						100		
OR-1004				5000	80	100	200	5
OR-1005				5000	80	50	150	5
OR-1006				5000	80	100	300	5
OR-1007				5000	80	80	160	5
OR-1008				5000	80	130	260	5
OR-1009				5000	80	200	400	5
OR-1010				5000	80	150	300	5
OR-1014				5000	80	56	320	1
						160		10
OR-1015				5000	80	63	125	5
OR-1018				5000	80	100	200	1
OR-1019				5000	80	250	500	5
OR-1020	5000	80	300	450	5			

Darlington Transistor Output Photocoupler

These photocouplers provide a very high current transfer ratio from a low input forward current. In addition, they are available in DC and AC inputs by DIP package as well as 2.0mm profile (mini-flat) package to increase designers' options. High input-output isolation voltage and high collector-emitter voltage also add to the benefits for many power distribution applications.



Application

- ◆ Hybrid substrates that require high density mounting
- ◆ Telephone sets
- ◆ Copiers, facsimiles
- ◆ Interfaces with various power supply circuits, power distribution boards

Part No.	Device	Feature	Package	Viso(Vrms)	Vceo(V)min.	CTRmin(%)	CTRmax(%)	I _F (mA)
OR-815		DC input	DIP4	5000	35	600	7500	1
OR-815S		DC input	SMD4	5000	35	600	7500	1

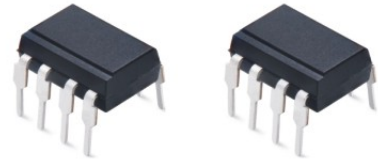
Photocoupler

300kBd Darlington Output Photocoupler

These high gain series couplers use a AlGaAs LED and an integrated high gain photo detector to provide an extremely high current transfer ratio between input and output. Separate pins for the photodiode and output stage result in TTL compatible saturation voltage and high speed operation. Where desired the Vcc and Vo terminals may be tied together to achieve conventional photo Darlington operation. A base access terminal allows a gain bandwidth adjustment to be made.

Application

- ◆ Digital logic ground isolation
- ◆ Low input current line receiver
- ◆ Telephone ring detector
- ◆ EIA-RS-232C line receiver
- ◆ Current loop receiver
- ◆ High common mode noise line receiver



Part No.	Device	Feature	Package	VDD(v)	IF(on)min (mA)	CTRmin (%)	IF(mA)	tPLH (us)	tPHL (us)	CMLCM HMin (KV/us)	Visomin (Vrms)
OR-6N138		DC input	DIP8	3.3/5	1.6	400	1.6	35	10	1	5000
OR-6N138S			SMD8	3.3/5	1.6	400	1.6	35	10	1	5000

Triac Output Photocoupler

Triac output photocouplers provide a high isolation voltage between input and output Viso of 5,000Vrms(DIP6/SOP6). With two options of zero-crossing and non-zero crossing type of triac driver output, it will provide flexibility for circuit designers.

Other benefits include high Off-State Output Terminal Voltage (400V, 600V & 800V) and high critical rate of rise of off-state voltage (min 1000V/μs).

Application

- ◆ AC Motor Drives
- ◆ AC Motor Starters
- ◆ E.M. Contactors
- ◆ Solenoid/Valve Controls
- ◆ Solid State Relays
- ◆ Static Power Switches
- ◆ Lighting Controls
- ◆ Temperature Controls



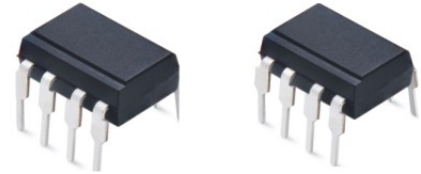
Part No.	Device	Feature	Package	Viso(Vrms)	Off-state Output Vdrm(V)	Trigger Current IFT(mA)				
MOC3020		400V VDRM Random phase	DIP6	5000	400	30				
MOC3021						15				
MOC3022						10				
MOC3023						5				
MOC3020S			SMD6			30				
MOC3021S						15				
MOC3022S						10				
MOC3023S						5				
MOC 3050		600V VDRM Random Phase	DIP6	5000	600	30				
MOC 3051						15				
MOC3052						10				
MOC3053						5				
MOC 3050S			SMD6			30				
MOC 3051S						15				
MOC 3052S						10				
MOC 3053S						5				
MOC3061		600V VDRM Zero- crossing	DIP6	5000	600	15				
MOC3062						10				
MOC3063						5				
MOC3061S						SMD6	15			
MOC3062S			10							
MOC3063S			5							
MOC3081							800V VDRM Zero- crossing	DIP6	5000	800
MOC3082						10				
MOC3083	5									
MOC3081S	SMD6	15								
MOC3082S		10								
MOC3083S		5								
OR302X (X=0,1,2,3)				Random phase	SOP4	3750		400		
OR305X (X=0,1,2,3)	5, 10, 15, 30									
OR306X (X=1,2,3)	5, 10, 15									
OR308X (X=1,2,3)	5, 10, 15									

1MBd Transistor Output photocoupler

These photocouplers consist of a high efficiency AlGaAs Light Emitting Diode and a high speed optical detector. This design provides excellent AC and DC isolation between the input and output sides of the photocoupler. The connection for the bias of the photodiode improves upon the speed of a conventional phototransistor coupler by reducing the base-collector capacitances. The internal shield ensures high common mode transient immunity. A guaranteed common mode transient immunity is up to 15KV/sec.

Application

- ◆ High Voltage Isolation
- ◆ Isolation in line receivers
- ◆ Feedback element in switching mode power supplies
- ◆ Power transistor isolation in motor drives
- ◆ Replace pulse transformers
- ◆ Replace slower photocoupler isolators
- ◆ Interface between Microprocessorsystem, computer and their peripherals



Part No.	Device	Feature	Package	VDD(v) ax	CTRmin (%)	CTRmax (%)	IF(on) (mA)	tPLH (us)	tPHL (us)	CMLCM HMin (kV/μs)	Visomin (Vrms)
OR-6N135		DC input	DIP8	15	7	50	16	1.5	1.5	1	5000
OR-6N135S		DC input	SMD8	15	7	50	16	1.5	1.5	1	5000
OR-6N136		DC input	DIP8	15	19	50	16	0.8	0.8	1	5000
OR-6N136S		DC input	SMD8	15	19	50	16	0.8	0.8	1	5000

5MBd/10MBd Logic Gate Photocoupler

These high gain series couplers use a AlGaAs LED and an integrated high gain photo detector to provide an extremely high current transfer ratio between input and output. Separate pins for the photodiode and output stage result in TTL compatible saturation voltage and high speed operation.

Application

- ◆ High Voltage Isolation
- ◆ Isolation in line receiver
- ◆ Ground loop elimination
- ◆ Pulse transformer replacement
- ◆ Feedback Element in Switching Mode Power Supplies
- ◆ Power transistor isolation in motor drives
- ◆ High Speed Logic Ground Isolation-TTL / TTL, TTL / CMOS, TTL / LSTTL
- ◆ Interface between Microprocessor system computer and their peripher



Part No.	Device	Feature	Package	VDD(v)	IF(on) min (mA)	tPLH (ns) Max	tPHL (ns) Max	PWD(ns) MAX	CMLC MHMin (kV/ μs)	Visomin (Vrms)
OR-6N137 5M		DC input, 5M Bd, Logic Gate output	DIP8	3.3/5	5	90	75	35	10	5000
OR-6N137S 5M			SMD8	3.3/5	5	90	75	35	10	5000
OR-6N137		DC input, 10 MBd, Logic Gate output	DIP8	3.3/5	5	90	75	35	10	5000
OR-6N137S			SMD8	3.3/5	5	90	75	35	10	5000

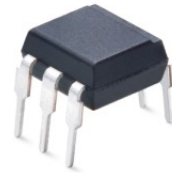
Photocoupler

Schmitt Trigger

Orient H11Lx-L has a high-speed integrated circuit detector optically coupled to infrared emitting diode. The output incorporates a Schmitt Trigger which provides hysteresis for noise immunity and pulse shaping.

Application

- ◆ Logic to logic isolator
- ◆ Programmable current level sensor
- ◆ Line receiver—eliminate noise and transient problems
- ◆ Digital programming of power supplies
- ◆ A.C. to TTL conversion—square wave shaping
- ◆ Interfaces computers with peripherals



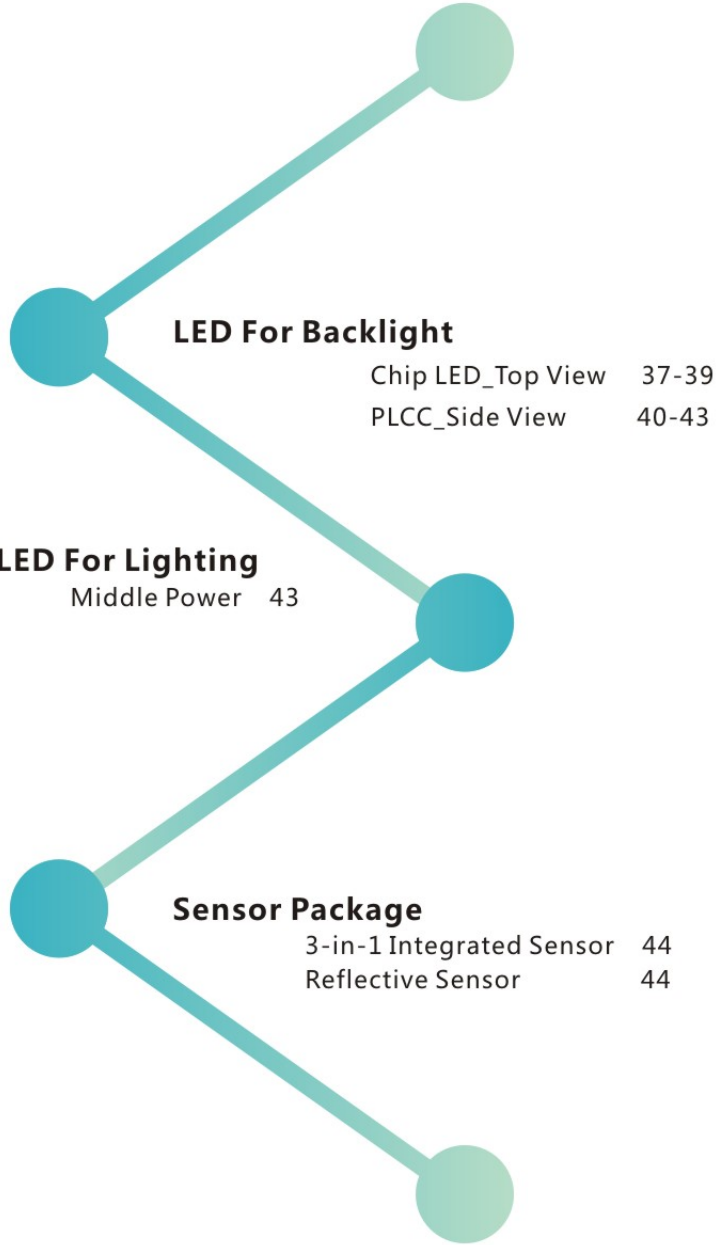
Part No.	Device	Feature	Package	IFONMax (mA)	Turn-on time max (us)	Turn-off time max (us)	Data rate (Mbd)	VCC(V)	Viso (Vrms)
H11L1-L		DC input	DIP6	1.6	1	1	2	3-16	5000
H11L1S-L			SMD8	1.6	1	1	2	3-16	5000



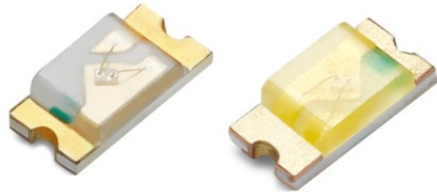
Optical Package



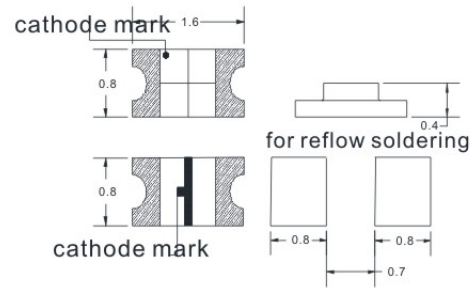
Optical Package








Chip LED _Top View



1.6 x 0.8 x 0.4 mm

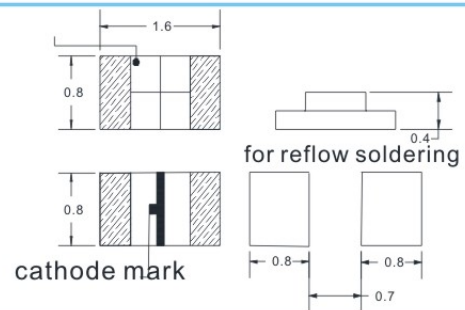







Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity I _v (mcd)	View Angle 2 θ 1/2	Typ. Forward Voltage V _F (V)	Forward Current I _F (mA)
ORH-R36G	 Red	630	94	120	2.0	20
ORH-YG36G	 Yellow Green	570	42	120	2.0	20
ORH-G36G	 True Green	520	900	120	3.0	20
ORH-B36G	 Blue	467	35	120	2.85	2
ORH-W46G	 White	(0.30, 0.28)	140	120	2.9	5

Chip LED _Top View



1.6 x 0.8 x 0.4 mm

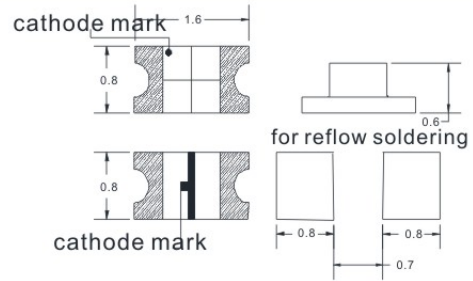


Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity I _v (mcd)	View Angle 2 θ 1/2	Typ. Forward Voltage V _F (V)	Forward Current I _F (mA)
ORH-R36G	 Red	630	94	120	2.0	20
ORH-YG36G	 Yellow Green	570	42	120	2.0	20
ORH-G36G	 True Green	520	900	120	3.0	20
ORH-B36G	 Blue	467	35	120	2.85	2
ORH-W46G	 White	(0.30, 0.28)	140	120	2.9	5

Chip LED _Top View



1.6 x 0.8 x 0.6 mm

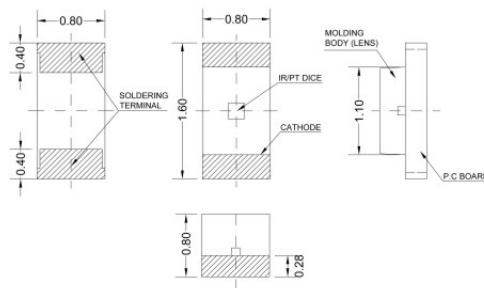


Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity Iv(mcd)	View Angle $2\theta_{1/2}$	Typ. Forward Voltage V_F (V)	Forward Current I_F (mA)
ORH-R36A		Red 625	94	120	2.0	20
ORH-O36A		Orange 605	130	120	2.0	20
ORH-Y36A		Yellow 590	150	120	2.0	20
ORH-YG36A		Yellow Green 572	42	120	2.0	20
ORH-G36A		True Green 521	900	120	3.0	20
ORH-B36A		Blue 467	35	120	2.85	2
ORH-W46A-J		White (0.24, 0.23)	800	120	3.0	15

Chip LED _Top View



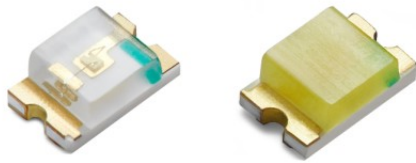
1.6 x 0.8 x 0.8 mm



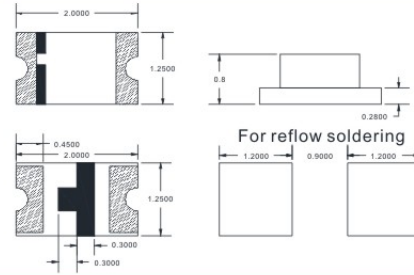
Part No.	Lens Color	λ p(nm)	Typ. Radiation Intensity I_e (mW/sr)	View Angle $2\theta_{1/2}$	Typ. Forward Voltage V_F (V)	Forward Current I_F (mA)
IR emission	Clear	940	0.8	120	1.2	20
	Clear	850	2.0	120	1.6	20

Part No.	I_{ceo} (nA)@20V	BV_{ceo} (V) @50 μ A	BV_{ceo} (V) @500 μ A	HEFI(@VCE= 10V&IC=1mA)	Φ (deg)	λ 0.1 (nm)
PT reception	<50	>7	>70	300-2000	120	470 to 1090

Chip LED _Top View



2.0 x 1.25 x 0.8 mm

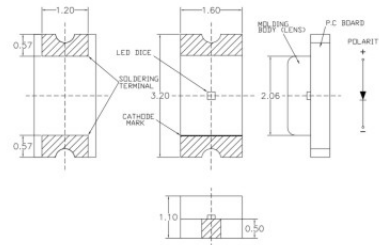


Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity Iv(mcd)	View Angle 2θ 1/2	Typ. Forward Voltage Vf (V)	Forward Current If (mA)	
ORH-R35A		Red	625	94	120	2	20
ORH-Y35A		Yellow	590	63	120	2	20
ORH-YG35A		Yellow Green	572	42	120	2	20
ORH-G35A		True Green	525	900	120	3	20
ORH-B35A		Blue	465	63	120	3.2	20
ORH-W45A		White	(0.33, 0.36)	700	120	2.9	15

Chip LED _Top View



3.20 x 1.60 x 1.10mm

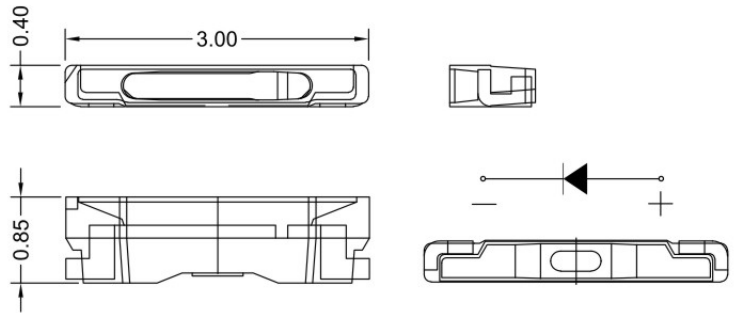


Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity Iv(mcd)	View Angle 2θ 1/2	Typ. Forward Voltage Vf (V)	Forward Current If (mA)	
ORH-R37A		Red	631	60	130	2.0	20
ORH-Y37A		Yellow	589	50	130	2.0	20
ORH-O37A		Orange	605	90	130	2.0	20
ORH-YG37A		Yellow Green	571	35	130	2.0	20
ORH-G37A		True Green	525	150	130	3.3	20
ORH-B37A		Blue	470	50	130	3.3	20
ORH-W47A		White	(0.31, 0.32)	112	130	2.9	5

PLCC_Side View



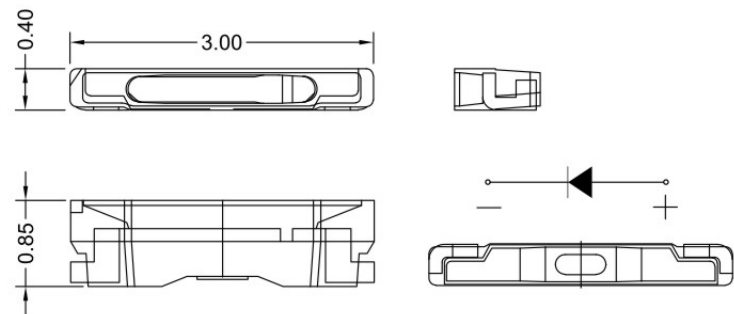
3.0 x 0.85 x 0.51 mm



Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity I _v (mcd)	View Angle 2 $\theta_{1/2}$	Typ. Forward Voltage V _F (V)	Forward Current I _F (mA)	Max.Forward Current I _F (mA)
OR-PL3004W-01	White	(0.28, 0.26)	2600–2800	120	3.0	20	30
OR-PL3004W-02	White	(0.28, 0.26)	3200–3400	120	3.0	20	30
OR-PL3004W-03	White	(0.28, 0.26)	3600–3800	120	3.0	20	30



3.00 x 0.85 x 0.60 mm

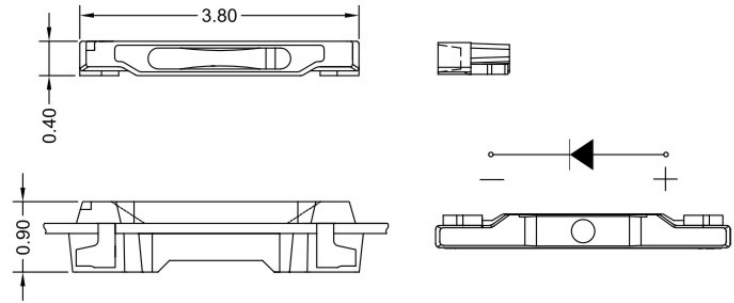


Part No.	Color	λ d(nm)/ CIE(x,y)	Typ. Luminous Intensity I _v (mcd)	View Angle 2 $\theta_{1/2}$	Typ. Forward Voltage V _F (V)	Forward Current I _F (mA)	Max.Forward Current I _F (mA)
OR-PL3006W-01	White	(0.28, 0.26)	2600–2800	120	3.0	20	30
OR-PL3006W-02	White	(0.28, 0.26)	3200–3400	120	3.0	20	30
OR-PL3006W-03	White	(0.28, 0.26)	3600–3800	120	3.0	20	30

PLCC_Side View



3.80 x 0.90 x 0.41 mm

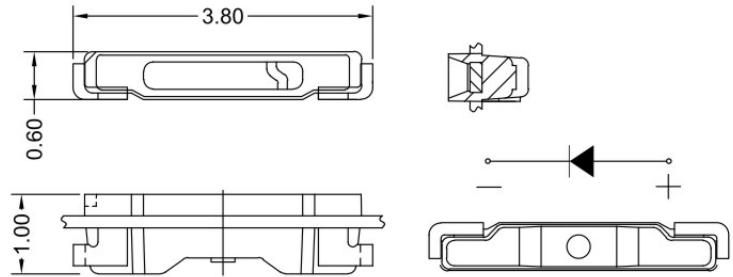


Part No.	Color	λ_d (nm)/ CIE(x,y)	Typ. Luminous Intensity I_v (mcd)	View Angle $2\theta_{1/2}$	Typ. Forward Voltage V_F (V)	Forward Current I_F (mA)	Max. Forward Current I_{Fmax} (mA)
OR-PL010W-01	Red	631	180	120	3.0	2	3
OR-PL010W-02	Red	620	720	120	3.0	20	30
OR-PL010W-03	Orange	605	180	120	3.0	20	30
OR-PL010W-04	Yellow	589	280	120	3.0	20	30
OR-PL010W-05	Yellow Green	571	112	120	3.0	20	30
OR-PL010W-06	True Green	525	2400	120	3.0	20	30
OR-PL010W-07	True Green	525	450	120	3.0	20	30
OR-PL010W-08	Blue	470	140	120	3.0	20	30
OR-PL010W-09	Blue	465	500	120	3.0	20	30
OR-PL010W-10	White	(0.28, 0.26)	2600-2800	120	3.0	20	30
OR-PL010W-11	White	(0.28, 0.26)	3200-3400	120	3.0	20	30
OR-PL010W-12	White	(0.28, 0.26)	3600-3800	120	3.0	20	30
OR-PL010W-13	Sakura Pink	(0.45, 0.26)	1700	120	3.0	20	30
OR-PL010W-14	Violet	(0.32, 0.19)	1700	120	3.0	20	30

PLCC_Side View



3.80 x 1.00 x 0.60 mm

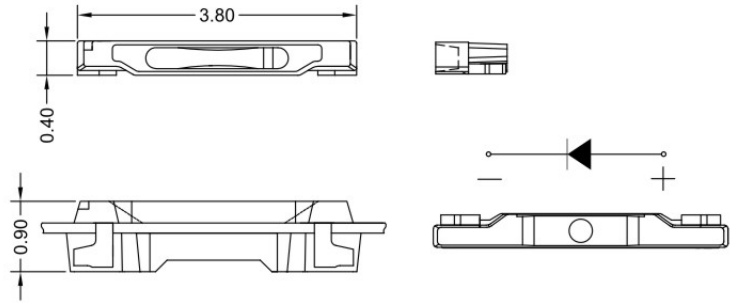


Part No.	Color	λ_d (nm)/ CIE(x,y)	Typ. Luminous Intensity I _v (mcd)	View Angle 2 $\theta_{1/2}$	Typ. Forward Voltage V _F (V)	Forward Current I _F (mA)	Max.Forward Current I _F (mA)
OR-PL020W-01	Red	631	180	120	3.0	2	3
OR-PL020W-02	Red	620	720	120	3.0	20	30
OR-PL020W-03	Orange	605	180	120	3.0	20	30
OR-PL020W-04	Yellow	589	280	120	3.0	20	30
OR-PL020W-05	Yellow Green	571	112	120	3.0	20	30
OR-PL020W-06	True Green	525	2400	120	3.0	20	30
OR-PL020W-07	True Green	525	450	120	3.0	20	30
OR-PL020W-08	Blue	470	140	120	3.0	20	30
OR-PL020W-09	Blue	465	500	120	3.0	20	30
OR-PL020W-10	White	(0.28, 0.26)	2600–2800	120	3.0	20	30
OR-PL020W-11	White	(0.28, 0.26)	3200–3400	120	3.0	20	30
OR-PL020W-12	White	(0.28, 0.26)	3600–3800	120	3.0	20	30
OR-PL020W-13	Sakura Pink	(0.45, 0.26)	1700	120	3.0	20	30
OR-PL020W-14	Violet	(0.32, 0.19)	1700	120	3.0	20	30

PLCC_Side View



3.80 x 1.00 x 0.53mm

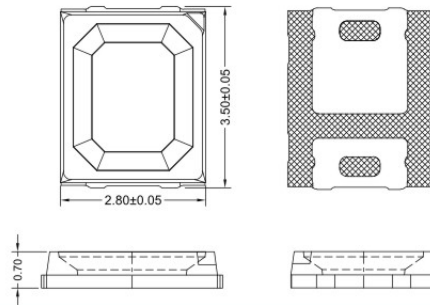


Part No.	Color	λ_d (nm)/ CIE(x,y)	Typ. Luminous Intensity I_v (mcd)	View Angle $2\theta_{1/2}$	Typ. Forward Voltage V_F (V)	Forward Current I_F (mA)	Max. Forward Current I_F (mA)
OR-PL015W-01	White	(0.28, 0.26)	2600–2800	120	3.0	20	30
OR-PL015W-02	White	(0.28, 0.26)	3200–3400	120	3.0	20	30
OR-PL015W-03	White	(0.28, 0.26)	3600–3800	120	3.0	20	30

Middle Power



2.8 x 3.5 x 0.65 mm

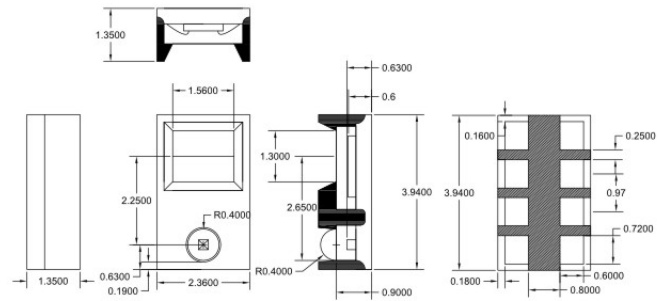


Part No.	Correlated color temperature (K)	CRI Ra (min.)	Typ. Luminous Flux Φ_v (lm)	View Angle $2\theta_{1/2}$	Typ. Forward Voltage V_F (V)	Forward Current I_F (mA)	Thermal Resistance $R_{th(j-s)}$ ($^{\circ}$ C/W)
OR-PL2835W-01	13000–16000	80	22–24	120	3.0	60	35
OR-PL2835W-02	16000–19000	80	20–22	120	3.0	60	35
OR-PL2835W-03	6000–7000	80	22–26	120	3.0	60	35
OR-PL2835W-04	4750–5250	80	24–26	120	3.0	60	35
OR-PL2835W-05	3750–4250	80	22–26	120	3.0	60	35
OR-PL2835W-06	2850–3250	80	20–24	120	3.0	60	35

Ambient light sensor+Proximity sensor

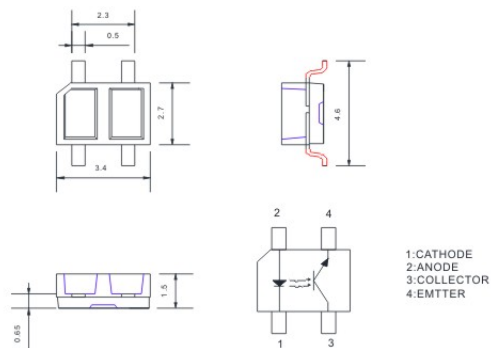


3.94 x 2.36 x 1.35 mm



Part No.	Description	Package Type	Operating Temp (° C)	Supply Voltage (V)	Interface	Interrupt & Persist	DLS Full Scale ADC Count	Light Range	PS Full Scale ADC Count	Detection Range (mm)
OR-29044	(3-in-1) Digital Light Sensor+Proximity Sensor+IR LED	ChipLED 8 pins	-40 to +85	2.25 to 3.63	I2C fast mode (400kbit/s)	Yes	16-bit ADC (linear)	0.01 lux to 64k lux	11-bit ADC (linear)	0-100

Reflective Sensor



Part No.	Size	Vf Typ(V)	Vf Max(V)	Vce(SAT) MAX(V)	Ic(ON) Min(Ma)	Iceo Max(Na)
OR-8307	3.4*2.7*1.5	1.2	1.4		0.5	1000

Note



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