



PRODUCT DATA SHEET

T1901 Ceramic (White) 1W

Model: T1901PW (PL)

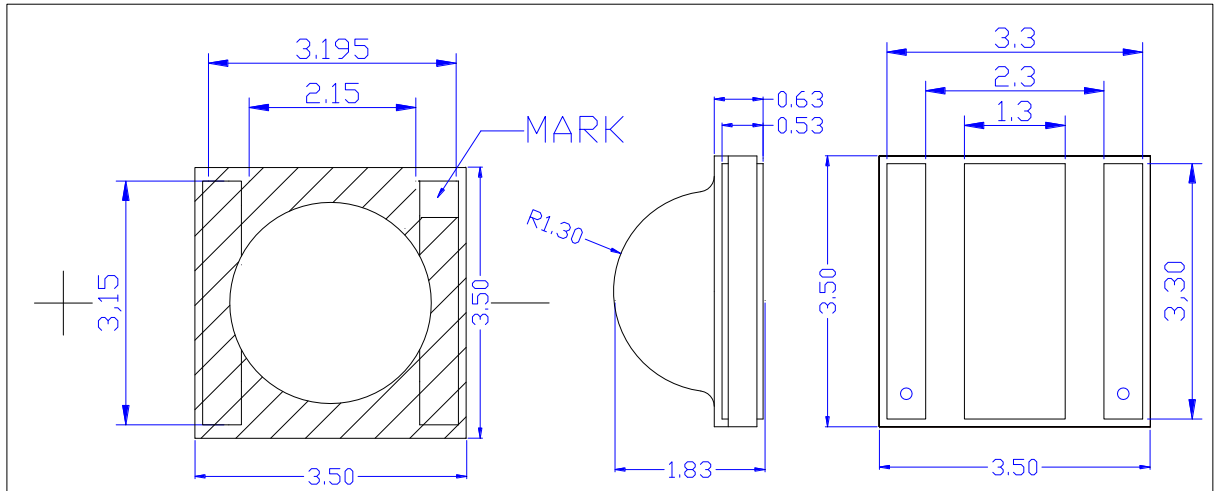
Version: 1.0

Table of Contents

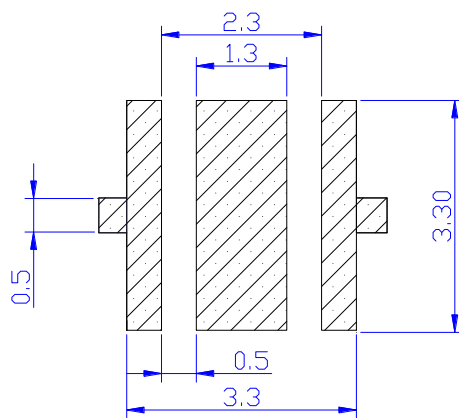
Chapter 1 Mechanical Dimensions.....	3
1.1. Product Dimensions	3
1.2. Mechanical Dimensions.....	3
Chapter 2 Characteristics.....	4
2.1. Standard Technique Characteristics (Ta=25℃).....	4
2.2. Standard Color Rendering Bins	5
2.3. Standard Luminous Flux Bins	6
2.4. Standard Voltage Bins.....	6
2.5. Standard Chromaticity Regions.....	7
2.6. Chromaticity Coordinate Value	8
Chapter 3 Technical Characteristic Curve	10
Chapter 4 Reliability test and Reports.....	11
Chapter 5 Tape and Reel.....	13

Chapter 1 Mechanical Dimensions

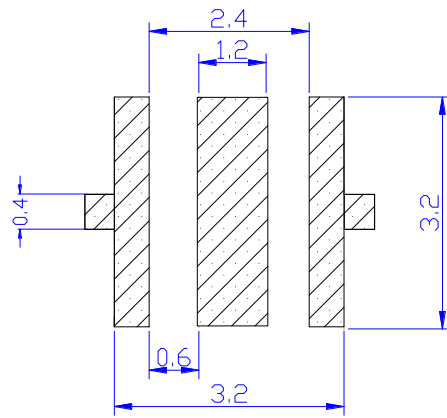
1.1. Product Dimensions



1.2. Mechanical Dimensions



RECOMMENDED PCB SOLDER PAD



RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

Chapter 2 Characteristics

2.1. Standard Technique Characteristics (Ta=25°C)

Characteristics	Symbol	Typical	Maximum	Unit
Power Dissipation	PD	1000	2520	mW
Forward Current	IF	350	700	mA
Forward Voltage	VF	3.3	3.6	V
Temperature Coefficient of Voltage	---	-0.4		mV/°C
Reverse Voltage	VR	5		V
Reverse Current	IR	≤5		μA
Viewing Angle	2θ1/2	120		°
Operating Temperature	Topr	(-40) — (+80)		°C
Storage Temperature	Tstg	(-40) — (+80)		°C
Junction Temperature	Tj		125	°C

The following table provides several base order codes. It is important to note that the base order codes listed here are a subset of the total available order codes for the product family. For more order codes, as well as a complete description of the order-code nomenclature, please consult the T1901 Ceramic Bins.

2.2. Standard Color Rendering Bins

T1901 Order Codes	
Typical Color Rendering (K)	Order Codes
2700	8A、8B、8C、8D
3000	7A、7B、7C、7D
3500	6A、6B、6C、6D
4000	5A、5B、5C、5D

T1901 Order Codes	
Typical Color Rendering (K)	Order Codes
4500	4A、4B、4C、4D、4R、4S、4T、4U
5000	3A、3B、3C、3D、3R、3S、3T、3U
5700	2A、2B、2C、2D、2R、2S、2T、2U
6500	1A、1B、1C、1D、1R、1S、1T、1U
8000	0A、0B、0C、0D、0R、0S、0T、0U

High CRI: Minimum 75, Typical 85; Minimum 85, Typical 93。

Note: If need any other Luminous Flux or Order Codes, please connect to us.

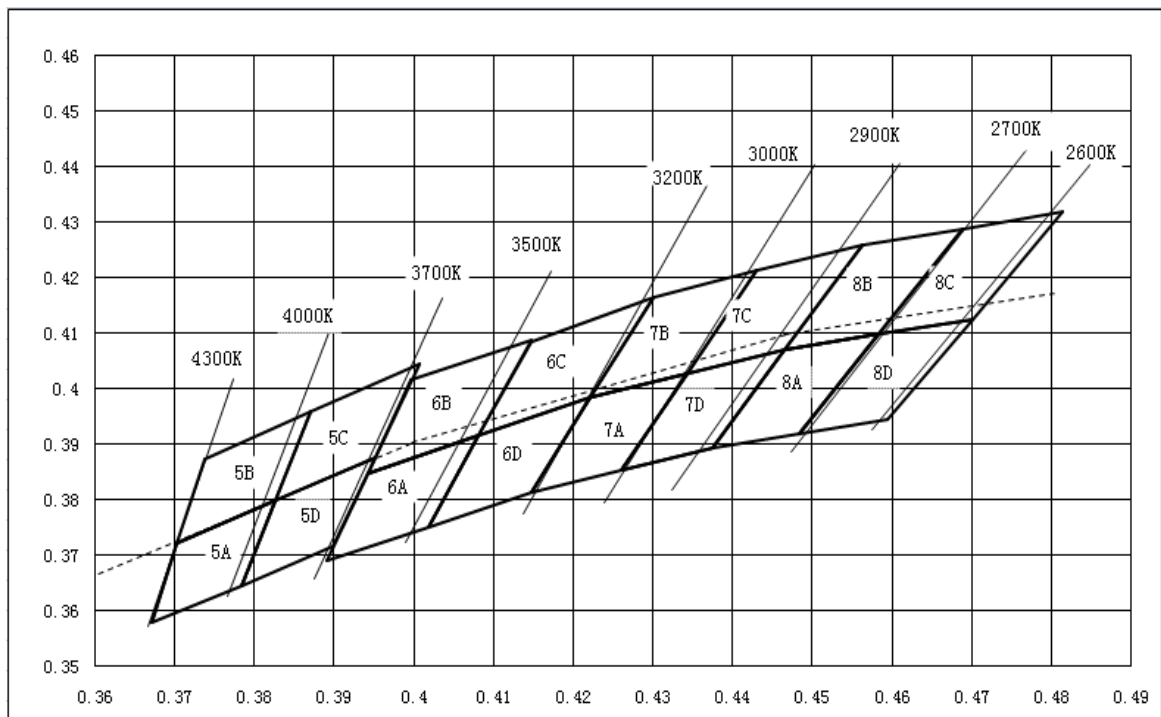
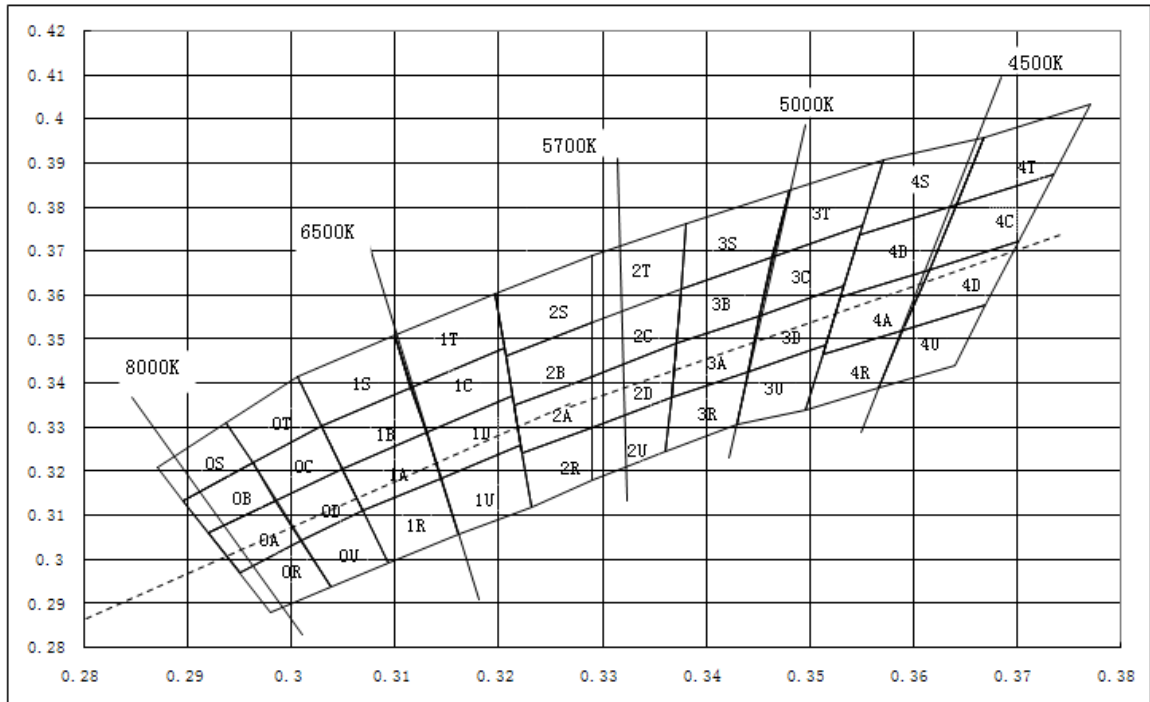
2.3. Standard Luminous Flux Bins

Code	Minimum	Maximum	Unit
M2	70	75	lm
M3	75	80	lm
N1	80	87	lm
N2	87	94	lm
N3	94	100	lm
P1	100	107	lm
P2	107	114	lm
P3	114	122	lm
Q1	122	130	lm
Q2	130	139	lm
Q3	139	148	lm

2.4. Standard Voltage Bins

Code	Minimum	Maximum	Unit
1	2.8	3.0	v
2	3.0	3.2	v
3	3.2	3.4	v
4	3.4	3.6	v
5	3.6	3.8	v

2.5. Standard Chromaticity Regions



2.6. Chromaticity Coordinate Value

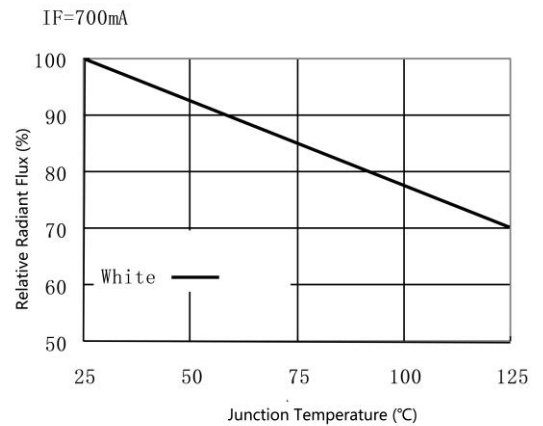
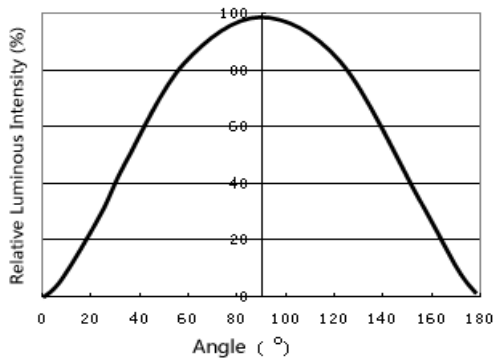
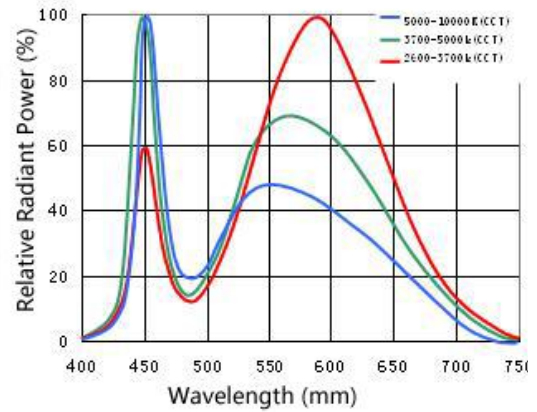
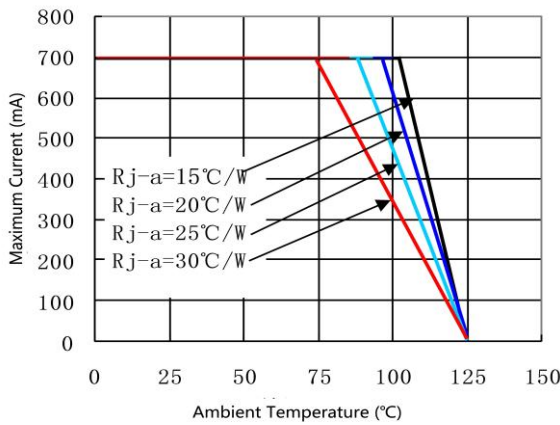
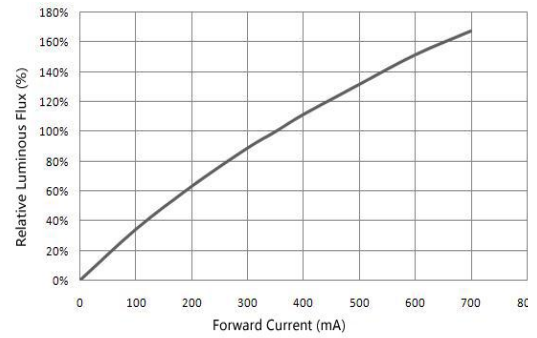
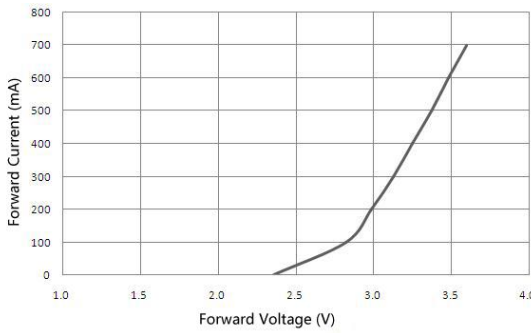
Region	X	Y	Region	X	Y	Region	X	Y
5A	0.367	0.3578	5B	0.3702	0.3722	5C	0.3825	0.3798
	0.3702	0.3722		0.3736	0.3874		0.3869	0.3958
	0.3825	0.3798		0.3869	0.3958		0.4006	0.4044
	0.3783	0.3646		0.3825	0.3798		0.395	0.3875
5D	0.3783	0.3646	6A	0.3889	0.369	6B	0.3941	0.3848
	0.3825	0.3798		0.3941	0.3848		0.3996	0.4015
	0.395	0.3875		0.408	0.3916		0.4146	0.4089
	0.3898	0.3716		0.4017	0.3751		0.408	0.3916
6C	0.408	0.3916	6D	0.4017	0.3751	7A	0.4147	0.3814
	0.4146	0.4089		0.408	0.3916		0.4221	0.3984
	0.4299	0.4165		0.4221	0.3984		0.4342	0.4028
	0.4221	0.3984		0.4147	0.3814		0.4259	0.3853
7B	0.4221	0.3984	7C	0.4342	0.4028	7D	0.4259	0.3853
	0.4299	0.4165		0.443	0.4212		0.4342	0.4028
	0.443	0.4212		0.4562	0.426		0.4465	0.4071
	0.4342	0.4028		0.4465	0.4071		0.4373	0.3893
8A	0.4373	0.3893	8B	0.4465	0.4071	8C	0.4582	0.4099
	0.4465	0.4071		0.4562	0.426		0.4687	0.4289
	0.4582	0.4099		0.4687	0.4289		0.4813	0.4319
	0.4483	0.3919		0.4582	0.4099		0.47	0.4126
8D	0.4483	0.3919						
	0.4582	0.4099						
	0.47	0.4126						
	0.4593	0.3944						

深圳市天电光电科技有限公司

LIGHTNING OPTOELECTRONIC TECHNOLOGY (SZ) CO., LTD

Regio	X	Y	Regio	X	Y	Regio	X	Y	Regio	x	Y
0A	0.295	0.297	0B	0.292	0.306	0C	0.298	0.313	0D	0.298	0.313
	0.292	0.306		0.289	0.313		0.296	0.322		0.304	0.320
	0.298	0.313		0.296	0.322		0.302	0.330		0.306	0.311
	0.300	0.304		0.298	0.313		0.304	0.320		0.300	0.304
0R	0.298	0.288	0S	0.289	0.313	0T	0.296	0.322	0U	0.303	0.293
	0.295	0.297		0.287	0.321		0.293	0.331		0.300	0.304
	0.300	0.304		0.293	0.331		0.300	0.341		0.306	0.311
	0.303	0.293		0.296	0.322		0.302	0.330		0.309	0.299
1A	0.304	0.320	1B	0.302	0.330	1C	0.311	0.339	1D	0.313	0.329
	0.313	0.329		0.311	0.339		0.320	0.348		0.321	0.337
	0.314	0.318		0.313	0.329		0.321	0.337		0.322	0.326
	0.306	0.311		0.304	0.320		0.313	0.329		0.314	0.318
1R	0.306	0.311	1S	0.300	0.341	1T	0.309	0.350	1U	0.314	0.318
	0.314	0.318		0.309	0.350		0.319	0.360		0.322	0.326
	0.316	0.305		0.311	0.339		0.320	0.348		0.323	0.312
	0.309	0.299		0.302	0.330		0.311	0.339		0.316	0.305
2A	0.321	0.335	2B	0.320	0.346	2C	0.329	0.353	2D	0.329	0.341
	0.329	0.341		0.329	0.353		0.337	0.361		0.337	0.349
	0.329	0.33		0.329	0.341		0.337	0.349		0.336	0.336
	0.322	0.324		0.321	0.335		0.329	0.341		0.329	0.33
2R	0.322	0.324	2S	0.319	0.360	2T	0.329	0.369	2U	0.329	0.33
	0.329	0.33		0.329	0.369		0.338	0.376		0.336	0.336
	0.329	0.318		0.329	0.353		0.337	0.361		0.336	0.324
	0.323	0.312		0.320	0.346		0.329	0.353		0.329	0.318
3A	0.337	0.349	3B	0.337	0.361	3C	0.346	0.368	3D	0.345	0.355
	0.345	0.355		0.346	0.368		0.355	0.376		0.353	0.362
	0.344	0.342		0.345	0.355		0.353	0.362		0.351	0.348
	0.336	0.336		0.337	0.349		0.345	0.355		0.344	0.342
3R	0.336	0.336	3S	0.338	0.376	3T	0.348	0.384	3U	0.344	0.342
	0.344	0.342		0.348	0.384		0.357	0.390		0.351	0.348
	0.342	0.330		0.346	0.368		0.355	0.376		0.349	0.333
	0.336	0.324		0.337	0.361		0.346	0.368		0.342	0.330
4A	0.353	0.359	4B	0.354	0.373	4C	0.364	0.380	4D	0.361	0.365
	0.361	0.365		0.364	0.380		0.373	0.387		0.370	0.372
	0.359	0.352		0.361	0.365		0.370	0.372		0.367	0.357
	0.351	0.346		0.353	0.359		0.361	0.365		0.359	0.352
4R	0.351	0.346	4S	0.357	0.390	4T	0.366	0.395	4U	0.359	0.352
	0.359	0.352		0.366	0.395		0.377	0.403		0.367	0.357
	0.356	0.338		0.364	0.380		0.373	0.387		0.364	0.344
	0.349	0.333		0.354	0.373		0.364	0.380		0.356	0.338

Chapter 3 Technical Characteristic Curve



Chapter 4 Reliability test and Reports

Test Item	Standard	Testing Condition	Failure judgement standard
Test of working lifetime in room temperature	JESD22 A108-C	-ambient temperature: normal temperature -forward current: maximum in technology data list -testing period : 1008 hours	1.forward voltage deviate > 200mV 2.luminous flux go down: ·InGaN IEDs > 15% ·AlInGaP LEDs > 25% 3.forward or reserve leakage current > 10μA 4.failure of disaster
Test of working lifetime in high temperature	JESD22 A108-C	-ambient temperature: 85℃ -forward current : maximum in technology data list -testing period: 1008 hours	
Test of working lifetime in low temperature	JESD22 A108-C	-ambient temperature: -40℃ -forward current: maximum in technology data list -testing period: 1008 hours	
Test of working lifetime in high temperature and humidity	JESD22 A101-B	-ambient temperature: 60℃ -humidity: 90% relative (RH) -time:1008 hours(cycle) -forward current: maximum in technology data list	
Test of lifetime in low-high temperature and constant humidity	JESD22 A101-B	--ambient temperature: -20℃ ~0℃ ~25℃ ~60℃ ~25℃ (30 minutes) (30 minutes) (30 minutes) (30 minutes) (30 minutes) -humiodity:60% relative(RH) -testing period: 20 cycle	
Low thermal shock test	MIL-STD-202G107G	-ambient temperature: -40℃~125℃ or according to the require of customers -hold time:15 minutes -change time < 60 seconds -testing period: 100 cycle	

notes:

1. If one or more LED of samples satisfies the list of failure determinant standard, the whole test is failed.
2. Be [when the time is zone] and [test period is over]compare to.
3. InGaN LED is white, blue, green and blue-green LED.
4. AlInGaP LED is red, red-orange and yellow LED.
5. The judgement standard is fit to leakage current of LED chip, not cause by leakage current of LED packaging.
6. Failure of disaster refers to the trouble which causes LED cannot work normal. (Plough or short).

Chapter 5 Tape and Reel

All dimensions in mm.

