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DATA SHEET

PART NO. : EP501W2L001W

REV : A/2

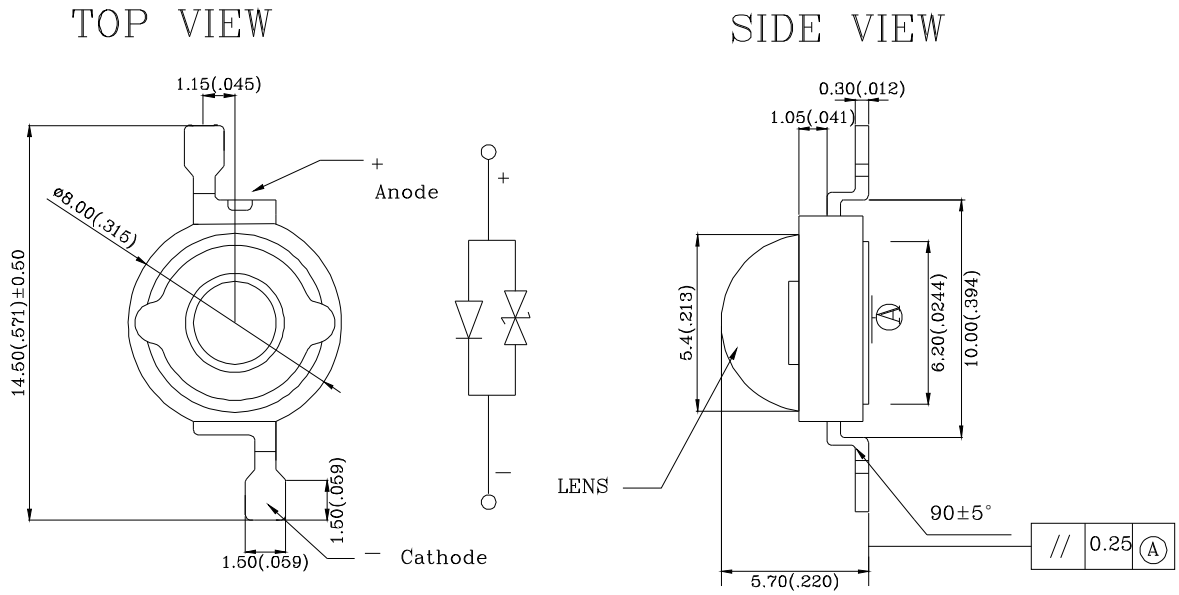
CUSTOMER'S APPROVAL : _____ DCC : _____

Enhance Power LED

EP501W2L001W

REV:A/2

●Package Dimension



Note:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.25mm (.010") unless otherwise noted.

●Feature

1. Long operating life.
2. Low voltage DC operated.
3. Instant light (Less than 100NS).
4. RoHS Compliant.
5. Cool beam safe to touch.
6. Compatible to assemble, lead free reflow soldering process.
7. No UV emission.

●Chip Material

1. Dice Material : InGaN
2. Light Color : Warm White
3. Lens Color : Water Clear

●Absolute Maximum Rating(Ta=25℃)

Symbol	Parameter	Rating	Unit
IF	DC Forward Current	350	mA
Ipulse	Peak Pulse Current (tp≦100us, duty cycle=0.25)	500	mA
VR	Reverse Voltage	5	V
IR	Reverse Current(VR=5V)	50	uA
Tj	LED Junction Temperature(at IF=350mA)	115	℃
*Topr	Operating Temperature	-30 ~ +100	℃
*Tstg	Storage Temperature	-40 ~ +100	℃
Tsol	Manual Soldering Time at 260℃(Max.)	5	seconds
ESD	ESD Sensitivity（Human Body Model）	2000	V

Note :

* : Temperature for using with aluminum board.

●Electro-Optical Characteristic(Ta=25℃)

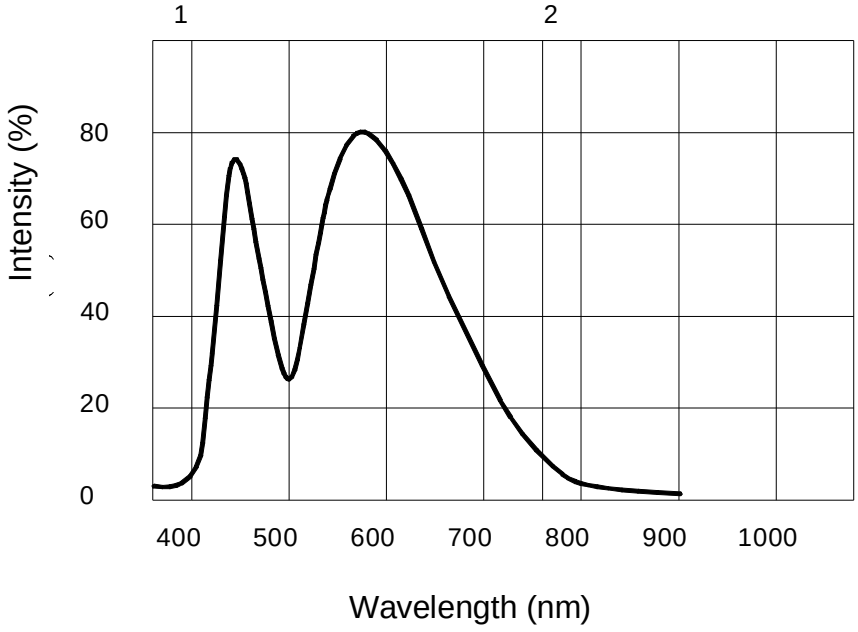
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Flux	IV		90		lm	IF=350mA/200ms
Viewing Angle	2θ1/2		130		deg	
Color Temperature	CCT		4000		K	IF=350mA
Forward Voltage	VF		3.6	4.0	V	IF =350mA
Reverse Current	IR			50	μA	VR = 5V

Enhance Power LED

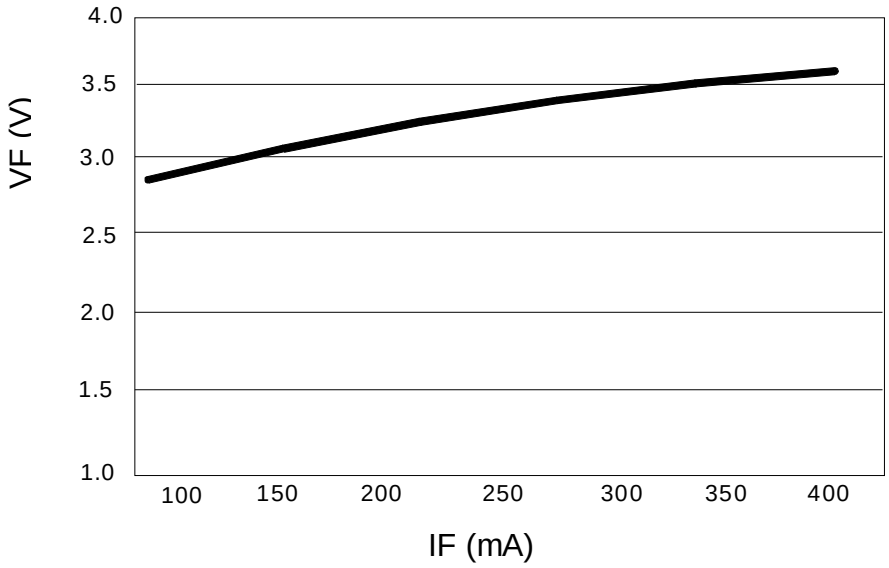
EP501W2L001W

REV:A/2

●Typical Optical and Electrical

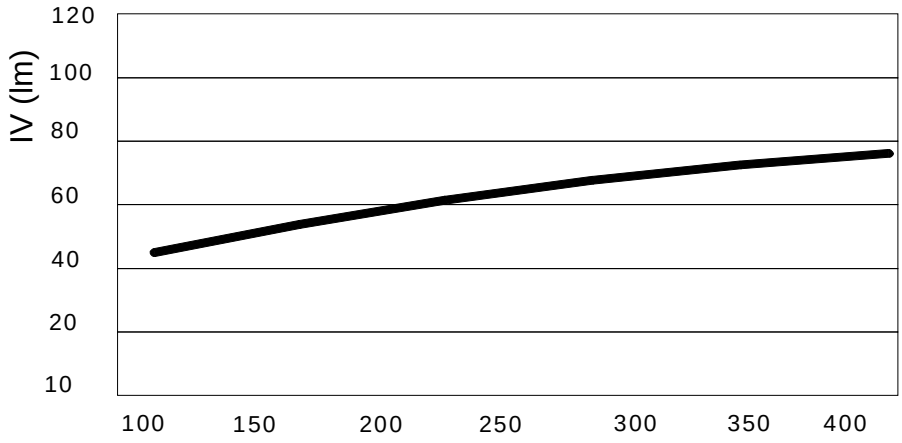


Relative Intensity VS Wavelength



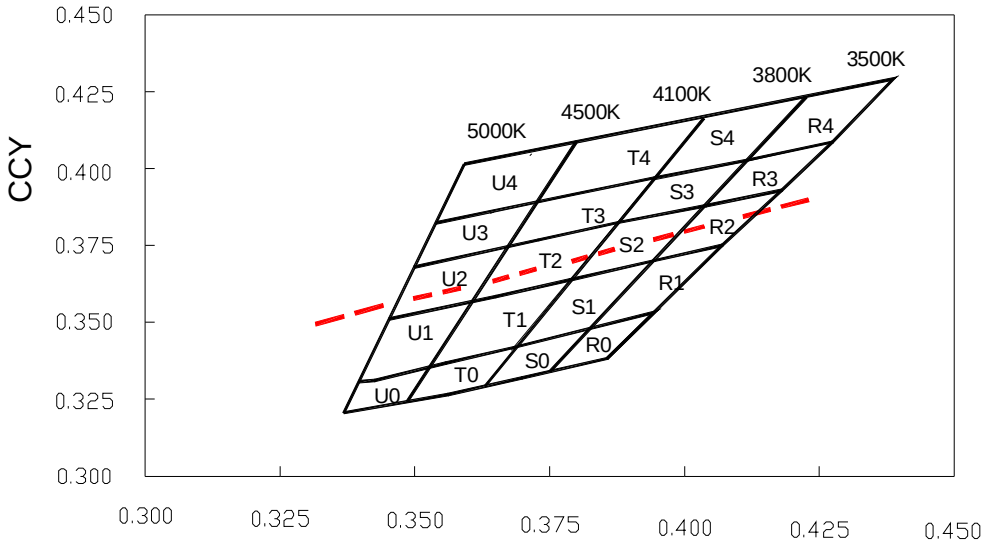
Forward Current VS Forward Voltage

●Typical Optical and Electrical



IF (mA)

Forward Current VS Luminous Flux



CCX

Enhance Power LED

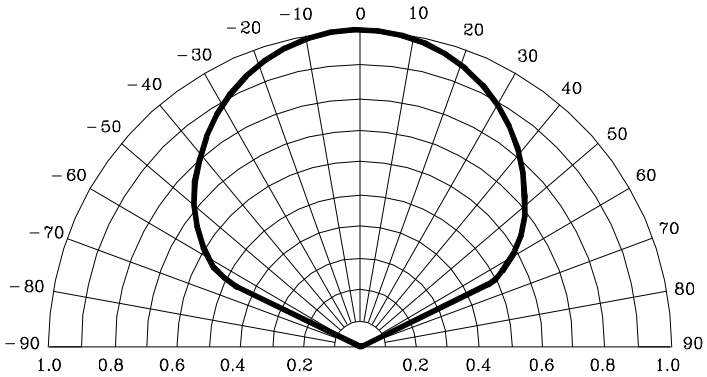
EP501W2L001W

REV:A/2

Group/ CCT(Typ)	X	Y	Group/ CCT(Typ)	X	Y
R0	0.39656	0.36728	S0	0.38259	0.35951
	0.39165	0.35300		0.37850	0.34600
3650K	0.37850	0.34600	3900K	0.36700	0.33770
	0.38260	0.35952		0.37058	0.35195
R1	0.38707	0.37390	S1	0.37407	0.36582
	0.40211	0.38126		0.38707	0.37389
3650K	0.39656	0.36728		0.38259	0.35951
	0.38260	0.35952	3900K	0.37058	0.35193
R2	0.39237	0.39093	S2	0.37826	0.38425
	0.38707	0.37390		0.39236	0.39093
3650K	0.40211	0.38126		0.38707	0.37389
	0.40859	0.39953	3900K	0.37407	0.36582
R3	0.40859	0.39953	S3	0.37826	0.38245
	0.39237	0.39093		0.38110	0.39374
3650K	0.39628	0.40351	3900K	0.39267	0.40350
	0.41478	0.41610		0.39236	0.39093
R4	0.40227	0.42278	S4	0.38595	0.41299
	0.42094	0.43262		0.40227	0.42277
3650K	0.41478	0.41610	3900K	0.39627	0.40350
	0.39268	0.40351		0.38110	0.39374
T0	0.37058	0.35195	U0	0.35707	0.34258
	0.36700	0.33770		0.35480	0.32900
4300K	0.35480	0.32900	4750K	0.34250	0.32080
	0.35707	0.34285		0.34335	0.33203
T1	0.35940	0.35569	U1	0.34444	0.34423
	0.35707	0.34258		0.34335	0.33203
4300K	0.37058	0.35195	4750K	0.35707	0.34258
	0.37407	0.36582		0.35940	0.35569
T2	0.36221	0.37161	U2	0.36221	0.37161
	0.37826	0.38245		0.35940	0.35569
4300K	0.37407	0.36582	4750K	0.34444	0.34423
	0.35940	0.35569		0.34578	0.35919
T3	0.36421	0.38287	U3	0.36421	0.38287
	0.38110	0.39374		0.36221	0.37161
4300K	0.38726	0.38245	4750K	0.34578	0.35919
	0.36221	0.37161		0.34690	0.37174
T4	0.36729	0.40029	U4	0.36421	0.38287
	0.38959	0.41299		0.36729	0.40029
4300K	0.38110	0.39374	4750K	0.34814	0.38562
	0.46421	0.38287		0.34690	0.37174

Typical Optical and Electrical

Directive Characteristics



●Bin Code List

Luminous Flux (IV),(Unit: lm ,IF=350mA)		
Bin Code	Min	Max
P	80	85
Q	85	90
R	90	100
S	100	110

Including test tolerance ± 10%

Forward Voltage(VF),(Unit: V, IF=350mA)		
Bin Code	Min	Max
V8	3.00	3.20
V9	3.20	3.40
V10	3.40	3.60
V11	3.60	3.80
V12	3.80	4.00

Including test tolerance±0.1

●Label Explanation

P/N:	EP501W2L001W	
QTY:	XXXX	PCS
LOT NO.:	LEM1001001	
BIN NO.:	O/V10	

PART NO: EP501W2L001W

LOT NO: L E M 10 1 001
A B C D E F

A---L: Local F: Foreign

B---E: E-power

C---M: For series number

D---Year

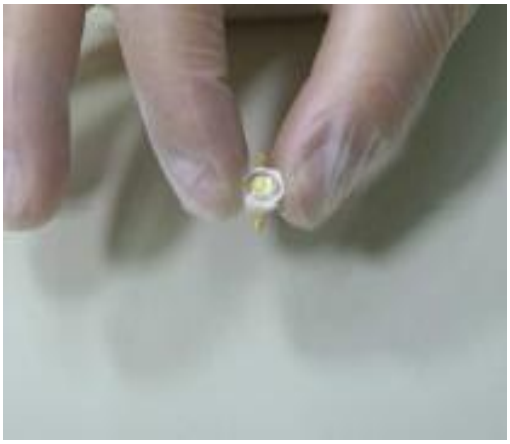
E---Month

F---Spec.

BIN NO: Bin Code

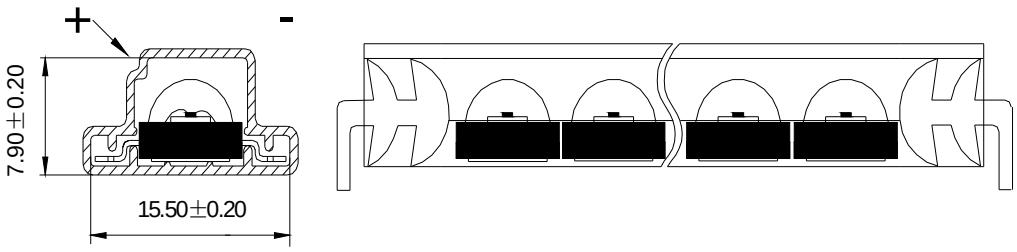
●Caution

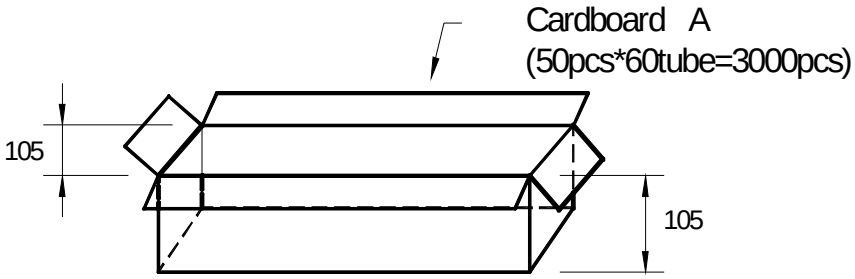
(1).Handling note: Do not touch LED's lens.

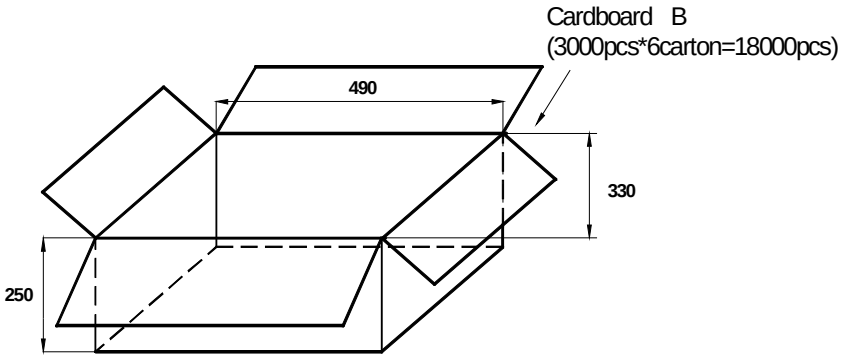


(2)Please wear anti-static wrist strap and gloves to prevent ESD damage when handling.

●Packing Specification





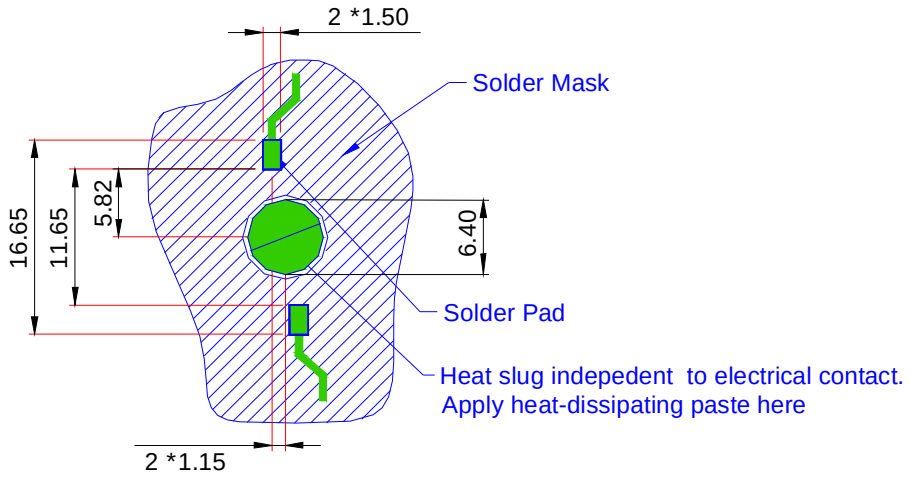


Note:

1. All dimensions are in millimeters.
2. Normal packing Quantity:3000pcs.
3. The carton B contains 6 cartons A at maximum.

	Enhance Power LED	
PARA light	EP501W2L001W	REV: A/2

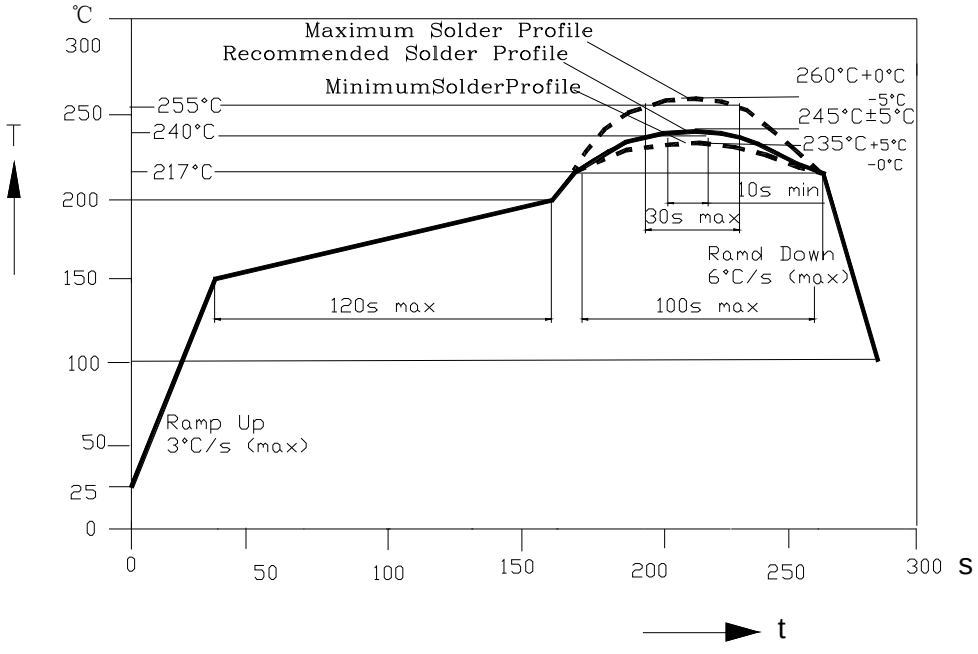
●Suggest Soldering Pad Dimension



Note:

1. All dimensions are in millimeters.
2. The drawings are not to scale.
3. Solder pad can't be connected to slug.

●IR Reflow soldering profile for lead free soldering(J-STD-020C)



●Storage

1. Do not open the moisture proof bag before the devices are ready to use.
2. Before the package is opened, LED should be stored at temperatures less than 30℃ and humidity less than 50%.
3. LED may be stored for 6 months. When the storage time has reached more than 6 months, LED should be stored in a sealed container filled with Nitrogen gas.
4. After the package is opened, LED should be stored at temperatures less than 30℃ and humidity less than 30%.
5. LED should be used within 168 hours (7 days) after the package is opened.
6. Before using LED, baking treatment should be implemented based on the following condition: pre-curing at 60±5℃ for 24 hours.

●E-Power Operating Procedure

1. E-power 350 series products should be operated at 350 mA for ideal performance, but not more than 350mA.
2. E-power 350 series products must be used in conjunction with heat-sinking devices. Soldering on Al PCB with mid-connection point while keeping the layout pattern (∅19.9mm, thickness2.5mm) is another way to help heat dissipation. Thermal Resistance for aluminum board must be less than 0.65 ℃/W.
3. E-power 350 series products are sensitive to static. Operators must wear static wristband (wireless static wristband is prohibited) and be well grounded while working in the environment with an ionizing air blower. Anti-static requirement should be under ESD 2000V.
4. A non-conductive heat-dissipating paste should be applied between E-power and heat-sinking device.
5. Sufficient thermal management must be applied.Large LED forward current will cause high junction temperature and reduce LED life.

●Reliability Test

Test Item	Test Condition	Stress Duration
Reflow	Tsol=260℃,10sec	3 times
Temperature Cycle	H:+100±5℃ 15mins L：-40±5℃ 15mins	300 Cycles
High Temperature High Humidity Operation	Ta=85℃±5℃ RH= 90～95% IF=350mA	500 hours
High Temperature High Humidity Storage	Ta:65℃±5℃ RH:90～95%RH	1000hours
Room Temperature Operation	Ta= 25±5℃ IF =350mA	1000hours
Low Temperature Operation	Ta= -40±5℃ IF=350mA	1000hours
High Temperature Operation	Ta= 110±5℃ IF=350mA	1000hours
Salt Spray	Ta=35℃	48 hours

Temperature for using with aluminum board, in a good thermal-exchange surrounding.

Failure Criteria:

1. LED are open or shorted,
2. Luminous flux attenuate difference(1000hours)＞30%,
3. Forward voltage difference(1000hours) ＞20%.

● Part NO. System of E-Power LED

EP 5 01 W2 L 001 W

Special mark：W:white, B:black	
Series Number	
View Angle: 2: 2*5=10°　　L: L*5=130° 3: 3*5=15°　　M: M*5=160° 6 : 6*5=30°	
R1: λ d=625nm　　Y1: λ d=590nm G1: λ d=525nm　　B1: λ d= 460nm IR: λ d=850nm　　A1: λ d=615nm W1: white　　WY: warm white W2: neutral white	
Power： 01—1W，03—3W，05—5W,..... 0A-100W	
PCB material: 1—Al,2—silicon,3—Fe,4—chinaware, 5—Cu	
EP：Enhance Power	