

NATIONSTAR
—SINCE 1969—

LEDs
FOR LIGHTING APPLICATIONS

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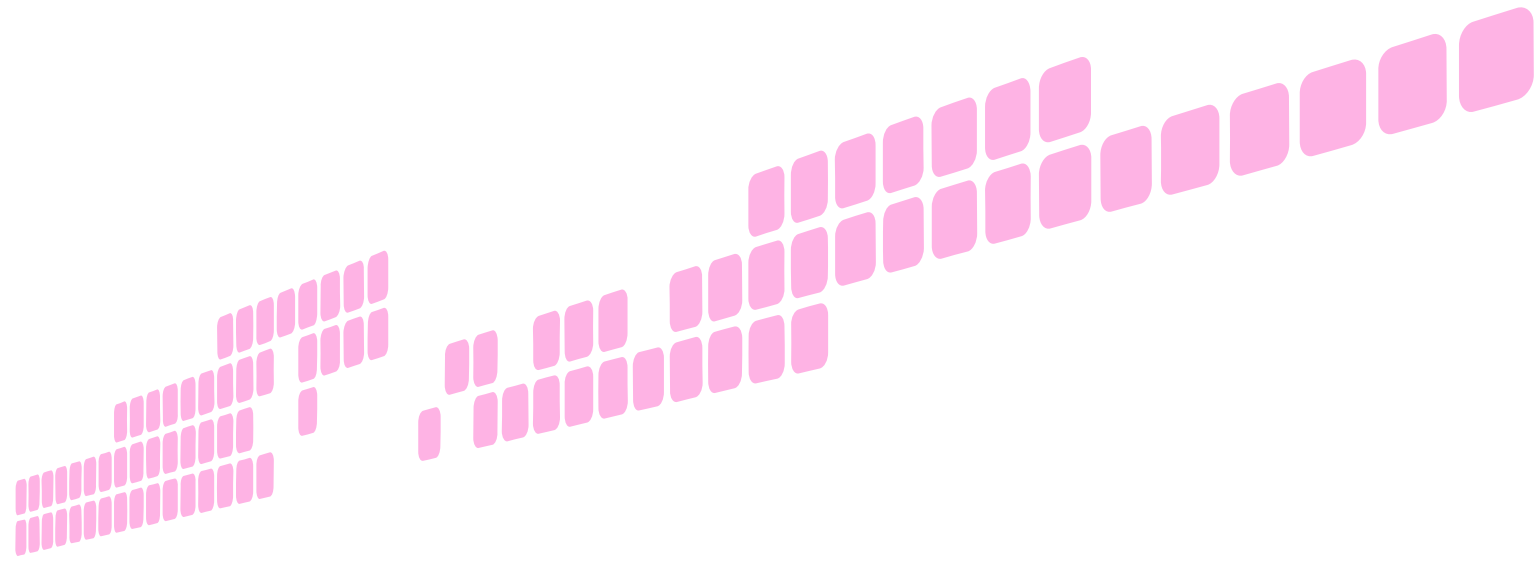
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Advanced LED Packaging Manufacturer



01 BRIEF INTRODUCTION



The Northern Area of The Headquarter

Land area: 26000 sqm.
The production base of LED components and devices

The Southern Area of The Headquarter

Land area: 34600 sqm
The production base of LED and lighting products



Foshan NationStar Semiconductor Co.,Ltd.

Land area: 32000 sqm.
The production base of GaN LED chips for lighting

02 INDUSTRIAL CHAIN



Wafer

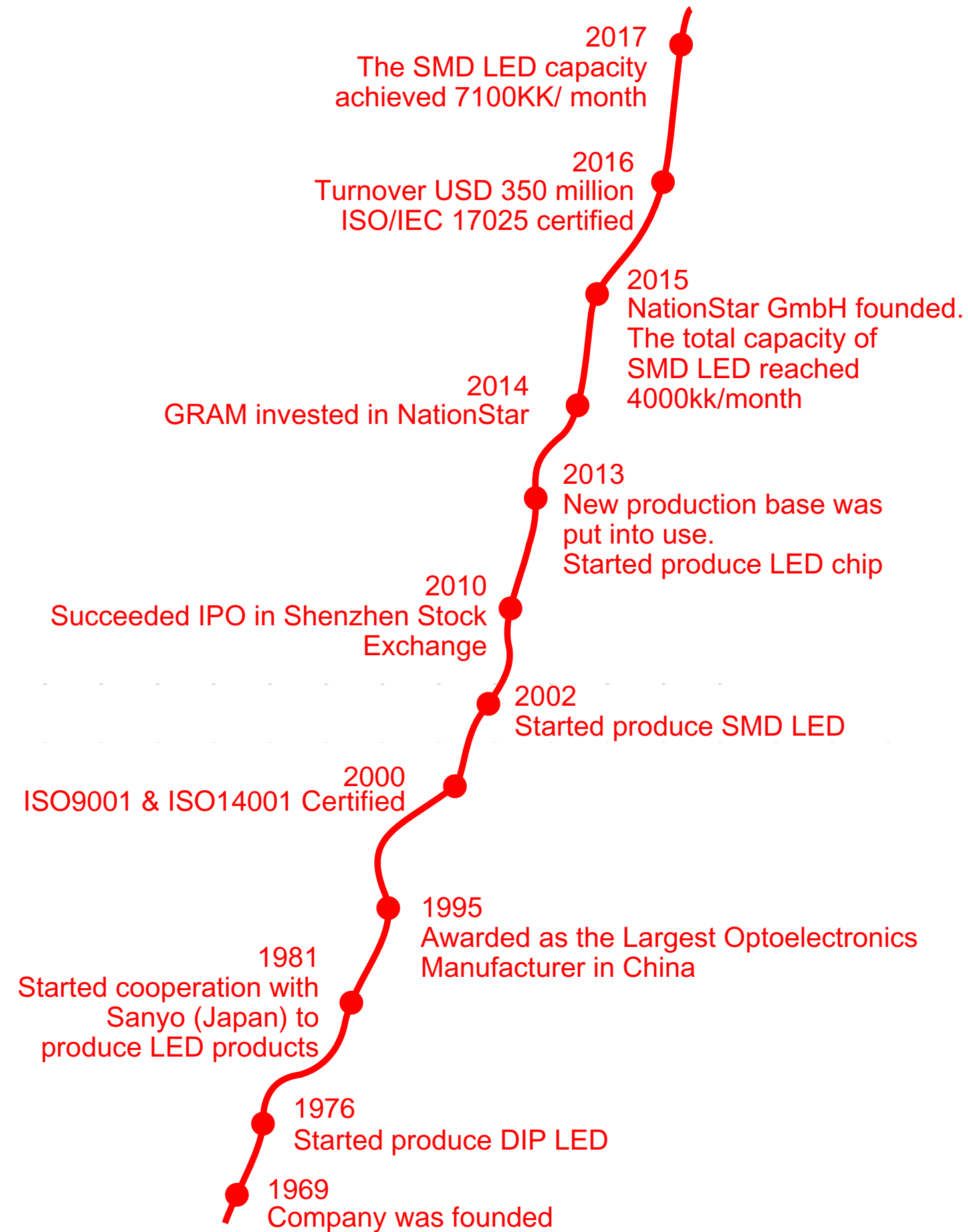


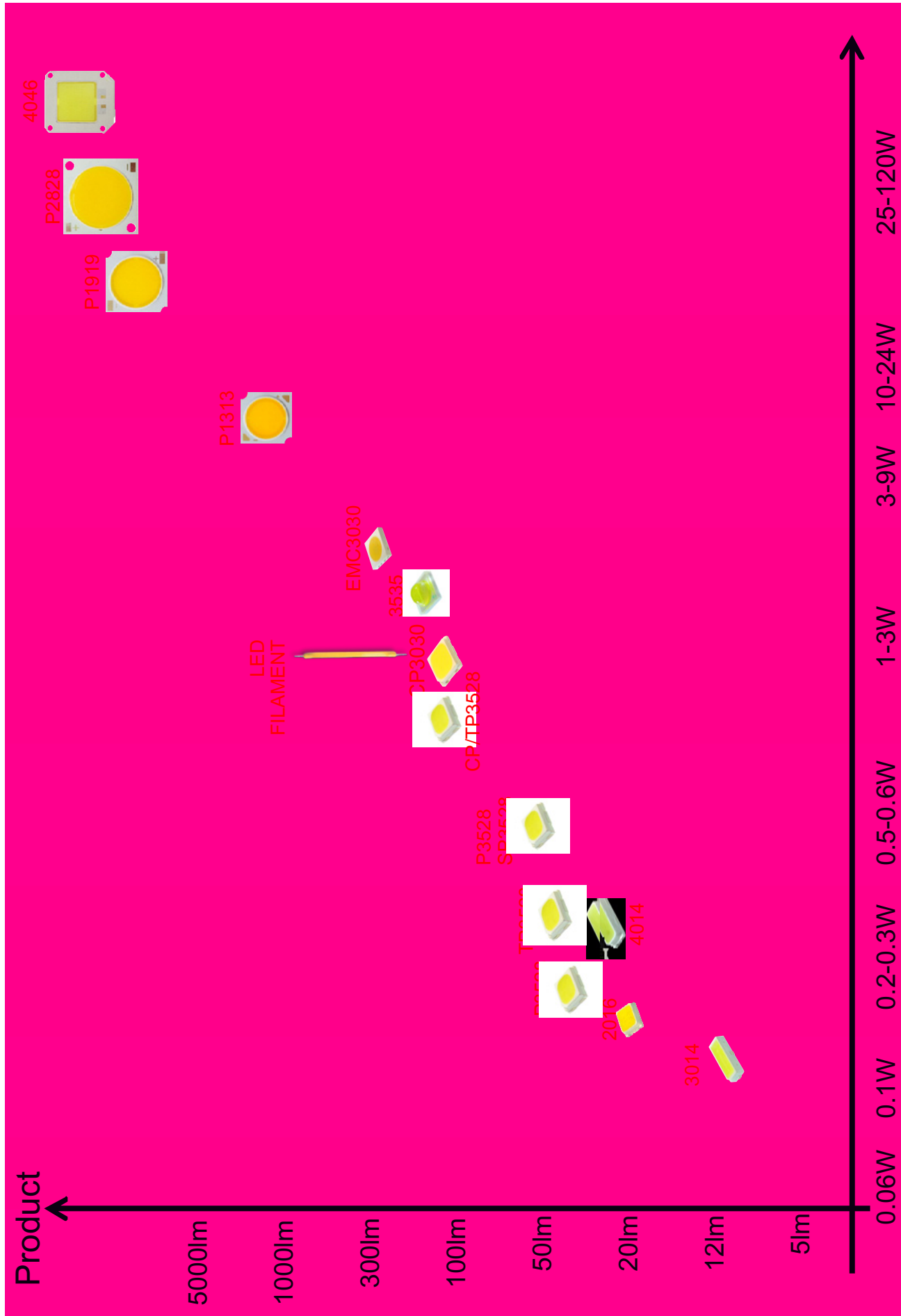
Chip



LED

02 HISTORY





3V 0.2W TOP White LED

P3528 Series

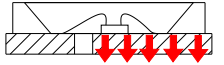


Features:

- 2835 package.
- Thin encapsulation with heat sink, vertical dissipation, multiple power options.
- Mature technology, universal applicability.
- Applicable to LED tube, linear light, bulb, downlight, panel light etc. cost-effective.
- Rated power: 0.2W.

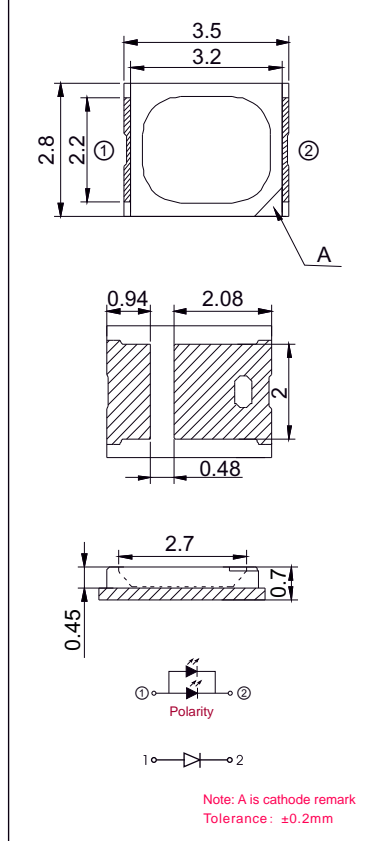


Thermal Dissipating Structure:



With a structure of the chip being placed on thermal pad the heat could be conducted to the PCB directly.

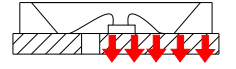
Dimensions/Unit:mm



Parameter/Ta=25°C:

Power	Color	Part number	Color Temp (K)	CRI Ra Min	I _F (mA) TEST	Φ _v (lm) Typ.	V _F (V) Typ.	Max Forward Current(mA)
0.2W	Natural White	FM-P3528WNS-460QH-R80	5600-6500	80	60	28-30	3.1	120
	Neutral White	FM-P3528WDS-460QH-R80	3700-4200	80	60	28-30	3.1	120
	Warm White	FM-P3528WLS-460QH-R80	2800-3200	80	60	26-28	3.1	120
0.2W	Natural White	FM-P3528WNS-460Q-R80	5600-6500	80	60	26-28	3.1	75
	Neutral White	FM-P3528WDS-460Q-R80	3700-4200	80	60	26-28	3.1	75
	Warm White	FM-P3528WLS-460Q-R80	2800-3200	80	60	24-26	3.1	75
0.2W	Natural White	FM-P3528WNS-460Q1-R80	5600-6500	80	60	24-26	3.1	75
	Neutral White	FM-P3528WDS-460Q1-R80	3700-4200	80	60	24-26	3.1	75
	Warm White	FM-P3528WLS-460Q1-R80	2800-3200	80	60	22-24	3.1	75

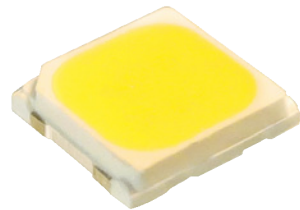
Ultra Bright 2835 LED



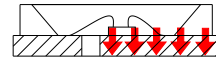


6V Easy-drive TOP White LED

CP3528 / CP3030 Series



Thermal Dissipating Structure:



With a structure of the chip being placed on thermal pad the heat could be conducted to the PCB directly.

Dimensions/Unit:mm



Note: A is cathode remark
Tolerance: ±0.2mm

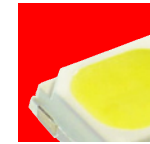
Features:

- Thin encapsulation with heat sink, efficient heat dissipation.
- Applicable to LED bulb, downlight etc, cost-effective.
- Rated power: 0.5W / 1W.



Parameter/Ta=25°C:

Power	Color	Part number	Color Temp (K)	CRI Ra Min	I _F (mA) TEST	Φ _v (lm) Typ.	V _F (V) Typ.	Max Forward Current(mA)
0.5W	Natural White	FM-CP3528WNS-460Q-R80	5600-6500	80	80	80-85	6.7	100
	Neutral White	FM-CP3528WDS-460Q-R80	3700-4200	80	80	80-85	6.7	100
	Warm White	FM-CP3528WLS-460Q-R80	2800-3200	80	80	55-60	6.7	100
1W	Natural White	FM-CP3528WNS-460WH-R80	5600-6500	80	150	120-130	6.4	200
	Neutral White	FM-CP3528WDS-460WH-R80	3700-4200	80	150	120-130	6.4	200
	Warm White	FM-CP3528WLS-460WH-R80	2800-3200	80	150	110-120	6.4	200
1W	Natural White	FM-CP3030WNS-460W-R80	5600-6500	80	180	127-140	6.4	200
	Neutral White	FM-CP3030WDS-460W-R80	3700-4200	80	180	127-140	6.4	200
	Warm White	FM-CP3030WLS-460W-R80	2800-3200	80	180	120-130	6.4	200

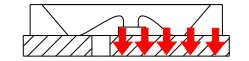


9V Easy-drive TOP White LED

TP3528 Series

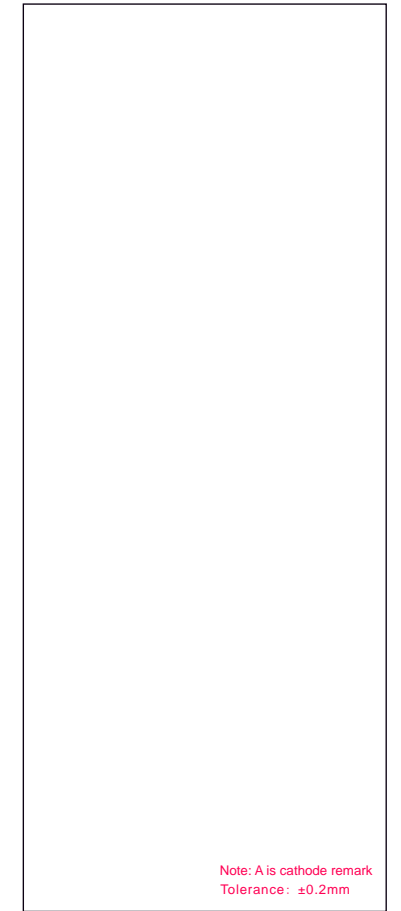


Thermal Dissipating Structure:



With a structure of the chip being placed on thermal pad the heat could be conducted to the PCB directly.

Dimensions/Unit:mm



Note: A is cathode remark
Tolerance: ±0.2mm

Features:

- 2835 package.
- 9V drive, low current, high power conversion efficiency.
- Thin encapsulation with heat sink, efficient heat dissipation.
- Applicable to LED bulb, downlight, module etc. cost-effective.
- Rated power: 0.3W / 1W.



Absolute Maximum Ratings:

Parameter	Symbol	0.3W Rating	1W Rating
Forward Current	I _F	35mA	120mA
Pulse Forward Current*	I _F (P)	100mA	200mA
Reverse Voltage	V _R	15V	15V
Working Temperature	T _{amb}	-30~+85°C	-30~+85°C
Storage Temperature	T _{stg}	-40~+100°C	-40~+100°C

Parameter/Ta=25°C:

Power	Color	Part number	Color Temp (K)	CRI Ra Min	I _F (mA) TEST	Φ _v (lm) Typ.	V _F (V) Typ.
0.3W	Natural White	FM-TP3528WNS-460R-R80	5600-6500	80	30	33-36	9.6
	Neutral White	FM-TP3528WDS-460R-R80	3700-4200	80	30	33-36	9.6
	Warm White	FM-TP3528WLS-460R-R80	2800-3200	80	30	30-33	9.6
1W	Natural White	FM-TP3528WNS-460QH-R80	5600-6500	80	100	125-135	9.3
	Neutral White	FM-TP3528WDS-460QH-R80	3700-4200	80	100	125-135	9.3
	Warm White	FM-TP3528WLS-460QH-R80	2800-3200	80	100	120-130	9.3

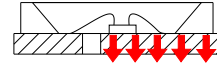


18V Easy-drive TOP White LED

SP3528 Series

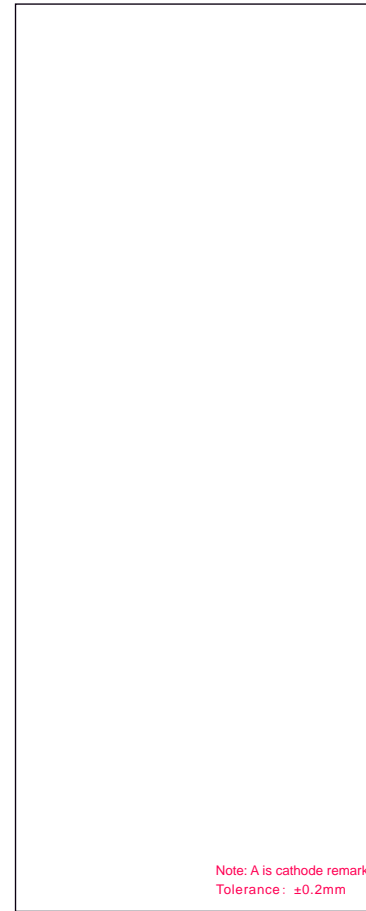


Thermal Dissipating Structure:



With a structure of the chip being placed on thermal pad the heat could be conducted to the PCB directly.

Dimensions/Unit:mm



Features:

- 2835 package.
- 18V drive, low current, high power conversion efficiency.
- Thin encapsulation with heat sink, efficient heat dissipation.
- Applicable to LED bulb, downlight etc, cost-effective.
- Rated power: 0.6W.



Absolute Maximum Ratings:

Parameter	Symbol	Rating
Forward Current	I_F	30mA
Pulse Forward Current	I_{FP}	100mA
Working Temperature	T_{amb}	$-30 \sim +85^\circ\text{C}$
Storage Temperature	T_{stg}	$-40 \sim +100^\circ\text{C}$

Parameter/ $T_a=25^\circ\text{C}$:

Power		CRI Ra Min	I_F (mA) TEST	Φ_v (lm) Typ.	V_F (V) Typ.
	FM-SP3528WNS-460R-R60	5600-6500	60	30	
	FM-SP3528WDS-460R-R60	3700-4200	60	30	
	FM-SP3528WLS-460R-R60	2800-3200	3	30	



3535 UV LED

3535 Series



Features:

- Ceramic PCB encapsulation, stable performance, high reliability.
- Low thermal resistance, good thermal dissipation.
- 365nm-405nm, can be used for curing, detecting and so on.
- Customized product available.
- Application: Nail lamp, 3D printer, Printing devices, Mothkilling lamp...
- Rated power: 1-3W

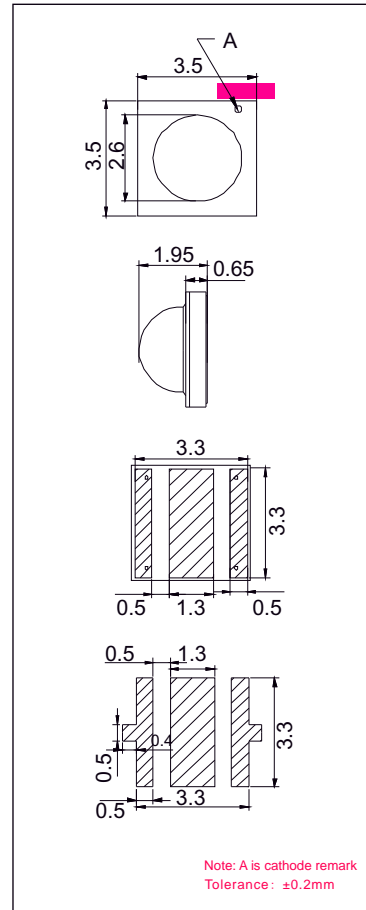
Absolute Maximum Ratings:

Parameter	Symbol	Rating
Forward Current	I_F	700mA
Pulse Forward Current*	I_{FP}	1000mA
Reverse Voltage	V_R	5V
Working Temperature	T_{amb}	-30~+85°C
Storage Temperature	T_{stg}	-40~+100°C

Parameter/ $T_a=25^\circ\text{C}$:

Part number	λ (nm)	I_F (mA) TEST	P_o (mW) Typ.	V_F (V) Typ.
FP-3535UV-BC	365	350	500	3.3
		350	600	3.45
		500	920	3.6
	375	700	1250	3.75
		350	580	3.45
		500	630	3.6
385	700	1150	3.8	
	350	450	3.6	
	500	620	3.8	
405	350	450	3.6	
	500	620	3.8	

Dimensions/Unit:mm



6363 UV LED

6363 Series



Features:

- Metallic and inorganic packaged.
- Low thermal resistance, good thermal dissipation.
- 275-285nm, generally used as sterilization, disinfection and detection applications.
- Customized product available
- Application: Water purifying machine, Mothkilling lamp...
- Rated power: 0.1-0.2W.

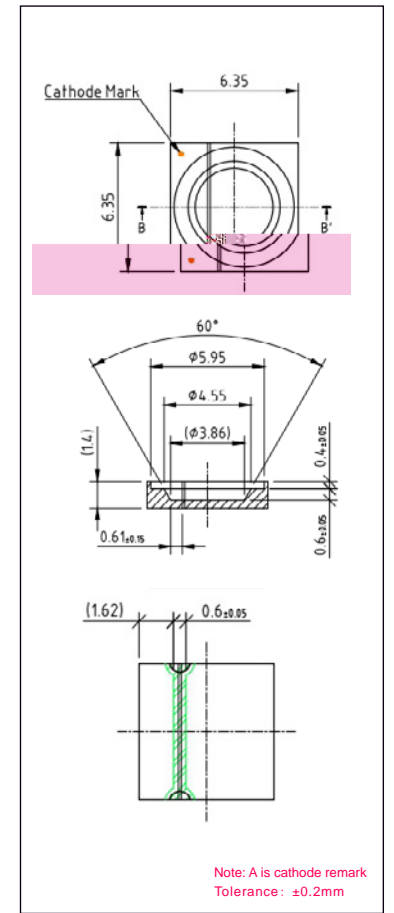
Absolute Maximum Ratings:

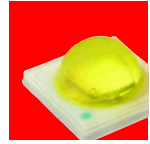
Parameter	Symbol	Rating
Forward Current	I_F	40mA
Pulse Forward Current*	I_{FP}	80mA
Reverse Voltage	V_R	7V
Working Temperature	T_{amb}	-30~+85°C
Storage Temperature	T_{stg}	-40~+100°C

Parameter/ $T_a=25^\circ\text{C}$:

Power	Part number	λ (nm)	I_F (mA) TEST	P_o (mW) Typ.	V_F (V) Typ.
0.1W	FP-6363UV-CM-B5	275-285	20	1.3-1.7	5-6

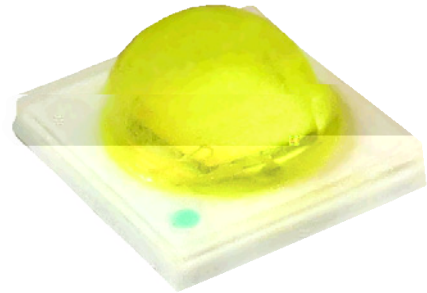
Dimensions/Unit:mm





Flip Chip Power LED

3535 Series



Features:

- Ceramic PCB encapsulation, low thermal resistance.
- Ultra bright, with a high luminous efficiency over 140 lm/w.
- Rated power: 1-3W.

Absolute Maximum Ratings:

Parameter	Symbol	Rating
Forward Current	I_F	350mA
Reverse Current	I_R	10mA
Forward Voltage	V_F	2.8V
Reverse Voltage	V_R	5V
Power Dissipation	P	1W
Operating Temperature	T	-40°C~100°C

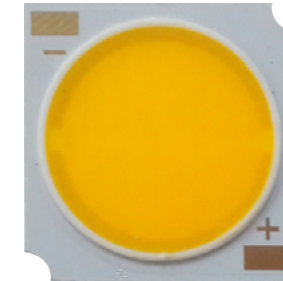
Parameter/ $T_a=25^\circ\text{C}$:

Part number	Color Temp (K)	CRI Ra Min	I_F (mA) TEST	V_F (V) Typ.

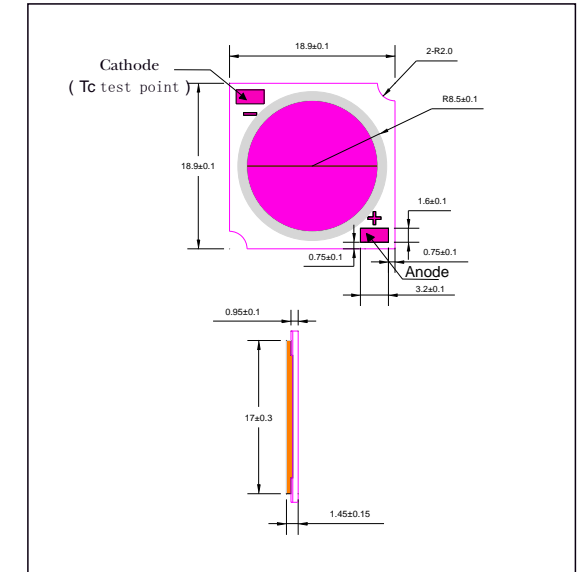


High-conductivity Metal PCB COB

P1919 Series



Dimensions/Unit:mm



Tolerance: ±0.2mm

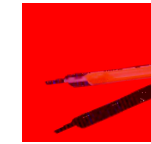
Features:

- Use aluminum PCB with high reflective material.
- Applicable to track light, flood light, street light...
- Uniform high quality illumination, Erp/ANSI-compliant color binning structure with 3 / 4 SDCM options.
- Low-voltage and high-voltage DC options.
- Customized product available
- Rated power: 18-35W

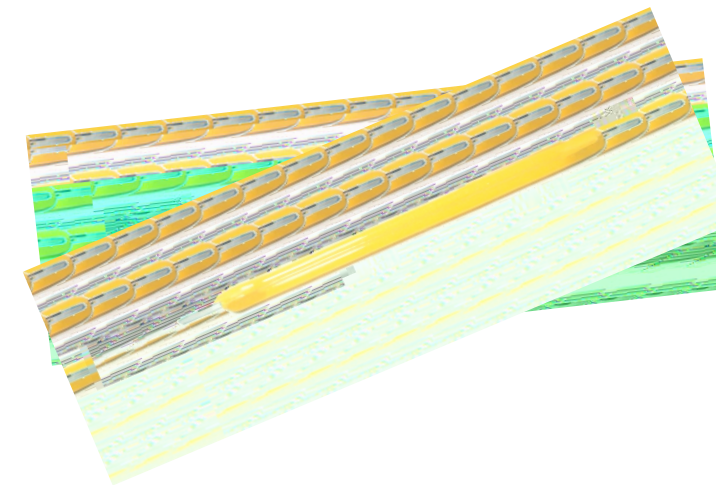


Parameter/Ta=25°C (18-35W):

Model	Beam Angle	Color Temperature	Rated Power	Rated Current	Rated Voltage	Rated Power
MC-P1919CW-24W0601204	5700	80	2520-2786	600	34.2-42.5	31.8
MC-P1919NW-24W0601204	4000	80	2520-2786	600		31.8
MC-P1919WW-24W0601204	3000	80	2413-2667	600		
MC-P1919CW-30W0751205	5700	80	3146-3478			
MC-P1919NW-30W0751205	4000	80	3146-3478			
MC-P1919WW-30W0751205	3000	80	3083-3385			

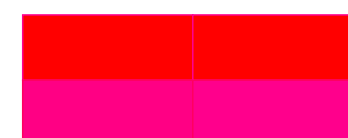


LED Filament



1. An excellent structural strength with sapphire coated by phosphor
2. excellent stability is achieved by seamless jointing of electrodes at two ends
3. encapsulated with heat-resisting material to ensure high reliability and low light failure
4. encapsulation with multi-chips, completely contact with air, good dissipation

MC-C0840RW-0-8W0012801	2700	80	130	10	78-92	0.8
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(2) E273

	CCT	X	Y	a	b		Step
E273	2670-2790	0.4630	0.4200	0.002578	0.001337	57.28	3