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LED背光

产品手册

 **佛山市国星光电股份有限公司**
FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD

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白光器件事业部
Lighting LED Business Unit



国星光电始建于1969年，1976年开始LED的生产制造，2010年挂牌上市，是中国大陆最早的LED企业，国内最大的LED制造企业，国内首家以LED为主业的首发上市公司，近年，公司位居LED封装市场全球前列。

2005年，国星光电正式投产LED背光器件，至今已积累了丰富的市场经验和技術储备，是知名显示器厂商的主要供应商，在设备、生产效率、BOM成本、专利等具有将强的优势，业务适配性强，配合程度高。

白光器件事业部致力于研发、生产、销售Mini LED背光产品、智能照明器件、健康照明器件、车灯器件以及LED白光器件等产品。

Founded in 1969, NATIONSTAR began to produce and manufacture LED in 1976, and was listed in 2010. NATIONSTAR is the earliest LED enterprise in Mainland China, the largest LED manufacturing enterprise in China, and the first listed company in China with LED as the main industry. In recent years, NATIONSTAR ranks the top in the LED packaging market in the world.

In 2005, NATIONSTAR officially put into production of LED backlight devices, and has accumulated rich market experience and technical reserves so far. As a major supplier of well-known display manufacturers, NATIONSTAR has strong advantages in equipment, production efficiency, BOM cost, patent, etc., with strong business adaptability and high degree of cooperation.

Lighting LED Business Unit is committed to research and development, production and sales of Mini LED backlight products, intelligent lighting devices, health lighting devices, car light devices and LED white light devices.

Mini-SMD Series

2016 series

Features:

- SMD封装，一致性良好
- 发光角度大，亮度高
- 高可靠性
- 功率：0.03W
- SMD encapsulation with good uniformity
- Large emitting angle and high brightness
- High reliability
- Rate power: 0.03W



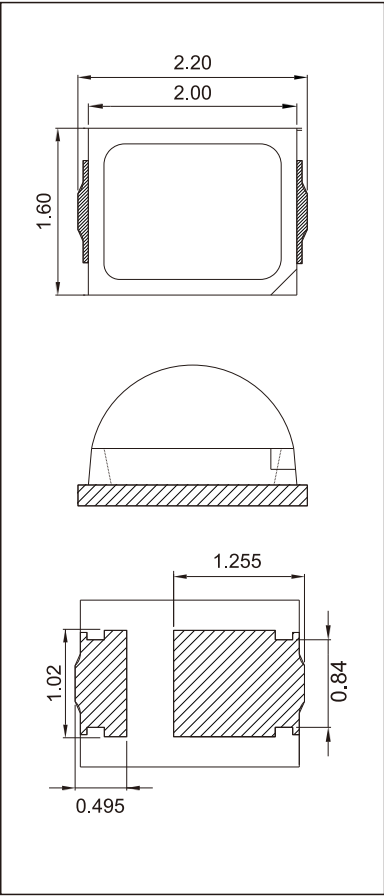
极限参数:

参数名称	符号	数值
结温	T _J	125℃
工作温度	T _{OPR}	-30~+85℃
储存温度	T _{STG}	-40~+100℃

产品参数/Ta=25℃:

Part No.	Color	Peak Wavelength(nm) Typ.	Emitting Angle(deg.) Typ.	IF(mA) TEST	P(mW) Typ.	VF(V) Typ.
FM-2016BS	Blue	447	140	10	16	2.8
FM-M2016BS			150	10	17.5	2.8

Dimension/Unit(mm):

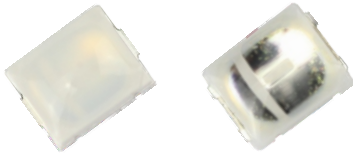


Mini-SMD Series

2835 series

Features:

- SMD封装，一致性良好
- 发光角度大，亮度高
- 高可靠性
- 功率：0.18W
- SMD encapsulation with good uniformity
- Large emitting angle and high brightness
- High reliability
- Rate power: 0.18W



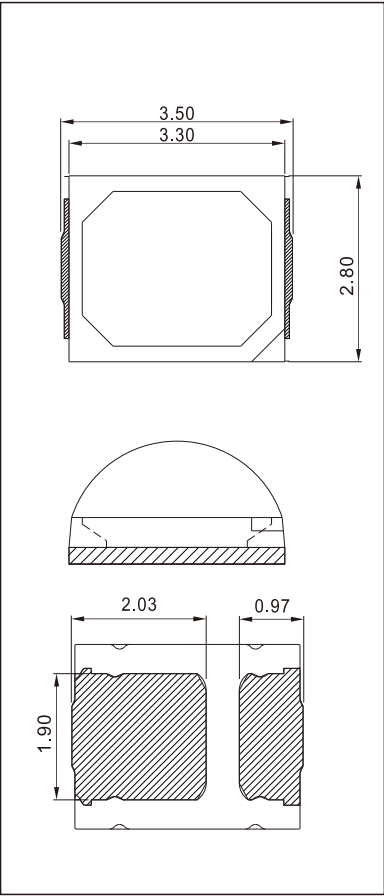
极限参数:

参数名称	符号	数值
结温	T _J	125℃
工作温度	T _{OPR}	-30~+85℃
储存温度	T _{STG}	-40~+100℃

产品参数/Ta=25℃:

Part No.	Color	Peak Wavelength(nm) Typ.	Emitting Angle(deg.) Typ.	IF(mA) TEST	P(mW) Typ.	VF(V) Typ.
FM-P3528BS	Blue	447	140	60	100	3.0
FM-M3528BS			150	60	110	3.0

Dimension/Unit(mm):



Mini-COB Series

MLED-M0509

Features:

- 薄型封装，混光距离小
- 高可靠性，高气密性
- 多种pitch设计，可根据客户需求定制
- 功率：3-100W
- Thin encapsulation and small optical distance
- High reliability and air-tightness
- Applicable with various pitch design and can be further customized
- Rate power: 3~100W



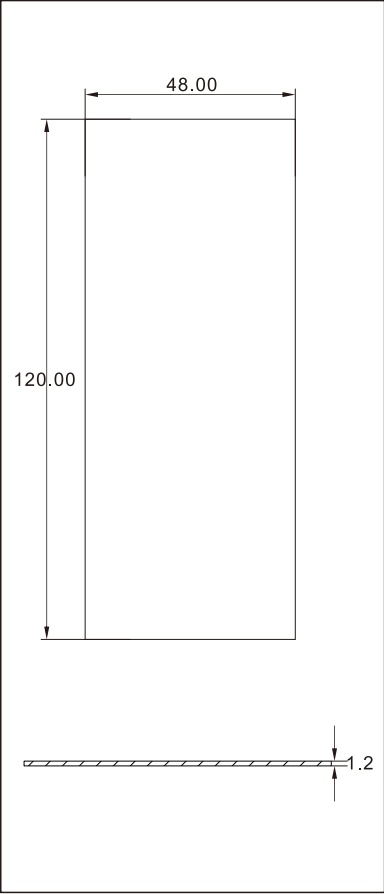
极限参数:

参数名称	符号	数值
正向电流(单路)	I _F	10mA
正向脉冲电流(单路)	I _{FP}	20mA
结温	T _J	125°C
工作温度	T _{OPR}	-30~+85°C
储存温度	T _{STG}	-40~+100°C

产品参数/Ta=25°C:

Part No.	Color	Peak Wavelength(nm) Typ.	Chip Qty. (pcs)	IF(mA) TEST	VF(V) Typ.	Power (W)
MLED-M0509-P30	Blue	445-460	900	180	70	12.6
MLED-M0509-P40			360	200	25	5.0
MLED-M0509-P50			240	120	27	3.4
MLED-M0509-P15			3200	800	56	44.8
MLED-M0509-P10			6944	1240	78	97.2

Dimension/Unit(mm):

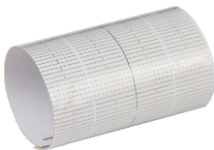


Mini-COB Series

MLED-M0509 Flexible

Features:

- 超薄封装
- 可做成不同弯曲形态
- 多种pitch设计，可根据客户需求定制
- 功率：8-20W
- Ultra-thin encapsulation
- Can be applied to different curved shapes
- Applicable with various pitch design and can be further customized
- Rate power: 8~20W



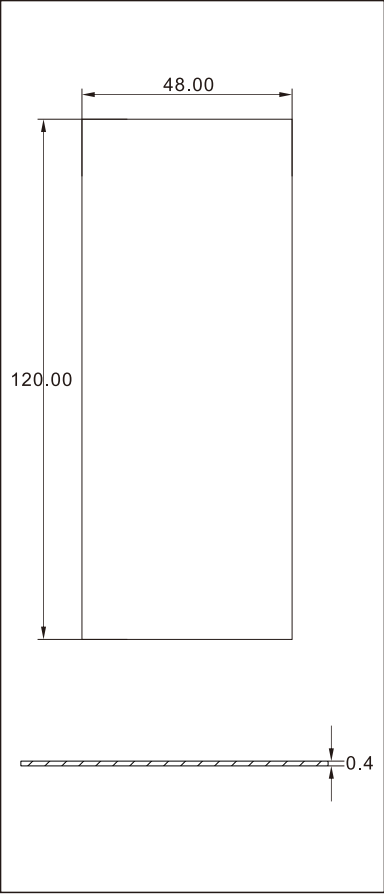
极限参数:

参数名称	符号	数值
正向电流(单路)	I _F	5mA
正向脉冲电流(单路)	I _{FP}	20mA
结温	T _J	125°C
工作温度	T _{OPR}	-30~+85°C
储存温度	T _{STG}	-40~+100°C

产品参数/Ta=25°C:

Part No.	Color	Peak Wavelength(nm) Typ.	Chip Qty. (pcs)	IF(mA) TEST	VF(V) Typ.	Power (W)
MLED-M0509-P15	Blue	445-470	3200	160	56	8.6
MLED-M0509-P10			6944	248	78	18.8

Dimension/Unit(mm):



Traditional Series

4014

Features:

- 垂直散热结构，工艺成熟，性能稳定
- 亮度高，可靠性高，抗静电能力强
- 适合侧入式背光产品，如MNT、TV背光应用
- 功率：0.2W/0.4W

- Vertical thermal dissipating structure with stable performance
- High brightness, high reliability and high ESD level
- Applicable to side-view backlight products, such as MNT, TV backlight
- Rate power: 0.2W & 0.4W



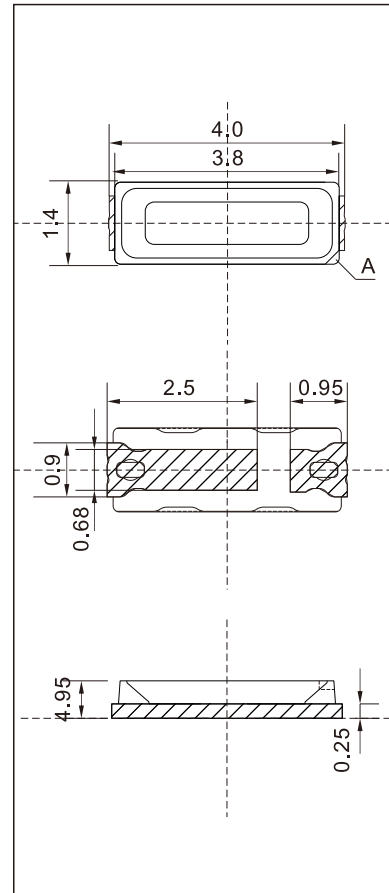
极限参数:

参数名称	符号	数值
正向电流(单路)	I_F	75mA/0.2W, 150mA/0.4W
正向脉冲电流(单路)	I_{FP}	200mA/0.2W, 300mA/0.4W
反向电压	V_R	5V
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^\circ\text{C}$:

Power	Part No.	Cx/Cy	CRI Min	I_F (mA) TEST	Φ_v (lm) Typ.	V_F (V) Typ.
0.2W	FM-4014WS-460Q	0.30, 0.28	/	60	21	3.2
0.2W	FM-4014WS-460U	0.30, 0.28	/	60	22	3.1
0.2W	FM-4014WS-460X	0.29, 0.27	/	60	24	2.9
0.4W	FM-4014WS-460WS	0.26, 0.24	/	120	38	3.2
0.4W	FM-4014WS-460W-SG	0.26, 0.22	/	120	34	3.0

Dimension/Unit(mm):



Traditional Series

4012

Features:

- 尺寸更小，更具性价比
- 亮度高，可靠性高，抗静电能力强
- 适合侧入式背光产品，可应用于2.0T导光板，有利于产品薄型化设计
- 功率：0.2W/0.4W

- Small size, cost-effective
- High brightness, high reliability and high ESD level
- Applicable to side-view backlight products, suitable with 2.0T LGP
- Rate power: 0.2W & 0.4W



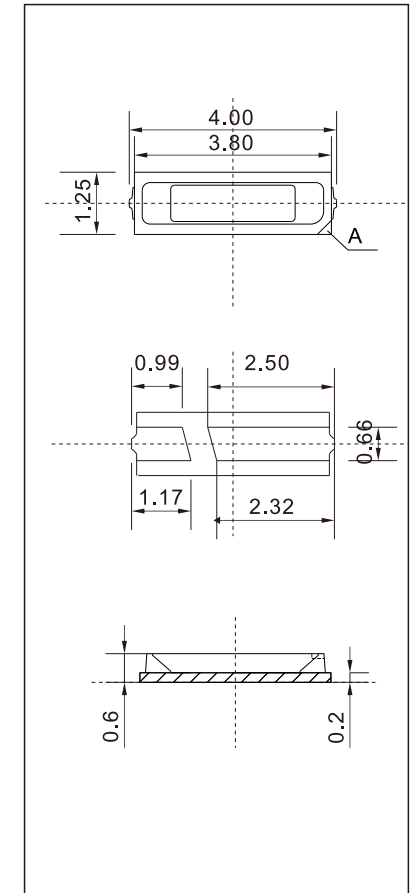
极限参数:

参数名称	符号	数值
正向电流(单路)	I_F	75mA/0.2W, 150mA/0.4W
正向脉冲电流(单路)	I_{FP}	200mA/0.2W, 300mA/0.4W
反向电压	V_R	5V
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^\circ\text{C}$:

Power	Part No.	Cx/Cy	CRI Min	I_F (mA) TEST	Φ_v (lm) Typ.	V_F (V) Typ.
0.2W	FM-4012WS-460X	0.30, 0.28	/	60	23	2.9
0.4W	FM-4012WS-460W	0.26, 0.24	/	120	35	3.2

Dimension/Unit(mm):



Traditional Series

8520

Features:

- 垂直散热结构，散热面积大，散热性能优良
 - 长边发光角度大，提升光色均匀性
 - 亮度高，发光效率高
 - 适合侧入式背光产品
 - 功率：0.2W
- Vertical thermal dissipating structure, well thermal dissipation
 - Wide emitting angle, uniform light emission
 - High brightness, high luminous efficiency
 - Applicable to side-view backlight products
 - Rate power: 0.2W



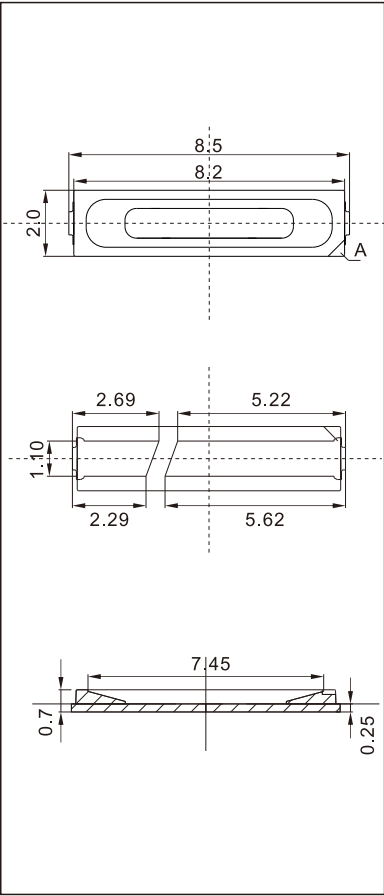
极限参数:

参数名称	符号	数值
正向电流(单路)	I_F	150mA
正向脉冲电流(单路)	I_{FP}	240mA
反向电压	V_R	5V
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^{\circ}\text{C}$:

Power	Part No.	Cx/Cy	CRI Min	I_F (mA) TEST	Φ_v (lm) Typ.	V F (V) Typ.
0.2W	FM-8520WS-460U	0.29, 0.27	/	60	23	3.0
0.2W	FM-8520WS-460X	0.29, 0.27	/	60	26	2.9
0.2W	FM-8520WS-460WH	0.29, 0.27	/	60	25	2.9

Dimension/Unit(mm):



Traditional Series

7016

Features:

- 垂直散热结构，散热面积大，散热性能优良
 - 长边发光角度大，提升光色均匀性
 - 适合侧入式背光产品
 - 功率：0.6W/0.8W
- Vertical thermal dissipating structure, well thermal dissipation
 - Wide emitting angle, uniform light emission
 - Applicable to side-view backlight products
 - Rate power: 0.6W & 0.8W



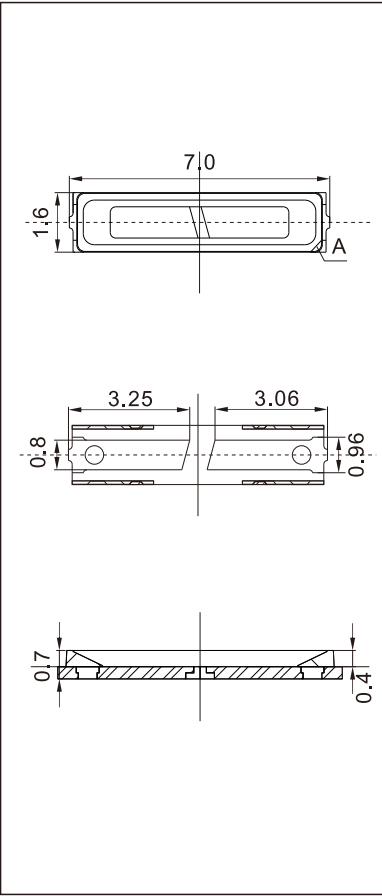
极限参数:

参数名称	符号	数值
正向电流(单路)	I_F	350mA/0.6W, 175mA/0.8W
正向脉冲电流(单路)	I_{FP}	1000mA/0.6W, 500mA/0.8W
反向电压	V_R	5V
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^{\circ}\text{C}$:

Power	Part No.	Cx/Cy	CRI Min	I_F (mA) TEST	Φ_v (lm) Typ.	V F (V) Typ.
0.4W	FM-DP7016WS-460W	0.28, 0.26	/	120	42	3.1
0.4W	FM-DP7016WS-460X	0.28, 0.26	/	120	46	3.1
0.6W	FM-DP7016WS-460X-SG	0.26, 0.22	/	205	70	3.1
0.8W	FM-CP7016WS-460W	0.26, 0.22	/	120	90	6.2

Dimension/Unit(mm):



Traditional Series

7020

Features:

- 薄型封装
- 更好的导热性能
- 高光效
- 功率: 0.2W
- Ultra-thin encapsulation
- Excellent heat resistance
- High luminous efficiency
- Rate power: 0.2W



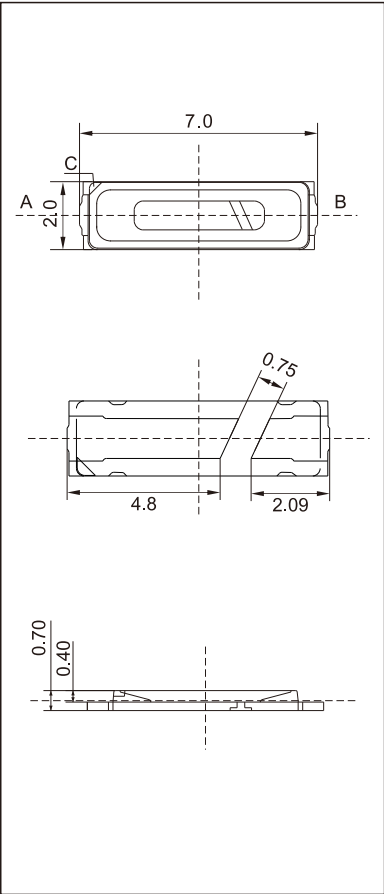
极限参数:

参数名称	符号	数值
正向电流(单路)	I_F	100mA
正向脉冲电流(单路)	I_{FP}	240mA
结温	T_J	125°C
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^{\circ}\text{C}$:

Part No.	Cx/Cy	I_F (mA) TEST	Φ_v (lm) Typ.	V_F (V) Typ.
FM-7020WS-460X1	0.29, 0.27	70	33	2.9

Dimension/Unit(mm):

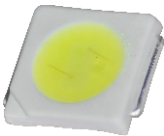


Traditional Series

EMC3030

Features:

- EMC封装结构
- 垂直散热结构, 工艺成熟, 性能稳定
- 发光效率高, 可靠性高
- 适合直下式背光产品
- 功率: 1.5W
- EMC Leadframe
- Vertical thermal dissipating structure with stable performance
- High luminous efficiency, high reliability
- Applicable to Top-view backlight products
- Rate power: 1.5W



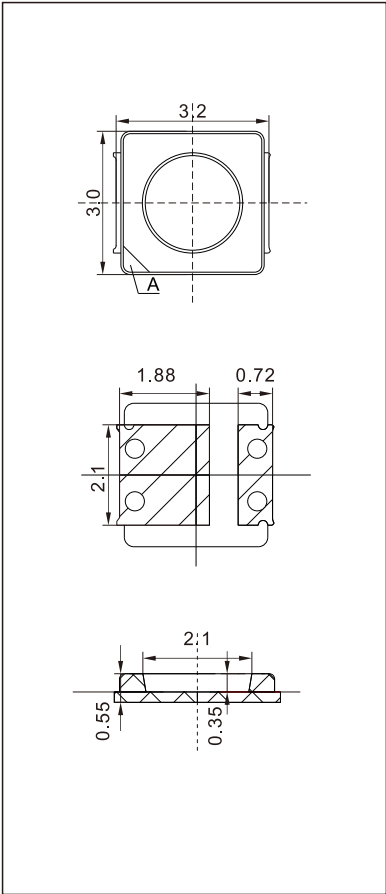
极限参数:

参数名称	符号	数值
正向电流	I_F	600mA
正向脉冲电流	I_{FP}	1200mA
反向电压	V_R	5V
工作温度	T_{OPR}	-30~+85°C
储存温度	T_{STG}	-40~+100°C

产品参数/ $T_a=25^{\circ}\text{C}$:

Power	Part No.	Cx/Cy	CRI Min	I_F (mA) TEST	Φ_v (lm) Typ.	V_F (V) Typ.
1.5W	FM-DE3030WS-460WH	0.27, 0.24	/	400	130	3.3
1.5W	FM-DE3030WS-460WH1	0.27, 0.24	/	400	135	3.2
2.0W	FM-DE3030WS-460WH2	0.27, 0.24	/	600	190	3.4
1.5W	FM-E3030WS-460X	0.27, 0.24	/	400	125	3.5
1.5W	FM-E3030WS-460XH	0.27, 0.24	/	400	135	3.5
1.5W	FM-CE3030WS-460WH	0.27, 0.24	/	200	140	6.4
1.5W	FM-CE3030WS-460WH1	0.27, 0.24	/	200	145	6.4

Dimension/Unit(mm):



Traditional Series

SMC3030

Features:

- SMC支架
- 垂直散热结构
- 高光效，高可靠性
- 功率：2-3W
- SMC Leadframe
- Vertical thermal dissipating
- High luminous efficiency, high reliability
- Rate power: 2-3W



极限参数:

参数名称	符号	数值
正向电流(单路)	I _F	450mA
正向脉冲电流(单路)	I _{FP}	500mA
结温	T _J	125℃
工作温度	T _{OPR}	-30~+85℃
储存温度	T _{STG}	-40~+100℃

产品参数/Ta=25℃:

Part No.	Cx/Cy	I _F (mA) TEST	Φ _v (lm) Typ.	V _F (V) Typ.
FM-CS3030WS-460X6	0.27, 0.24	300	205	6.2

Dimension/Unit(mm):

