

NATIONSTAR, LIGHTING UP THE WORLD

■ 2012 ■

LEDs For Display Applications

FOSHAN NATIONSTAR OPTOELECTRONICS CO.,LTD.

Add:No. 18 South Huabao Road, Chancheng District

Foshan, Guangdong, P.R. China

Web: www.nationstar.com

Email: ledsales@nationstar.com

Tel: 0086-757-82100231 82100230 82109310

Fax: 0086-757-82100200

TOP RGB LED










NEW! N3535 Series	01
B2020 Series	02
B3528 Series	03
3528 Series	04
H5050 Series	05
5050 Series	06



AAA

Recommendation for NationStar RGB LED Applications

(unit: mm)

Display and Decoration	Precise Application	Recommended NationStar RGB LEDs & Dimensions
Indoor	P3-P4	 2.1×2.1×1.0 B2020
	P5-P8	 3.5×2.8×1.9  3.5×2.8×1.9 B3528 3528
	High Contrast Ratio	 2.1×2.1×1.0  3.5×2.8×1.9 B2020 B3528
Outdoor	P5-P10	 3.7×3.5×2.8 N3535
	P8-P12	 5.4×5.0×2.8 H5050
	High Waterproofness	 3.7×3.5×2.8 N3535
Decoration	-	 5.4×5.0×1.6 5050

RGB LEDs Overview

1.The NationStar RGB LEDs include series of 2020, 3528, 3535 and 5050 with various brightness levels.



2.NationStar RGB LEDs mainly apply to displays of indoor, semi-outdoor, outdoor and other decorative illuminations.



Indoor LED Display



Outdoor LED Display

3.NationStar RGB LEDs are featured by bright color, strong waterproofness, high contrast ratio, easy to control , good reliability and long lifespan.

TOP RGB LED - Outdoor & high waterproofness N3535 LOONG Series



N3535 LOONG Series

Features:

- Optimal patented structure with high frame and short pins, suitable for glue-injection and lamp mask design.
- Dust proof, waterproof and UV proof.
- Compact package and apply to high density outdoor display of P5-P10.
- Apply to outdoor / semi-outdoor displays and other decorative illuminations.

Absolute Maximum Ratings :

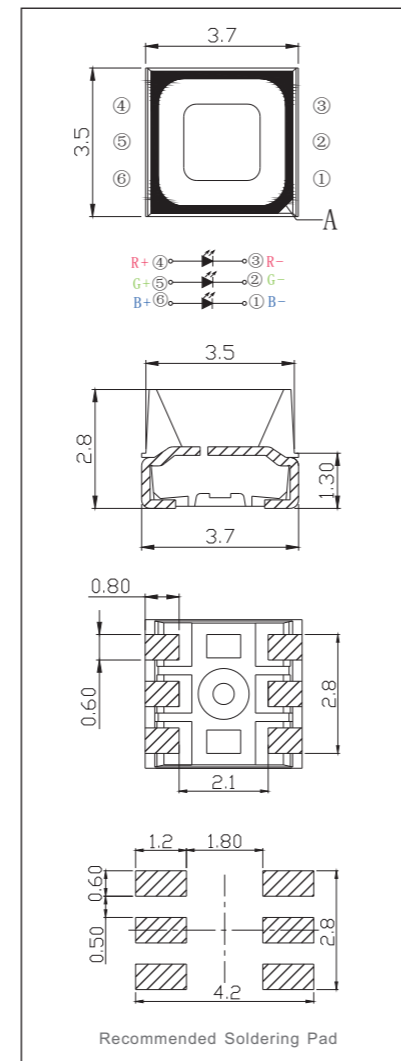
Parameter	Symbol	Rating
Forward Current	I _F	25mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width≤0.1ms, Duty Ratio≤1/10

Parameter/Ta=25°C:

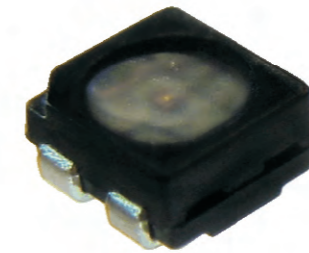
Level	Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _v (mcd) Typ.	V _F (V)	
						Typ.	Max
Standard Brightness	FM-N3535RGBW-SO	R	20	620	650	2.0	2.6
		G	20	520	1650	3.0	4.0
		B	20	470	450	3.0	4.0
High Brightness	FM-N3535RGBW-WQ	R	20	620	980	2.0	2.6
		G	20	520	2100	3.0	4.0
		B	20	470	500	3.0	4.0
Ultra-high Brightness	FM-N3535RGBW-WT	R	20	620	1050	2.0	2.6
		G	20	520	2400	3.0	4.0
		B	20	470	650	3.0	4.0

Outline Dimensions/ Unit: mm



Remark: A is Cathode
Tolerance: ±0.1mm

TOP RGB LED - Indoor, high density & high contrast ratio B2020 Series



B2020 Series

Features:

- Black frame, high contrast ratio and colorful.
- Diffusing encapsulation with epoxy resin, wide viewing angle, soft light and good conformity.
- Small size, light weight, P3.0 available, better thermal dissipation, high reliability and long lifespan.
- Apply to indoor displays and decorative illuminates.

Absolute Maximum Ratings :

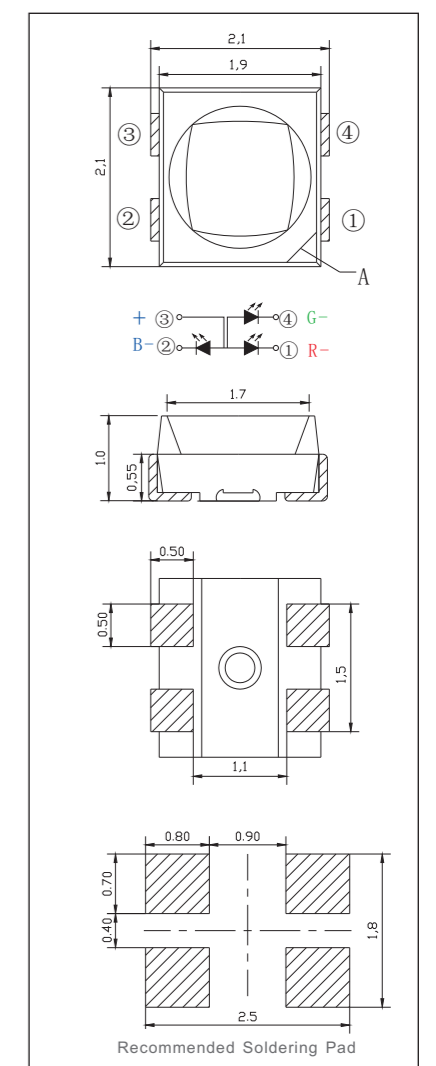
Parameter	Symbol	Rating
Forward Current	I _F	20mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width≤0.1ms, Duty Ratio≤1/10

Parameter/Ta=25°C:

Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _v (mcd) Typ.	V _F (V)	
					Typ.	Max
FM-B2020RGBW-HH	R	15	620	120	2.0	2.6
	G	8	520	340	3.0	4.0
	B	5	470	50	3.0	4.0

Outline Dimensions/ Unit: mm



Remark: A is Cathode
Tolerance: ±0.1mm

TOP RGB LED - Indoor & high contrast ratio B3528 Series



B3528 Series

Features:

- Black frame, high contrast ratio and colorful.
- Diffusing encapsulation with epoxy resin, wide viewing angle, soft light and good conformity.
- High brightness, high reliability, long lifespan and easy to control.
- Apply to indoor displays and decorative illuminates.

Absolute Maximum Ratings :

Parameter	Symbol	Rating
Forward Current	I _F	25mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width ≤ 0.1ms, Duty Ratio ≤ 1/10

Parameter/Ta=25°C:

Level	Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _V (mcd) Typ.	V _F (V)	
						Typ.	Max
High Red Brightness	FM-B3528RGBW-SH	R	20	620	320	2.0	2.6
		G	12	520	450	3.0	4.0
		B	12	470	80	3.0	4.0
High Brightness	FM-B3528RGBW-SQ	R	20	620	330	2.0	2.6
		G	12	520	550	3.0	4.0
		B	12	470	150	3.0	4.0

TOP RGB LED - General indoor 3528 Series



3528 Series

Features:

- White frame with black surface, high brightness and high contrast ratio.
- Transparent encapsulation with epoxy resin, wide viewing angle, high reliability and good conformity.
- High brightness, high reliability and long lifespan.
- Apply to indoor displays and decorative illuminates.

Absolute Maximum Ratings :

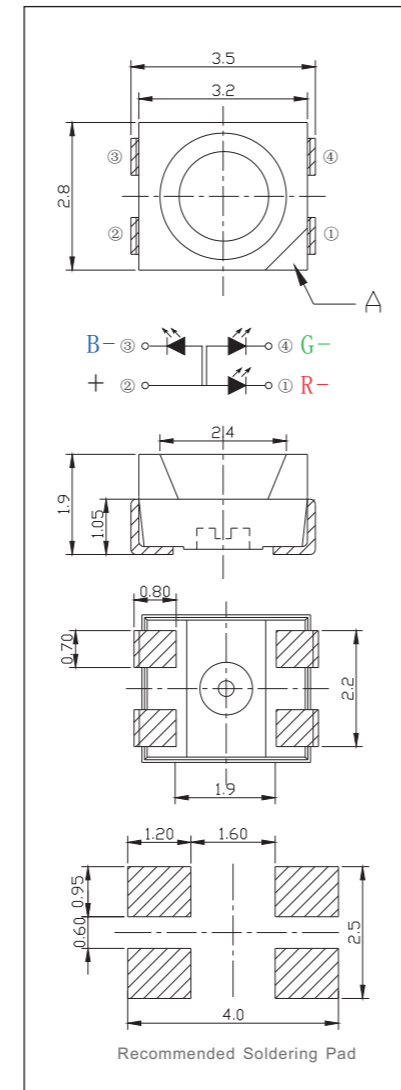
Parameter	Symbol	Rating
Forward Current	I _F	20mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width ≤ 0.1ms, Duty Ratio ≤ 1/10

Parameter/Ta=25°C:

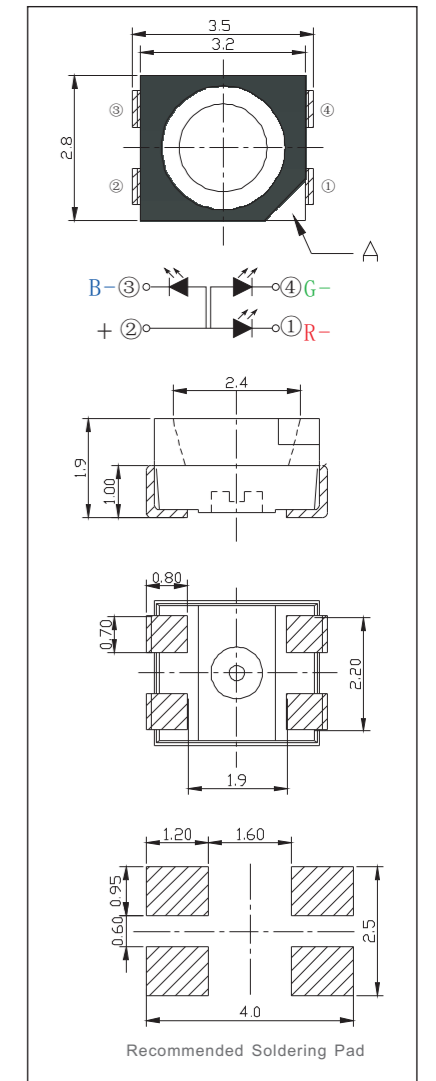
Level	Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _V (mcd) Typ.	V _F (V)	
						Typ.	Max
Standard Brightness	FM-3528RGBK-HH	R	20	620	275	2.0	2.6
		G	12	520	900	3.0	4.0
		B	12	470	180	3.0	4.0
High Red Brightness	FM-3528RGBK-SH	R	20	620	600	2.0	2.6
		G	12	520	820	3.0	4.0
		B	12	470	155	3.0	4.0
High Brightness	FM-3528RGBW-WQ	R	20	620	720	2.0	2.6
		G	12	520	1000	3.0	4.0
		B	12	470	210	3.0	4.0

Outline Dimensions/ Unit: mm



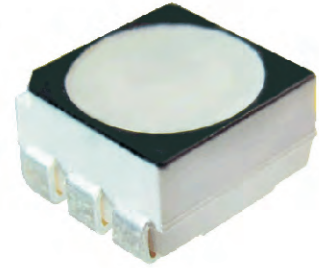
Remark: A is Cathode
Tolerance: ±0.1mm

Outline Dimensions/ Unit: mm



Remark: A is Cathode
Tolerance: ±0.1mm

TOP RGB LED - Outdoor, high frame with waterproofness H5050 Series



H5050 Series

Features:

- White frame with black surface, high brightness and high contrast ratio.
- Diffusing encapsulation with epoxy resin, soft light and good conformity.
- High frame with short pins, suitable for glue-injection, high reliability, long lifespan and easy to control.
- Apply to outdoor, semi-outdoor displays, curtain displays and other decorative illuminates.

Absolute Maximum Ratings :

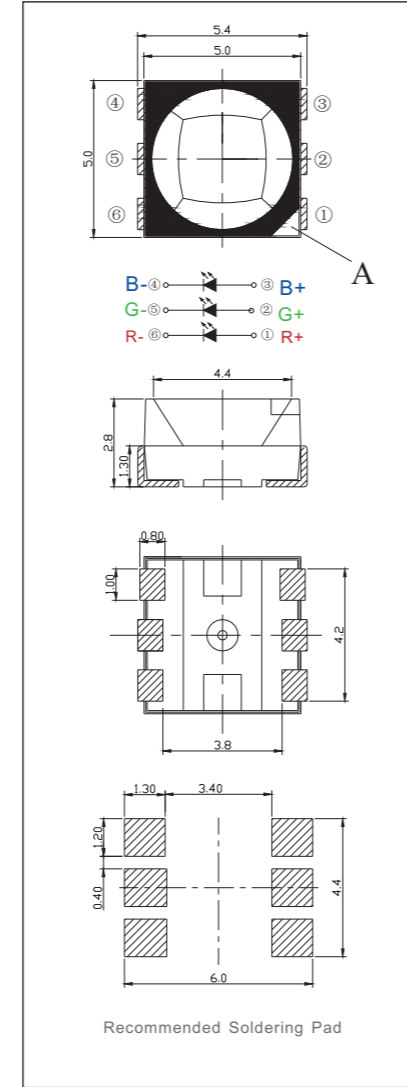
Parameter	Symbol	Rating
Forward Current	I _F	25mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width ≤ 0.1ms, Duty Ratio ≤ 1/10

Parameter/Ta=25°C:

Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _V (mcd) Typ.	V _F (V)	
					Typ.	Max
FM-H5050RGBW-WQ	R	20	620	850	2.0	2.6
	G	20	520	1950	3.0	4.0
	B	20	470	480	3.0	4.0

Outline Dimensions/ Unit: mm



Remark: A is Anode
Tolerance: ±0.1mm

TOP RGB LED - Ultra-thin 5050 Series



5050 Series

Features:

- White frame and high brightness.
- Transparent encapsulation with epoxy resin, wide viewing angle and high reliability.
- Ultra-thin design with light weight, high reliability, long lifespan and easy to control.
- Apply to strips, tubes, stage lights and other decorative illuminates.

Absolute Maximum Ratings :

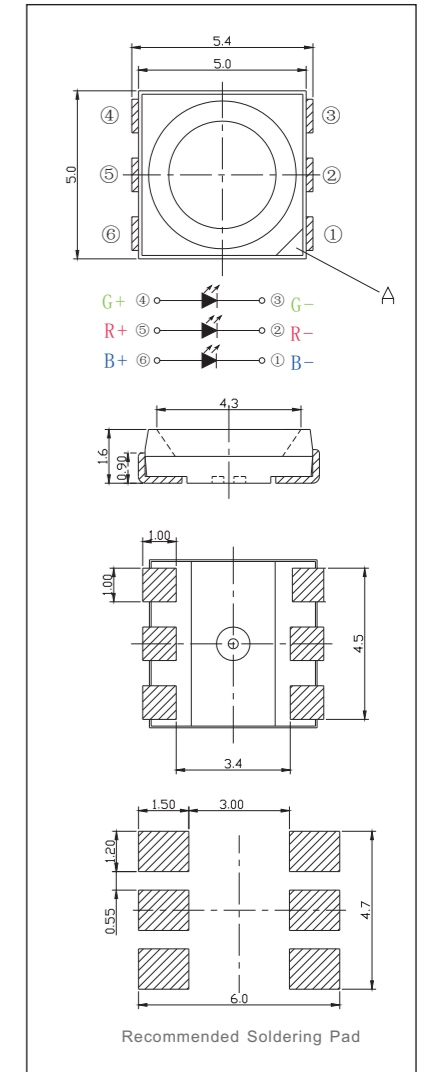
Parameter	Symbol	Rating
Forward Current	I _F	25mA
Pulse Forwards Current	I _{FP}	100mA
Reverse Voltage	V _R	5V
Working Temperature	T _{OPR}	-30~+85°C
Storage Temperature	T _{STG}	-40~+100°C

• Plus Width ≤ 0.1ms, Duty Ratio ≤ 1/10

Parameter/Ta=25°C:

Level	Part Number	Color	I _F (mA) TEST	λ _D (nm) Typ.	I _V (mcd) Typ.	V _F (V)	
						Typ.	Max
Standard Brightness	FM-5050RGBK-HH	R	20	620	300	2.0	2.6
		G	20	520	1300	3.0	4.0
		B	20	470	280	3.0	4.0
High Red Brightness	FM-5050RGBK-SH	R	20	620	620	2.0	2.6
		G	20	520	1300	3.0	4.0
		B	20	470	285	3.0	4.0

Outline Dimensions/ Unit: mm



Remark: A is Cathode
Tolerance: ±0.1mm