

www.oasistek.com

Taiwan Oasis Technology Co., Ltd.
李洲科技股份有限公司

Taipei Headquarter 台北總公司

27F, No.97, Sec.1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22175, Taiwan
22175 新北市汐止區新台五路1段97號27樓
Tel +886 2 7728 6688 / Fax +886 2 2697 3658

Taoyuan Manufacturing Center 桃園生產製造中心

No. 348, Shanying Rd., Gueishan Dist, Taoyuan City 33341, Taiwan
33341 桃園市龜山區山鶯路348號
Tel +886 3 273 1111 / Fax +886 3 273 1000

Dongguan Manufacturing Center 東莞生產製造中心

Zhen Xing Industrial City, Xie Gang, Dong Guan, Guang Dong, China
523591 廣東省東莞市謝崗鎮振興工業區
Tel +86 769 8976 6888 / Fax +86 769 8976 6889



SMD LED
LAMP LED
HIGH POWER

Product Catalogue



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SMD LED

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LAMP LED

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Oasistek[®] Taiwan Oasis Technology Co., Ltd.

Introduction

Taiwan Oasis Technology Co., Ltd., was established by Mr. Ming-Shun Lee in 1974 with an ideal to provide the marketplace simplicity, integrity reliability, progress, precision, and innovation.

The company started its life initially as a dedicated downstream LED technology manufacturing service focused on items such as plastic molding, injection and packing.

As Oasistek expanded its business vertically and upgraded its competencies, it soon began to move into producing a complete range of products, such as High Power LEDs, LAMP LEDs, SMD LEDs, LED Displays and Lighting. Additionally, Oasistek also offers customization manufacturing services to help customers' meet their sales targets.

In recent years, Oasistek has proudly introduced its LED Video Display and Lumichain™ series to the marketplace. Oasistek has been applauded globally and is reputed as a pioneer in Taiwan for being the 1st Taiwanese LED manufacturer to consistently supply the Japanese market.

Today, Oasistek's complete product line-up is now well represented worldwide and is globally known for their quality and cutting-edge technology. Delivering a full range of services and meeting customers' need is its mission and Oasistek is sincerely inviting you to be a partner and step forward together.



Taipei Headquarter



Taoyuan Manufacturing Center



Dongguan Manufacturing Center



Milestones

- 2016 The New headquarter has been relocated to U-Town Building in Xizhi Dist., New Taipei City.
- 2015 All new LED Spot Light product has been published.
- 2013 Launched a series 2013 The winner of Transformation and Upgrading of the processing Trade Industry Award held in Dongguan China, powerwas confirmed.of interior commercial lighting products.
- 2012 Increase the new production line, the production capacity in creased by more then 40KK/M.
Establishment of an independent R&D department, the main R&D direction of illumination and backlight.
Set up offices in Shenzhen and Qingdao and build up a unique channel marketing model.
- 2011 Launched a series of interior commercial lighting products.
- 2010 Launched "Star Vessel" which is functional and designing outdoor street light.
- 2009 Adopted a new brand identity "Oasistek" and a renewed spirit.
- 2008 China Hwa-Tai Factory completed. Adopted Green Policy. Lumichain trademark registered
- 2007 Began offering full product range from LEDs components to LED Video Displays.
- 2005 Announced partnership with leading Japanese corporation, White LED Technology. Lumichain series launched.
- 2004 Publicly Listed on the Taiwan Stock Exchange. ISO/TS 16949 Certified.
- 2003 Inaugurated fully automated line for LED Display production.
- 2001 Renamed to Taiwan Oasis Technology Co., Ltd. QS 9000 Certificated.
- 1999 Begun SMD LED mass production. China factories ISO 9002 certified.
- 1998 Approval of Stock Issuance. Patent awarded for LED Packaging technology. Taiwan factories ISO 9002 certified
- 1996 Kwei Shan, Taiwan factory completed. Completed LED products launched.
- 1994 Merged with Lihsin Co., Ltd. Patent awarded for advanced CD package design.
- 1990 Dong-Guan, China factory completed. Patent awarded for assembling exchangeable plastic injection mold structures.
- 1989 Chung-Ho, Taiwan factory completed. Manufacturing of LED Indicators and LED Displays.
- 1984 Nan-Kan, Taiwan No.2 completed. PCB Manufacturing.
- 1980 Nan-Kan, Taiwan Factory No.1 completed. Manufacturing of Plastic Molds, Plastic Injections and, Reflectors for LED.
- 1974 Taiwan Oasis Enterprise Co., Ltd founded.

Product Line

1

LED Component Group

- ▶ LED Lamps
- ▶ SMD LED
- ▶ Holder Lamp
- ▶ LED Display
 - ▶ Seven Segment
 - ▶ Alphanumeric
 - ▶ Light Bar
 - ▶ Dot Matrix

2

Lighting Module Group

- ▶ Lamp / Display Module
- ▶ Backlight Module
- ▶ Traffic Signal Module
- ▶ Street Lamp Module

3

System Group

- ▶ LED Cluster

4

Extended Customization Group

- ▶ Mold
- ▶ Plastic
 - ▶ Reflector
 - ▶ Light-guide Plate
 - ▶ Backlight Board
 - ▶ LED Through Holder
 - ▶ LED Cover Part
- ▶ PCB

SMD LED

TO-2835SWNQ-H1-E

1

2

3

4

5

6

1 Taiwan Oasistek

2 Illumination Color Code

SW ➤ 5000-9500K
FW ➤ 3500-5000K
TW ➤ 2600-3500K

3 CRI Index

N ➤ Ra≥80
M ➤ Ra≥75
L ➤ Ra≥70

4 Viewing Angel

N ➤ 20°
O ➤ 60°
P ➤ 90°
Q ➤ 120°
R ➤ 140°
S ➤ 175°
X ➤ None

5 Packaging Lens Type

C ➤ Small Size Chip
D ➤ Small Size Chip
E ➤ Medium-sized Chip
F ➤ Medium-sized Chip
H ➤ Medium-power Chip

6 Special Type (Option)

B ➤ Rubbing-up series (Black surface)
BU ➤ Reverse Packaging series
E ➤ Add antistatic Zener
A ➤ Triple crystal white lightmaterial,
Anode connected and Cathode seperated
N ➤ Reversed polarity material (chip)



Bi-Color

TO-3228BC-MRMGFF

1 2 3 4 5 5 6 6

Tri-Color

TO-3228BC-MRPBFGF

1 2 3 4 5 5 6 6 6

1 Taiwan Oasistek

2 Package Dimension and Type

Code	Dimension and Lens Type
3228	➤ [3.2mm x 2.8mm] Frame Type
3020	➤ [3.0mm x 2.0mm] Frame Type
5050	➤ [5.0mm x 5.0mm] Frame Type
2808	➤ [2.8mm x 0.8mm] Side Emitting
3806	➤ [3.8mm x 0.6mm] Side Emitting

3 Lens Type

Code	Lens Type
A	➤ Dome
B	➤ Plane
S	➤ Side View
T	➤ Thin Thickness (0.4mm for 1608 Package)
D	➤ Special Thickness (0.65mm)
K	➤ Black Plane

4 Lens Color

Code	Lens Color
C	➤ Water Clear
D	➤ Color Diffused
R	➤ Red Diffused (Fluorescent)
G	➤ Green Diffused (Fluorescent)
Y	➤ Yellow Diffused (Fluorescent)
W	➤ White Diffused
T	➤ Color Transparent
F	➤ Use Phosphors

5 Emitting Color Code

Single chip

Code	Color & Material	Wavelength (nm)
V	➤ Violet (GaN/SiC)	405
B	➤ Blue (InGaN/GaN)	468
BG	➤ Bluish Green(InGaN)	505
P	➤ Pure Green (InGaN/GaN)	525
G	➤ Yellow Green (GaP)	570
MG	➤ High Bright Green (AlGaInP)	572
Y	➤ Yellow (GaAsP/GaP)	585
MY	➤ High Bright Yellow (AlGaInP)	592
MA	➤ High Bright Amber (AlGaInP)	605
ME	➤ High Bright Orange(AlGaInP)	623
E	➤ Orange (GaAsP/GaP)	630
MR	➤ High Bright Red (AlGaInP)	630
MRL	➤ High Bright Red (AlGaInP)	640
R	➤ Red (GaP)	700

Color Temperature : 3000~3500 (eg.TO-3228BY-MWak)

Multi-Chip Combination of above chip code

6 Brightness Code

Code	Typical Luminous Intensity (mcd)
A	➤ 0.1~2.2
B	➤ 2.2~6.5
C	➤ 6.5~18.0
D	➤ 18.0~51.0
E	➤ 51.0~146.0
F	➤ 146.0~417.0
G	➤ 417.0~917.0
H	➤ 917.0~2015.0
K	➤ 2015.0~3406.0
M	➤ 3406.0~5756.0

TO-B0603BC-MR-E

1 2 3 4 5 6 7

1 Taiwan Oasistek

2 PCB Type Code Omitted if Normal

- A ▶ Slot from 0.35mm
- B ▶ Slot from 0.55mm
- D ▶ Slot from 1.10mm

3 Package Dimension and Type

Code	Dimension and Lens Type
3228	▶ [3.2mm x 2.8mm] Frame Type
3020	▶ [3.0mm x 2.0mm] Frame Type
5050	▶ [5.0mm x 5.0mm] Frame Type
3006	▶ [3.0mm x 0.6mm] Side Emitting
3806	▶ [3.8mm x 0.6mm] Side Emitting

4 Lens Type

Code	Lens Type
A	▶ Dome
B	▶ Plane
S	▶ Side View
T	▶ Thin Thickness (0.4mm for 1608 Package)
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C	▶ Water Clear
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MRL	▶ High Bright Red (AlGaInP)	640
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Color Temperature : 3000~3500 (eg.TO-3228BY-MWak)

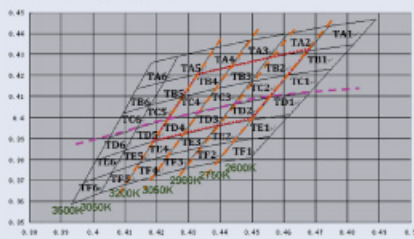
Multi-Chip Combination of above chip code

7 Brightness Code

Code	Typical Luminous Intensity (mcd)
A	▶ 0.1~2.2
B	▶ 2.2~6.5
C	▶ 6.5~18.0
D	▶ 18.0~51.0
E	▶ 51.0~146.0
F	▶ 146.0~417.0
G	▶ 417.0~917.0
H	▶ 917.0~2015.0
K	▶ 2015.0~3406.0
M	▶ 3406.0~5756.0



Color Temperature & TW



Note: [] is high bin

TA1

X	0.4889	0.4742	0.4677	0.4817	0.4889
Y	0.4466	0.4436	0.4319	0.4347	0.4466

TA2

X	0.4742	0.4613	0.4553	0.4677	0.4742
Y	0.4436	0.44	0.4284	0.4319	0.4436

TA3

X	0.4613	0.4489	0.4435	0.4553	0.4613
Y	0.44	0.4367	0.4246	0.4284	0.44

TA4

X	0.4489	0.438	0.433	0.4435	0.4489
Y	0.4367	0.433	0.4206	0.4246	0.4367

TA5

X	0.438	0.4267	0.4223	0.433	0.438
Y	0.433	0.4293	0.4171	0.4206	0.433

TA6

X	0.4267	0.4184	0.4137	0.4223	0.4267
Y	0.4293	0.4261	0.4138	0.4171	0.4293

TB1

X	0.4817	0.4677	0.4615	0.4749	0.4817
Y	0.4347	0.4319	0.4205	0.4232	0.4347

TB2

X	0.4677	0.4553	0.4496	0.4615	0.4677
Y	0.4319	0.4284	0.4171	0.4205	0.4319

TB3

X	0.4553	0.4435	0.4383	0.4496	0.4553
Y	0.4284	0.4246	0.4136	0.4171	0.4284

TB4

X	0.4435	0.433	0.4282	0.4383	0.4435
Y	0.4246	0.4206	0.4097	0.4136	0.4246

TB5

X	0.433	0.4223	0.418	0.4282	0.433
Y	0.4206	0.4171	0.4059	0.4097	0.4206

TB6

X	0.4223	0.4137	0.4093	0.418	0.4223
Y	0.4171	0.4138	0.402	0.4059	0.4171

TC1

X	0.4749	0.4615	0.4556	0.4682	0.4749
Y	0.4232	0.4205	0.4095	0.412	0.4232

TC2

X	0.4615	0.4496	0.444	0.4556	0.4615
Y	0.4205	0.4171	0.4063	0.4095	0.4205

TC3

X	0.4496	0.4383	0.4334	0.444	0.4496
Y	0.4171	0.4136	0.403	0.4063	0.4171

TC4

X	0.4383	0.4282	0.4235	0.4334	0.4383
Y	0.4136	0.4097	0.3993	0.403	0.4136

TC5

X	0.4282	0.418	0.4139	0.4235	0.4282
Y	0.4097	0.4059	0.395	0.3993	0.4097

TC6

X	0.418	0.4093	0.4051	0.4139	0.418
Y	0.4059	0.402	0.3906	0.395	0.4059

TD1

X	0.4682	0.4556	0.4498	0.4618	0.4682
Y	0.412	0.4095	0.3989	0.4013	0.412

TD2

X	0.4552	0.444	0.4387	0.4498	0.4552
Y	0.4095	0.4063	0.3958	0.3989	0.4095

TD3

X	0.444	0.4334	0.4285	0.4387	0.444
Y	0.4063	0.403	0.3921	0.3958	0.4063

TD4

X	0.4334	0.4235	0.419	0.4285	0.4334
Y	0.403	0.3993	0.3886	0.3921	0.403

TD5

X	0.4235	0.4139	0.4099	0.419	0.4235
Y	0.3993	0.395	0.3843	0.3886	0.3993

TD6

X	0.4139	0.4051	0.4009	0.4099	0.4139
Y	0.395	0.3906	0.3796	0.3843	0.395

TE1

X	0.4618	0.4498	0.4442	0.4555	0.4618
Y	0.4013	0.3989	0.3886	0.3909	0.4013

TE2

X	0.4498	0.4387	0.4335	0.4442	0.4498
Y	0.3989	0.3958	0.3857	0.3886	0.3989

TE3

X	0.4387	0.4285	0.4238	0.4335	0.4387
Y	0.3958	0.3921	0.3822	0.3857	0.3958

TE4

X	0.4285	0.419	0.4146	0.4238	0.4285
Y	0.3921	0.3886	0.3785	0.3822	0.3921

TE5

X	0.419	0.4099	0.406	0.4146	0.419
Y	0.3886	0.3843	0.3739	0.3785	0.3886

TE6

X	0.4099	0.4009	0.397	0.406	0.4099
Y	0.3843	0.3796	0.3689	0.3739	0.3843

TF1

X	0.4555	0.4442	0.4388	0.4495	0.4555
Y	0.3909	0.3886	0.3787	0.3808	0.3909

TF2

X	0.4335	0.4285	0.4388	0.4442	0.4335
Y	0.3857	0.3758	0.3787	0.3886	0.3857

TF3

X	0.4335	0.4238	0.4193	0.4285	0.4335
Y	0.3857	0.3822	0.3721	0.3758	0.3857

TF4

X	0.4238	0.4146	0.4103	0.4193	0.4238
Y	0.3822	0.3785	0.3682	0.3721	0.3822

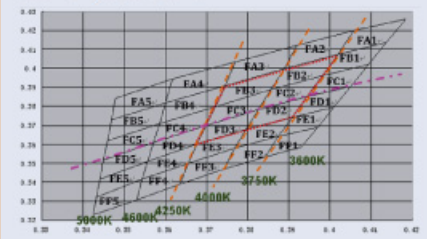
TF5

X	0.4146	0.406	0.4023	0.4103	0.4146
Y	0.3785	0.3739	0.3642	0.3682	0.3785

TF6

X	0.406	0.397	0.3931	0.4023	0.406
Y	0.3739	0.3689	0.3587	0.3642	0.3739

Color Temperature & FW



Note: [] is high bin

FA1

X	0.4184	0.4058	0.4019	0.4137	0.4184
Y	0.4261	0.42	0.4074	0.4138	0.4261

FA2

X	0.4058	0.392	0.3888	0.4019	0.4058
Y	0.42	0.4121	0.3996	0.4074	0.42

FA3

X	0.392	0.377	0.3745	0.3888	0.392
Y	0.4121	0.4035	0.3909	0.3996	0.4121

FA4

X	0.377	0.3618	0.3601	0.3745	0.377
Y	0.4035	0.3945	0.3818	0.3909	0.4035

FA5

X	0.3618	0.3479	0.3469	0.3601	0.3618
Y	0.3945	0.3841	0.3728	0.3818	0.3945

FB1

X	0.4137	0.4019	0.3981	0.4093	0.4137
Y	0.4138	0.4074	0.396	0.402	0.4138

FB2

X	0.4019	0.3888	0.3857	0.3981	0.4019
Y	0.4074	0.3996	0.3887	0.396	0.4074

FB3

X	0.3888	0.3745	0.3722	0.3857	0.3888
Y	0.3996	0.3909	0.3799	0.3887	0.3996

FB4

X	0.3745	0.3601	0.3586	0.3722	0.3745
Y	0.3909	0.3818	0.371	0.3799	0.3909

FB5

X	0.3601	0.3469	0.346	0.3586	0.3601
Y	0.3818	0.3728	0.362	0.371	0.3818

FC1

X	0.4093	0.3981	0.3944	0.4051	0.4093
Y	0.402	0.396	0.385	0.3906	0.402

FC2

X	0.3981	0.3857	0.3826	0.3944	0.3981
Y	0.396	0.3887	0.3781	0.385	0.396

FC3

X	0.3857	0.3722	0.3699	0.3826	0.3857
Y	0.3887	0.3799	0.3699	0.3781	0.3887

FC4

X	0.3722	0.3586	0.3572	0.3699	0.3722
Y	0.3799	0.371	0.3609	0.3699	0.3799

FC5

X	0.3586	0.346	0.345	0.3572	0.3586
Y	0.371	0.362	0.3516	0.3609	0.371

FD1

X	0.4051	0.3944	0.3909	0.4009	0.4051
Y	0.3906	0.385	0.3743	0.3796	0.3906

FD2

X	0.3944	0.3826	0.3797	0.3909	0.3944
Y	0.385	0.3781	0.3679	0.3743	0.385

FD3

X	0.3826	0.3699	0.3677	0.3797	0.3826
Y	0.3781	0.3699	0.3603	0.3679	0.3781

FD4

X	0.3699	0.3572	0.3558	0.3677	0.3699
Y	0.3699	0.3609	0.351	0.3603	0.3699

FD5

X	0.3572	0.345	0.3442	0.3558	0.3572
Y	0.3609	0.3516	0.3415	0.351	0.3609

FE1

X	0.4009	0.3909	0.3875	0.397	0.4009
Y	0.3796	0.3743	0.3641	0.3689	0.3796

FE2

X	0.3909	0.3797	0.3769	0.3875	0.3909
Y	0.3743	0.3679	0.3579	0.3641	0.3743

FE3

X	0.3797	0.3677	0.3656	0.3769	0.3797
Y	0.3679	0.3603	0.35	0.3579	0.3679

FE4

X	0.3677	0.3558	0.3544	0.3656	0.3677
Y	0.3603	0.351	0.3416	0.35	0.3603

FE5

X	0.3558	0.3442	0.3433	0.3544	0.3558
Y	0.351	0.3415	0.3318	0.3416	0.351

FF1

X	0.397	0.3875	0.3843	0.3931	0.397
Y	0.3689	0.3641	0.3531	0.3587	0.3689

FF2

X	0.3875	0.3769	0.3742	0.3843	0.3875
Y	0.3641	0.3579	0.3468	0.3531	0.3641

FF3

X	0.3769	0.3656	0.3636	0.3742	0.3769
Y	0.3579	0.35	0.3388	0.3468	0.3579

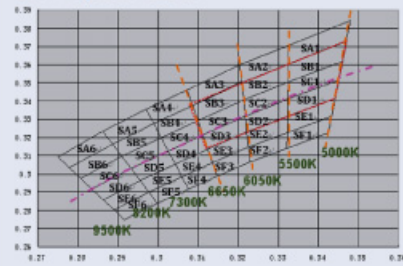
FF4

X	0.3656	0.3544	0.3531	0.3636	0.3656
Y	0.35	0.3416	0.3308	0.3388	0.35

FF5

X	0.3544	0.3433	0.3425	0.3531	0.3544
Y	0.3416	0.3318	0.3225	0.3308	0.3416

Color Temperature & SW



SA1

X	0.3479	0.3325	0.3324	0.3469	0.3479
Y	0.3841	0.3706	0.3604	0.3728	0.3841

SA2

X	0.3325	0.3204	0.3208	0.3324	0.3325
Y	0.3706	0.3597	0.3501	0.3604	0.3706

SA3

X	0.3204	0.3073	0.3087	0.3208	0.3204
Y	0.3597	0.3463	0.3377	0.3501	0.3597

SA4

X	0.3073	0.297	0.2989	0.3087	0.3073
Y	0.3463	0.3354	0.3276	0.3377	0.3463

SA5

X	0.297	0.2862	0.2887	0.2989	0.297
Y	0.3354	0.3235	0.3165	0.3276	0.3354

SA6

X	0.2862	0.2751	0.2779	0.2887	0.2862
Y	0.3235	0.3093	0.3034	0.3165	0.3235

SB1

X	0.3469	0.3324	0.3324	0.346	0.3469
Y	0.3728	0.3604	0.3505	0.362	0.3728

SB2

X	0.3324	0.3208	0.3213	0.3324	0.3324
Y	0.3604	0.3501	0.3408	0.3505	0.3604

SB3

X	0.3208	0.3087	0.31	0.3213	0.3208
Y	0.351	0.3377	0.3294	0.3408	0.351

SB4

X	0.3087	0.2989	0.3008	0.31	0.3087
Y	0.3377	0.3276	0.32	0.3294	0.3377

SB5

X	0.2989	0.2887	0.291	0.3008	0.2989
Y	0.3276	0.3165	0.3096	0.32	0.3276

SB6

X	0.2887	0.2779	0.2807	0.291	0.2887
Y	0.3165	0.3034	0.2976	0.3096	0.3165

SC1

X	0.346	0.3324	0.3323	0.345	0.346
Y	0.362	0.3505	0.3409	0.3516	0.362

SC2

X	0.3324	0.3213	0.3217	0.3323	0.3324
Y	0.3505	0.3408	0.3318	0.3409	0.3505

SC3

X	0.3213	0.31	0.3112	0.3217	0.3213
Y	0.3408	0.3294	0.3214	0.3318	0.3408

SC4

X	0.31	0.3008	0.3025	0.3112	0.31
Y	0.3294	0.32	0.3126	0.3214	0.3294

SC5

X	0.3008	0.291	0.2933	0.3025	0.3008
Y	0.32	0.3096	0.3029	0.3126	0.32

SC6

X	0.291	0.2807	0.2835	0.2933	0.291
Y	0.3096	0.2976	0.2917	0.3029	0.3096

SD1

X	0.345	0.3323	0.3322	0.3442	0.345
Y	0.3516	0.3409	0.3317	0.3415	0.3516

SD2

X	0.3323	0.3217	0.3221	0.3322	0.3323
Y	0.3409	0.3318	0.3231	0.3317	0.3409

SD3

X	0.3217	0.3112	0.3124	0.3221	0.3217
Y	0.3318	0.3214	0.3136	0.3231	0.3318

SD4

X	0.3112	0.3025	0.3043	0.3124	0.3112
Y	0.3214	0.3126	0.3054	0.3136	0.3214

SD5

X	0.3025	0.2933	0.2955	0.3043	0.3025
Y	0.3126	0.3029	0.2965	0.3054	0.3126

SD6

X	0.2933	0.2835	0.2863	0.2955	0.2933
Y	0.3029	0.2917	0.286	0.2965	0.3029

SE1

X	0.3442	0.3322	0.3322	0.3433	0.3442
Y	0.3415	0.3317	0.3228	0.3318	0.3415

SE2

X	0.3322	0.3221	0.3225	0.3322	0.3322
Y	0.3317	0.3231	0.3147	0.3228	0.3317

SE3

X	0.3221	0.3124	0.3136	0.3225	0.3221
Y	0.3231	0.3136	0.3061	0.3147	0.3231

SE4

X	0.3124	0.3043	0.3059	0.3136	0.3124
Y	0.3136	0.3054	0.2985	0.3061	0.3136

SE5

X	0.3043	0.2955	0.2977	0.3059	0.3043
Y	0.3054	0.2965	0.2901	0.2985	0.3054

SE6

X	0.2955	0.2863	0.2891	0.2977	0.2955
Y	0.2965	0.286	0.2802	0.2901	0.2965

SF1

X	0.3433	0.3322	0.3321	0.3425	0.3433
Y	0.3318	0.3228	0.3141	0.3225	0.3318

SF2

X	0.3322	0.3225	0.3229	0.3321	0.3322
Y	0.3228	0.3147	0.3066	0.3141	0.3228

SF3

X	0.3225	0.3136	0.3148	0.3229	0.3225
Y	0.3147	0.3061	0.2987	0.3066	0.3147

SF4

X	0.3136	0.3059	0.3076	0.3148	0.3136
Y	0.3061	0.2985	0.2917	0.2987	0.3061

SF5

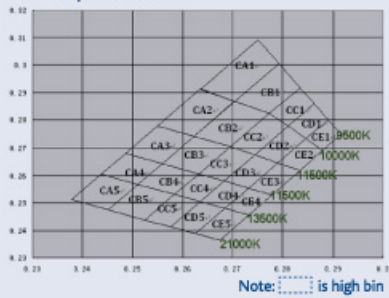
X	0.3059	0.2977	0.2998	0.3076	0.3059
Y	0.2985	0.2901	0.284	0.2917	0.2985

SF6

X	0.2977	0.2891	0.2916	0.2998	0.2977
Y	0.2901	0.2802	0.2749	0.284	0.2901



Color Temperature & CW



CA1

X	0.2751	0.2792	0.2704	0.2635	0.2751
Y	0.3093	0.3007	0.2869	0.2912	0.3093

CA2

X	0.2635	0.2702	0.2623	0.255	0.2635
Y	0.2915	0.2869	0.2742	0.2779	0.2915

CA3

X	0.255	0.2623	0.2559	0.2486	0.255
Y	0.2779	0.2742	0.2642	0.2679	0.2779

CA4

X	0.2486	0.2559	0.2511	0.2438	0.2486
Y	0.2679	0.2642	0.2568	0.2605	0.2679

CA5

X	0.2379	0.2452	0.2511	0.2438	0.2379
Y	0.2512	0.2475	0.2568	0.2605	0.2512

CB1

X	0.2792	0.2835	0.2773	0.2704	0.2792
Y	0.3007	0.2917	0.2826	0.2869	0.3007

CB2

X	0.2704	0.2773	0.2696	0.2623	0.2704
Y	0.2869	0.2826	0.2705	0.2742	0.2869

CB3

X	0.2623	0.2696	0.2632	0.2559	0.2623
Y	0.2742	0.2705	0.2605	0.2642	0.2742

CB4

X	0.2559	0.2632	0.2584	0.2511	0.2559
Y	0.2642	0.2605	0.2531	0.2568	0.2642

CB5

X	0.2511	0.2584	0.2525	0.2452	0.2511
Y	0.2568	0.2531	0.2438	0.2475	0.2568

CC1

X	0.2835	0.2863	0.2811	0.2773	0.2835
Y	0.2917	0.286	0.2779	0.2826	0.2917

CC2

X	0.2773	0.2811	0.2744	0.2696	0.2773
Y	0.2826	0.2779	0.2675	0.2705	0.2826

CC3

X	0.2696	0.2744	0.2683	0.2632	0.2696
Y	0.2705	0.2675	0.2579	0.2605	0.2705

CC4

X	0.2632	0.2683	0.2635	0.2584	0.2632
Y	0.2605	0.2579	0.2504	0.2531	0.2605

CC5

X	0.2584	0.2635	0.2577	0.2525	0.2584
Y	0.2531	0.2504	0.2413	0.2438	0.2531

CD1

X	0.2863	0.2891	0.2846	0.2811	0.2863
Y	0.286	0.2802	0.2733	0.2779	0.286

CD2

X	0.2811	0.2846	0.279	0.2744	0.2811
Y	0.2779	0.2733	0.2646	0.2675	0.2779

CD3

X	0.2744	0.279	0.2732	0.2683	0.2744
Y	0.2675	0.2646	0.2554	0.2579	0.2675

CD4

X	0.2683	0.2732	0.2684	0.2635	0.2683
Y	0.2579	0.2554	0.248	0.2504	0.2579

CD5

X	0.2635	0.2684	0.2626	0.2577	0.2635
Y	0.2504	0.248	0.2388	0.2413	0.2504

CE1

X	0.2891	0.2916	0.288	0.2846	0.2891
Y	0.2802	0.2749	0.2691	0.2733	0.2802

CE2

X	0.2846	0.288	0.2834	0.279	0.2846
Y	0.2733	0.2691	0.2618	0.2646	0.2733

CE3

X	0.279	0.2834	0.2779	0.2732	0.279
Y	0.2646	0.2618	0.253	0.2554	0.2646

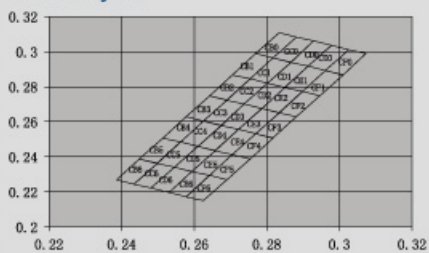
CE4

X	0.2732	0.2779	0.2732	0.2684	0.2732
Y	0.2554	0.253	0.2455	0.248	0.2554

CE5

X	0.2684	0.2732	0.2675	0.2626	0.2684
Y	0.248	0.2455	0.2364	0.2388	0.248

Chromaticity Bin



C80

X	0.2834	0.2882	0.2818	0.277	0.2834
Y	0.3107	0.3083	0.2963	0.2987	0.3107

C81

X	0.277	0.2818	0.2754	0.2706	0.277
Y	0.2987	0.2963	0.2843	0.2867	0.2987

C82

X	0.2706	0.2754	0.269	0.2642	0.2706
Y	0.2867	0.2843	0.2723	0.2747	0.2867

C83

X	0.2642	0.269	0.2626	0.2578	0.2642
Y	0.2747	0.2723	0.2603	0.2627	0.2747

C84

X	0.2578	0.2626	0.2562	0.2514	0.2578
Y	0.2627	0.2603	0.2483	0.2507	0.2627

C85

X	0.2514	0.2562	0.2498	0.245	0.2514
Y	0.2507	0.2483	0.2363	0.2387	0.2507

C86

X	0.245	0.2498	0.2434	0.2386	0.245
Y	0.2387	0.2363	0.2243	0.2267	0.2387

CC0

X	0.2882	0.293	0.2866	0.2818	0.2882
Y	0.3083	0.3059	0.2939	0.2963	0.3083

CC1

X	0.2818	0.2866	0.2802	0.2754	0.2818
Y	0.2963	0.2939	0.2819	0.2843	0.2963

CC2

X	0.2754	0.2802	0.2738	0.269	0.2754
Y	0.2843	0.2819	0.2699	0.2723	0.2843

CC3

X	0.269	0.2738	0.2674	0.2626	0.269
Y	0.2723	0.2699	0.2579	0.2603	0.2723

CC4

X	0.2626	0.2674	0.261	0.2562	0.2626
Y	0.2603	0.2579	0.2459	0.2483	0.2603

CC5

X	0.2562	0.261	0.2546	0.2498	0.2562
Y	0.2483	0.2459	0.2339	0.2363	0.2483

CC6

X	0.2498	0.2546	0.2482	0.2434	0.2498
Y	0.2363	0.2339	0.2219	0.2243	0.2363

CD0

X	0.293	0.2978	0.2914	0.2866	0.293
Y	0.3059	0.3035	0.2915	0.2939	0.3059

CD1

X	0.2866	0.2914	0.285	0.2802	0.2866
Y	0.2939	0.2915	0.2795	0.2819	0.2939

CD2

X	0.2802	0.285	0.2786	0.2738	0.2802
Y	0.2819	0.2795	0.2675	0.2699	0.2819

CD3

X	0.2738	0.2786	0.2722	0.2674	0.2738
Y	0.2699	0.2675	0.2555	0.2579	0.2699

CD4

X	0.2674	0.2722	0.2658	0.261	0.2674
Y	0.2579	0.2555	0.2435	0.2459	0.2579

CD5

X	0.261	0.2658	0.2594	0.2546	0.261
Y	0.2459	0.2435	0.2315	0.2339	0.2459

CD6

X	0.2546	0.2594	0.253	0.2482	0.2546
Y	0.2339	0.2315	0.2195	0.2219	0.2339

CE0

X	0.2978	0.3026	0.2962	0.2914	0.2978
Y	0.3035	0.3011	0.2891	0.2915	0.3035

CE1

X	0.2914	0.2962	0.2898	0.285	0.2914
Y	0.2915	0.2891	0.2771	0.2795	0.2915

CE2

X	0.285	0.2898	0.2834	0.2786	0.285
Y	0.2795	0.2771	0.2651	0.2675	0.2795

CE3

X	0.2786	0.2834	0.277	0.2722	0.2786
Y	0.2675	0.2651	0.2531	0.2555	0.2675

CE4

X	0.2722	0.277	0.2706	0.2658	0.2722
Y	0.2555	0.2531	0.2411	0.2435	0.2555

CE5

X	0.2658	0.2706	0.2642	0.2594	0.2658
Y	0.2435	0.2411	0.2291	0.2315	0.2435

CE6

X	0.2594	0.2642	0.2578	0.253	0.2594
Y	0.2315	0.2291	0.2171	0.2195	0.2315

CF0

X	0.3026	0.3074	0.301	0.2962	0.3026
Y	0.3011	0.2987	0.2867	0.2891	0.3011

CF1

X	0.2962	0.301	0.2946	0.2898	0.2962
Y	0.2891	0.2867	0.2747	0.2771	0.2891

CF2

X	0.2898	0.2946	0.2882	0.2834	0.2898
Y	0.2771	0.2747	0.2627	0.2651	0.2771

CF3

X	0.2834	0.2882	0.2818	0.277	0.2834
Y	0.2651	0.2627	0.2507	0.2531	0.2651

CF4

X	0.277	0.2818	0.2754	0.2706	0.277
Y	0.2531	0.2507	0.2387	0.2411	0.2531

CF5

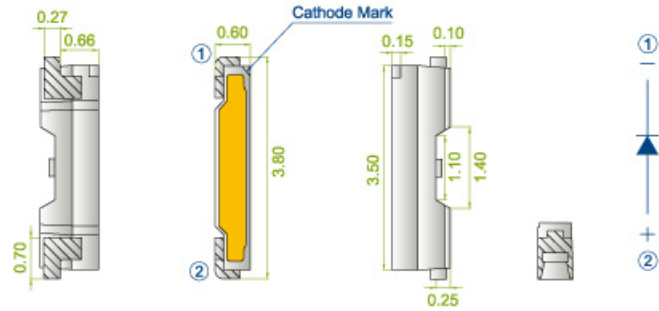
X	0.2706	0.2754	0.269	0.2642	0.2706
Y	0.2411	0.2387	0.2267	0.2291	0.2411

CF6

X	0.2642	0.269	0.2626	0.2578	0.2642
Y	0.2291	0.2267	0.2147	0.2171	0.2291



TO-3806



Features

- 3.8mm x 0.6mm x 1.0mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

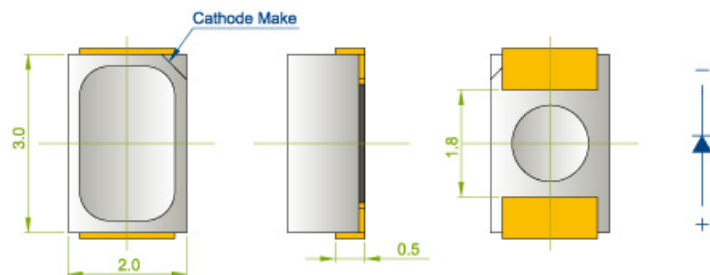
Application

- Backlight



Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Forward Voltage (V)	Test Condition (mA)	IV(mcd)	Viewing Angle 2 $\theta_{1/2}$ (°)
TO-3806CWLQ-D1	0.295/0.285	White	2.8-3.4	20	2400-2700	120
TO-3806CWLQ-D1	0.28/0.26				2200-2500	
TO-3806CWLQ-D1	0.263/0.235				2300-2000	
TO-3806CWLQ-E2	0.295/0.285				2500-2800	
TO-3806CWLQ-E2	0.28/0.26				2300-2600	
TO-3806CWLQ-E2	0.263/0.235				2100-2400	
TO-3806CWLQ-F4	0.295/0.285				2700-3000	
TO-3806CWLQ-F4	0.28/0.26				2500-2800	
TO-3806CWLQ-F4	0.263/0.235				2300-2600	

TO-3020



Features

- 3.0mm x 2.0mm x 2.0mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

Application

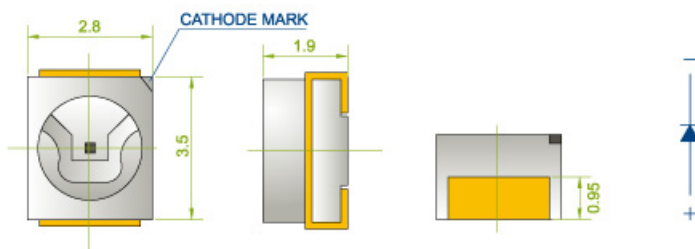
- Backlight



Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Forward Voltage (V)	Test Condition (mA)	IV(mcd)	Viewing Angle 2 $\theta_{1/2}$ (°)
TO-3020CWLQ-D1	0.295/0.285	White	2.8-3.4	20	2400-2800	120
TO-3020CWLQ-D1	0.28/0.26				2200-2600	
TO-3020CWLQ-D1	0.263/0.235				2000-2400	
TO-3020CWLQ-E2	0.295/0.285				2500-2900	
TO-3020CWLQ-E2	0.28/0.26				2300-2700	
TO-3020CWLQ-E2	0.263/0.235				2100-2500	
TO-3020CWLQ-F4	0.295/0.285				2700-3100	
TO-3020CWLQ-F4	0.28/0.26				2500-2900	
TO-3020CWLQ-F4	0.263/0.235				2300-2700	

TO-3528

(TO-3228)



Features

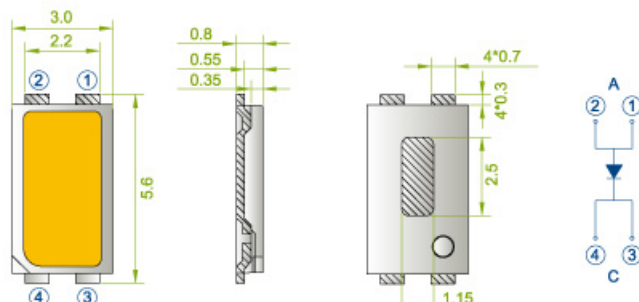
- 3.5mm x 2.8mm x 1.9mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

Application

- General lighting

Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Color Temperature	Forward Voltage (V)	Test Condition (mA)	Typ Luminous Flux(LM) @20mA	CRI (Min)	Viewing Angle 26½° (°)
3528 0.06W/20mA								
TO-3528TWLQ-E2	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	20	6.5	70	120
TO-3528FWLQ-E2	0.37/0.37	Neutral White	3500K-5000K			7.5	70	
TO-3528SWLQ-E2	0.32/0.33	Cool White	5000K-9500K			7.5	70	
TO-3528TWNQ-E2	0.43/0.40	Warm White	2600K-3500K			6	80	
TO-3528FWNQ-E2	0.37/0.37	Neutral White	3500K-5000K			7	80	
TO-3528SWNQ-E2	0.32/0.33	Cool White	5000K-9500K			7	80	
TO-3528TWLQ-F2	0.43/0.40	Warm White	2600K-3500K			7.5	70	
TO-3528FWLQ-F2	0.37/0.37	Neutral White	3500K-5000K			8.5	70	
TO-3528SWLQ-F2	0.32/0.33	Cool White	5000K-9500K			8.5	70	
TO-3528TWNQ-F2	0.43/0.40	Warm White	2600K-3500K			7	80	
TO-3528FWNQ-F2	0.37/0.37	Neutral White	3500K-5000K			8	80	
TO-3528SWNQ-F2	0.32/0.33	Cool White	5000K-9500K			8	80	

TO-5730



Features

- 5.65mm x 3.0mm x 0.9mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

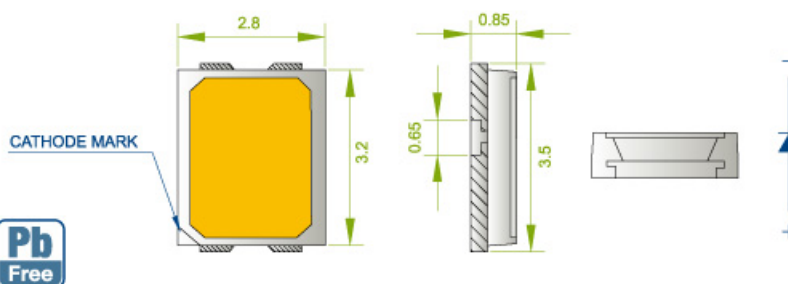
Application

- General lighting
- Backlight



Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Forward Voltage (V)	Test Condition (mA)	IV(mcd)	Viewing Angle 26½° (°)
TO-5730CWLQ-H1	0.295/0.285	White	2.8-3.4	60	8750-10850	120
TO-5730CWLQ-H1	0.28/0.26			60	7000-9100	
TO-5730CWLQ-H1	0.263/0.235			60	5250-7350	
TO-5730CWLQ-H2	0.295/0.285			120	15050-17150	
TO-5730CWLQ-H2	0.28/0.26			120	13300-15400	
TO-5730CWLQ-H2	0.263/0.235			120	11550-13650	
TO-5730CWLQ-H3	0.295/0.285			150	15750-17850	
TO-5730CWLQ-H3	0.28/0.26			150	14000-16100	
TO-5730CWLQ-H3	0.263/0.235			150	12250-14350	

TO-2835



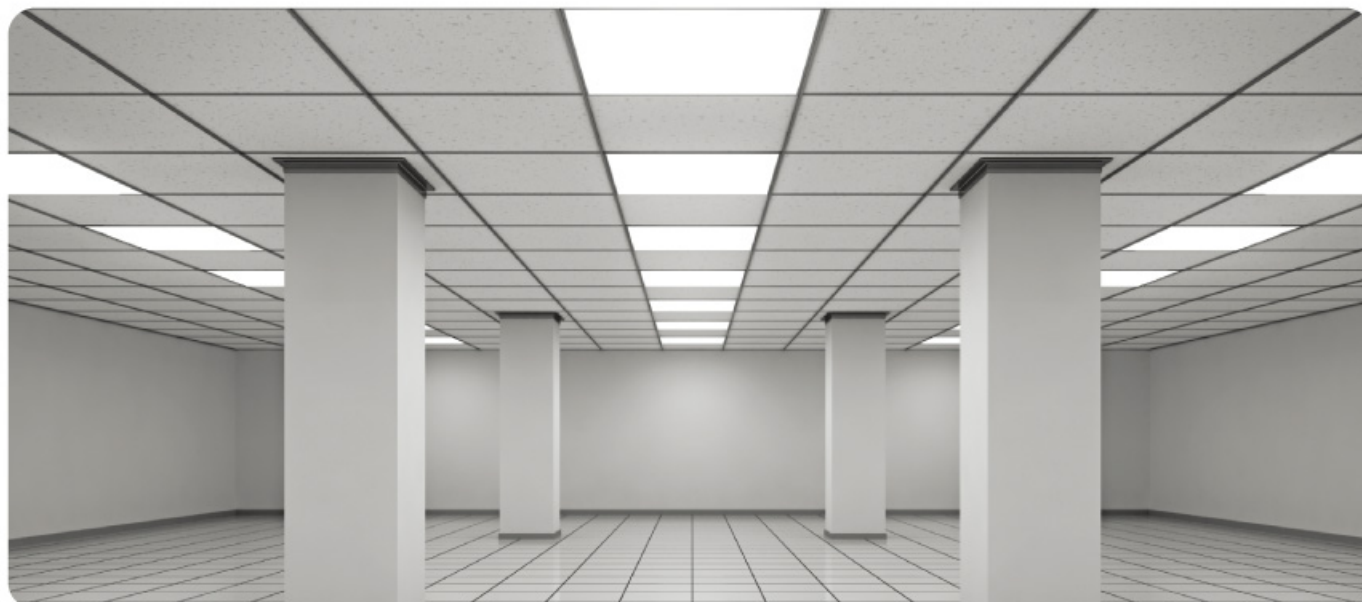
Features

- 3.5mm x 2.8mm x 0.85mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

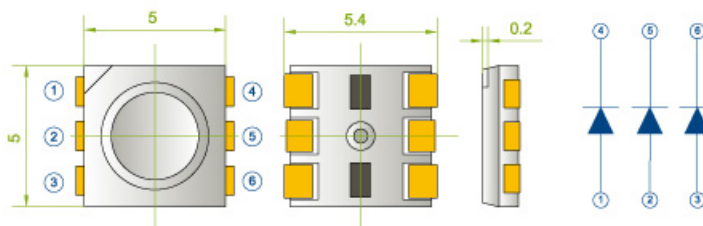
Application

- General lighting

Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Color Temperature	Forward Voltage (V)	Test Condition (mA)	Typ Luminous Flux(LM)	CRI (Min)	Viewing Angle 2θ½ (°)
2835 0.2W/60mA						@60mA		
TO-2835TWLQ-H1	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	60	25	70	120
TO-2835FWLQ-H1	0.37/0.37	Neutral White	3500K-5000K			27	70	
TO-2835SWLQ-H1	0.32/0.33	Cool White	5000K-9500K			27	70	
TO-2835TWNQ-H1	0.43/0.40	Warm White	2600K-3500K			24	80	
TO-2835FWNQ-H1	0.37/0.37	Neutral White	3500K-5000K			26	80	
TO-2835SWNQ-H1	0.32/0.33	Cool White	5000K-9500K			26	80	
2835 0.4W/120mA						@120mA		
TO-2835TWLQ-H2	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	120	45	70	120
TO-2835FWLQ-H2	0.37/0.37	Neutral White	3500K-5000K			47	70	
TO-2835SWLQ-H2	0.32/0.33	Cool White	5000K-9500K			47	70	
TO-2835TWNQ-H2	0.43/0.40	Warm White	2600K-3500K			42	80	
TO-2835FWNQ-H2	0.37/0.37	Neutral White	3500K-5000K			44	80	
TO-2835SWNQ-H2	0.32/0.33	Cool White	5000K-9500K			44	80	
2835 0.5W/150mA						@150mA		
TO-2835TWLQ-H3	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	150	50	70	120
TO-2835FWLQ-H3	0.37/0.37	Neutral White	3500K-5000K			53	70	
TO-2835SWLQ-H3	0.32/0.33	Cool White	5000K-9500K			53	70	
TO-2835TWNQ-H3	0.43/0.40	Warm White	2600K-3500K			46	80	
TO-2835FWNQ-H3	0.37/0.37	Neutral White	3500K-5000K			50	80	
TO-2835SWNQ-H3	0.32/0.33	Cool White	5000K-9500K			50	80	



TO-5050



Features

- 5.0mm x 5.0mm x 1.55mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

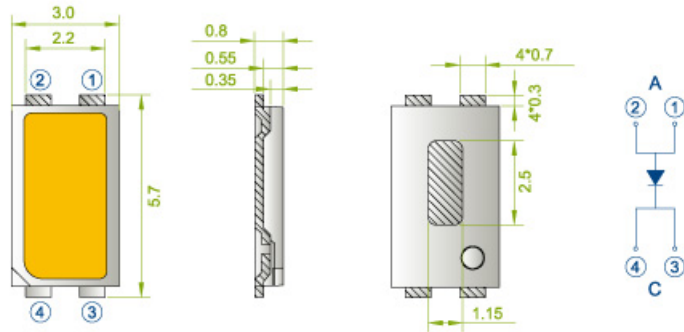
Application

- General lighting

Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Color Temperature	Forward Voltage (V)	Test Condition (mA)	Typ Luminous Flux(LM) @60mA	CRI (Min)	Viewing Angle 2θ1/2 (°)
5050 0.2W/60mA								
TO-5050TWLQ-E2	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	60	22	70	120
TO-5050FWLQ-E2	0.37/0.37	Neutral White	3500K-5000K			24	70	
TO-5050SWLQ-E2	0.32/0.33	Cool White	5000K-9500K			24	70	
TO-5050TWNQ-E2	0.43/0.40	Warm White	2600K-3500K			20	80	
TO-5050FWNQ-E2	0.37/0.37	Neutral White	3500K-5000K			22	80	
TO-5050SWNQ-E2	0.32/0.33	Cool White	5000K-9500K			22	80	
TO-5050TWLQ-F2	0.43/0.40	Warm White	2600K-3500K			24	70	
TO-5050FWLQ-F2	0.37/0.37	Neutral White	3500K-5000K			26	70	
TO-5050SWLQ-F2	0.32/0.33	Cool White	5000K-9500K			26	70	
TO-5050TWNQ-F2	0.43/0.40	Warm White	2600K-3500K			22	80	
TO-5050FWNQ-F2	0.37/0.37	Neutral White	3500K-5000K			24	80	
TO-5050SWNQ-F2	0.32/0.33	Cool White	5000K-9500K			24	80	



TO-5730



Features

- 5.7mm x 3.0mm x 0.8mm
- High efficiency LED
- IC compatible
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process

Application

- General lighting
- Backlight

Part Number	Wavelength λ_d (nm) Cx/Cy	Emitting Color	Color Temperature	Forward Voltage (V)	Test Condition (mA)	Typ Luminous Flux(LM)	CRI (Min)	Viewing Angle 2θ½ (°)
5730 0.2W/60mA						@60mA		
TO-5730TWLQ-H1	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	60	25	70	120
TO-5730FWLQ-H1	0.37/0.37	Neutral White	3500K-5000K			27	70	
TO-5730SWLQ-H1	0.32/0.33	Cool White	5000K-9500K			27	70	
TO-5730TWNQ-H1	0.43/0.40	Warm White	2600K-3500K			24	80	
TO-5730FWNQ-H1	0.37/0.37	Neutral White	3500K-5000K			26	80	
TO-5730SWNQ-H1	0.32/0.33	Cool White	5000K-9500K			26	80	
5730 0.4W/120mA						@120mA		
TO-5730TWLQ-H2	0.43/0.40	Warm White	2600K-3500K	2.8-3.4	120	46	70	120
TO-5730FWLQ-H2	0.37/0.37	Neutral White	3500K-5000K			48	70	
TO-5730SWLQ-H2	0.32/0.33	Cool White	5000K-9500K			48	70	
TO-5730TWNQ-H2	0.43/0.40	Warm White	2600K-3500K			43	80	
TO-5730FWNQ-H2	0.37/0.37	Neutral White	3500K-5000K			45	80	
TO-5730SWNQ-H2	0.32/0.33	Cool White	5000K-9500K			45	80	
5730 0.5W/150mA						@150mA		
TO-5730TWLQ-H3	0.43/0.40	Warm White	2600K-3500K	2.8-3.6	150	52	70	120
TO-5730FWLQ-H3	0.37/0.37	Neutral White	3500K-5000K			55	70	
TO-5730SWLQ-H3	0.32/0.33	Cool White	5000K-9500K			55	70	
TO-5730TWNQ-H3	0.43/0.40	Warm White	2600K-3500K			48	80	
TO-5730FWNQ-H3	0.37/0.37	Neutral White	3500K-5000K			52	80	
TO-5730SWNQ-H3	0.32/0.33	Cool White	5000K-9500K			52	80	

TO-3006

PLCC 3006 Package



Features

- 3.0mm x 0.6mm x 0.8mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Various color available

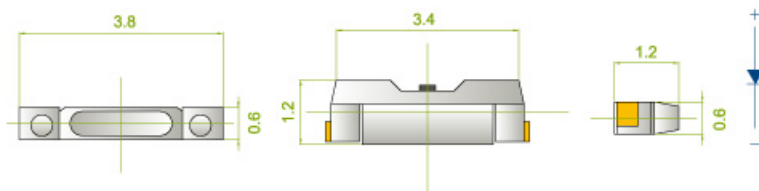
Application

- LCD backlight
- Indicator light

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	TYP.	MAX.	
TO-3006SC-BG	InGaN	Blue	468	Water	3.2	3.6	417	600	120
TO-3006SC-MYG	AlGaInP	High Bright Yellow	592	Clear	2.0	2.4	417	600	
TO-3006SY-SWK	InGaN	Snow White	470	Yellow	2.9	3.4	2900	3400	
TO-3006SY-MWK	InGaN	Pure White	470	Diffused	3.0	3.2	2900	3200	

TO-3806

PLCC 3806 Package



Features

- 3.8mm x 0.6mm x 1.2mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Various color available

Application

- LCD backlight
- Indicator light

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA	Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	TYP.	
TO-3806SC-BF	InGaN	Blue	468	Water Clear	3.3	3.6	200	120
TO-3806SC-PG	InGaN	Pure Green	525		3.3	3.6	450	
TO-3806SC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	60	
TO-3806SC-MAF	AlGaInP	High Bright Amber	590		2.0	2.4	155	
TO-3806SC-MRF	AlGaInP	High Bright Red	630		1.9	2.4	150	

TO-4508

PLCC 4508 Package



Features

- 4.5mm x 0.8mm x 1.25mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Various color available

Application

- LCD backlight
- Indicator light

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	TYP.	MAX.	
TO-4508SC-MEPBFGE	AlGaInP	High Bright Red	630	Water Clear	2.0	2.3	225	300	120
	InGaN	Pure Green	525		3.1	3.45	565	800	
	InGaN	Blue	468		3.1	3.45	57	70	

TO-3014

PLCC 3014 Package



Features

- 3.0mm x 1.35mm x 0.7mm
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3014BC-BG	InGaN	Blue	468	Water Clear	3.2	3.6	321	705	120
TO-3014BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-3014MRXQ	AlGaInP	High Bright Red	625		2.0	2.4	340	500	
TO-3014SWNQ	InGaN	Snow White	470		3.2	3.7	2500	3500	

TO-3030

PLCC 3030 Package



Features

- 3.0mm x 3.0mm x 0.6mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Various color available

Application

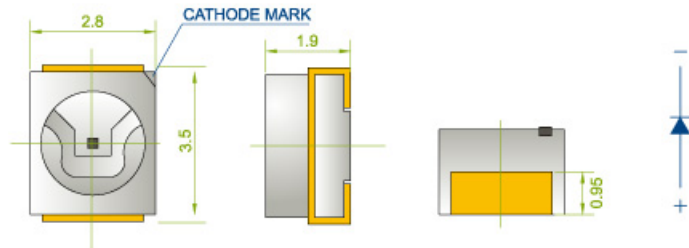
- Backlight
- General lighting
- Wall wash lighting
- Residential lighting

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3030BY-MB	InGaN	Blue	455	Water Clear	6.2	6.4	4000	5000	120
TO-3030BY-MP	InGaN	Pure Green	525		6.2	6.4	70	80	
TO-3030BC-MGG	AlGaInP	High Bright Green	572		2.2	2.6	321(mcd)	417(mcd)	
TO-3030BC-MA	AlGaInP	High Bright Amber	605		3.2	3.4	60	70	
TO-3030AC-MR	AlGaInP	High Bright Red	625		2.2	2.6	20	30	
TO-3014AC-SW	InGaN	Snow White	470		3.2	3.4	100	110	

TO-3528 (TO-3228)

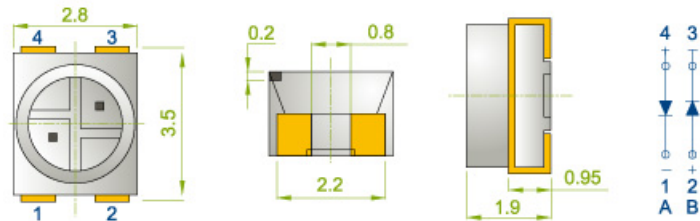
PLCC 3528 Package

Single Color



Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3528BC-BF	InGaN	Blue	468	Water Clear	3.3	3.6	146	281	120
TO-3528BC-PG	InGaN	Pure Green	525		3.3	3.6	417	805	
TO-3528BC-MGE	AlGaInP	High Bright Green	572		2.2	2.4	51	98	
TO-3528BC-MYG	AlGaInP	High Bright Yellow	592		2.0	2.4	417	805	
TO-3528BC-MAF	AlGaInP	High Bright Amber	605		2.0	2.4	542	1046	
TO-3528BC-ED	GaAsP	Orange	621		2.0	2.4	10.5	20	
TO-3528BC-MEG	AlGaInP	High Bright Orange	623		2.0	2.4	417	805	
TO-3528BC-MRG	AlGaInP	High Bright Red	630		1.9	2.4	417	667	

Double Color



Features

- 3.5mm x 2.8mm x 1.9mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Dual color
- Various color available

Application

- Backlight
- Sign display
- General lighting
- Wall wash lighting
- Residential lighting

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3528BC-PBFF	InGaN	Pure Green	525	Water Clear	3.3	3.6	51	98	120
	InGaN	Blue	468		3.3	3.6	51	98	
TO-3528BC-MGMGEE	AlGaInP	High Bright Green	572		2.0	2.4	51	98	
	AlGaInP	High Bright Green	572		2.0	2.4	51	98	
TO-3528BC-MYPFF	AlGaInP	High Bright Yellow	590		2.0	2.4	146	281	
	InGaN	Pure Green	525		3.3	3.6	146	281	
TO-3528BC-MYMGFE	AlGaInP	High Bright Yellow	590		2.0	2.4	146	281	
	AlGaInP	High Bright Green	572		2.0	2.4	51	98	
TO-3528BC-MAMAFF	AlGaInP	High Bright Amber	605		2.0	2.4	146	281	
	AlGaInP	High Bright Amber	605		2.0	2.4	146	281	
TO-3528BC-MEPFG	AlGaInP	High Bright Orange	623		2.0	2.4	51	98	
	InGaN	Pure Green	525		2.0	2.4	146	281	
TO-3528BC-MEMYFF	AlGaInP	High Bright Orange	623		2.0	2.4	146	281	
	AlGaInP	High Bright Yellow	590		2.0	2.4	146	281	
TO-3528BC-MRBEF	AlGaInP	High Bright Red	630		1.9	2.4	51	98	
	InGaN	Blue	468		3.3	3.6	146	281	
TO-3528BC-MRPFG	AlGaInP	High Bright Red	630		1.9	2.4	146	281	
	InGaN	Pure Green	525		3.3	3.6	417	805	
TO-3528BC-MRMGEE	AlGaInP	High Bright Red	630		1.9	2.4	51	98	
	AlGaInP	High Bright Green	572		2.0	2.4	51	98	

Full Color

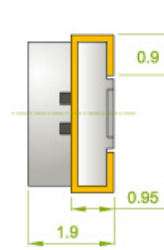
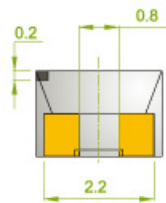
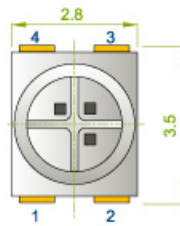


Features

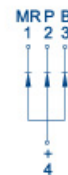
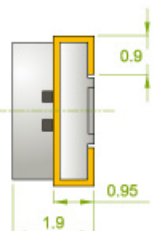
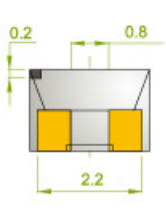
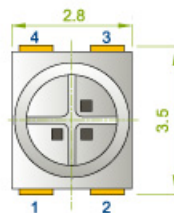
- 3.5mm x 2.8mm x 1.9mm
- High efficiency LED
- Low power consumption
- Wide viewing angle

Application

- Backlight
- Sign display
- General lighting
- Wall wash lighting
- Residential lighting



Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _p (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3528BC-3MYH	AlGaInP	High Bright Yellow	590	Water	2.0	2.4	917	1997	120
TO-3528BC-3MAK	AlGaInP	High Bright Amber	632	Clear	2.0	2.4	1150	2278	



Features

- 3.5mm x 2.8mm x 1.9mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- RGB full color

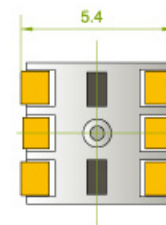
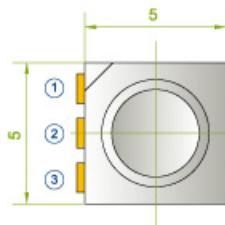
Application

- Backlight
- Sign display
- General lighting
- Wall wash lighting
- Residential lighting

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _p (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3528BC-MRPBFGF	AlGaInP	High Bright Red	630	Water	2.0	2.4	146	281	120
	InGaN	Pure Green	525		3.3	3.6	417	667	
	InGaN	Blue	468		3.3	3.6	146	281	
TO-3528BC-MEPBFGF	AlGaInP	High Bright Orange	623	Clear	2.0	2.4	146	281	
	InGaN	Pure Green	525		3.3	3.6	417	667	
	InGaN	Blue	468		3.3	3.6	146	281	

TO-5050

PLCC 5050 Package



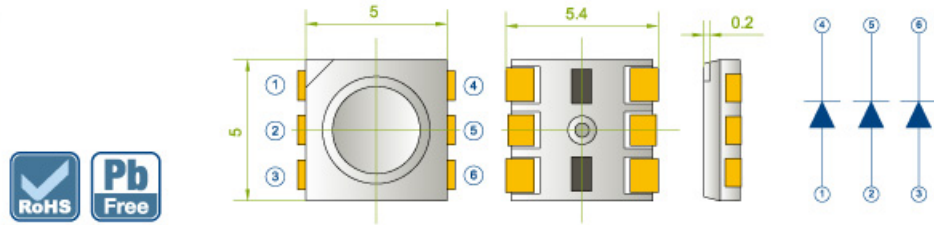
Features

- 5.0mm x 5.0mm x 1.5mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Office lighting
- Indoor display
- Residential lighting
- General lighting
- Backlight and indicator

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _p (nm)		TYP.	MAX.	MIN.	TYP.	
TO-5050BC-143PK	InGaN	Pure Green	525	Water	3.3	3.6	2015	2711	120
TO-5050BC-123MYH	AlGaInP	High Bright Yellow	590		2.0	2.4	917	1466	
TO-5050BC-3MAG	AlGaInP	High Bright Amber	605		2.0	2.4	417	805	
TO-5050BC-143MEH-N	AlGaInP	High Bright Orange	623		2.0	2.4	917	1466	
TO-5050BC-123MRG	AlGaInP	High Bright Red	630		1.9	2.4	419	667	



Features

- 5.0mm x 5.0mm x 1.5mm
- High efficiency LED
- Low power consumption
- Wide viewing angle
- RGB full color

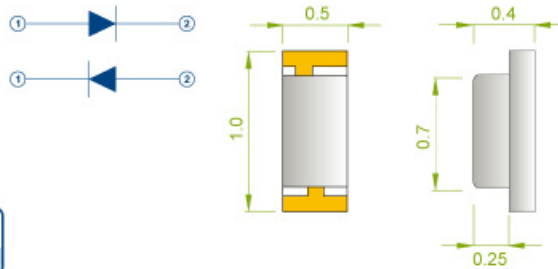
Application

- Office lighting
- Indoor display
- Residential lighting
- General lighting
- Backlight and indicator

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-5050BC-MEPBGHF	AlGaInP	High Bright Orange	623	Water Clear	2.0	2.4	417	667	120
	InGaN	Pure Green	525		3.3	3.6	417	667	
	InGaN	Blue	468		3.3	3.6	146	281	
TO-5050BC-MRPBGF	AlGaInP	High Bright Red	630		1.9	2.4	146	281	
	InGaN	Pure Green	525		3.3	3.6	417	667	
	InGaN	Blue	468		3.3	3.6	146	281	

TO-0402 (TO-1005)

PCB 0402 Package



Features

- 1.0mm x 0.5mm x 0.4mm
- Low power consumption
- Wide viewing angle
- Various color available

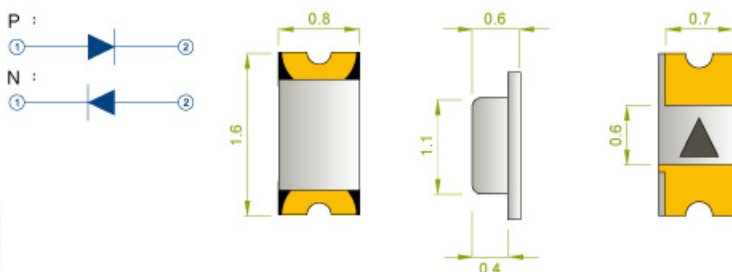
Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-0402BC-BE	InGaN	Blue	468	Water Clear	3.2	3.6	51	86	120
TO-0402BC-PF	InGaN	Pure Green	525		3.2	3.6	146	247	
TO-0402BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	86	
TO-0402BC-MYF	AlGaInP	High Bright Yellow	592		2.0	3.4	146	247	
TO-0402BC-MEE	AlGaInP	High Bright Orange	623		2.0	2.4	51	86	
TO-0402BC-MRE	AlGaInP	High Bright Red	630		2.0	2.4	51	86	

TO-1608

PCB 1608 Package



Features

- 1.6mm x 0.8mm x 0.6mm
- Low power consumption
- Wide viewing angle
- Various color available

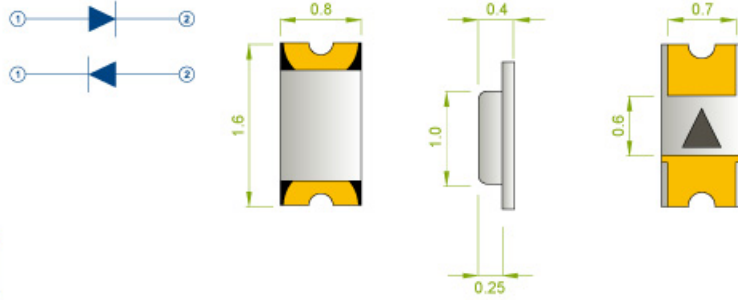
Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-1608BC-BF	InGaN	Blue	468	Water Clear	3.2	3.6	112	247	120
TO-1608BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-1608BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-1608BC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-1608BC-MAE	AlGaInP	High Bright Amber	605		2.0	2.4	51	112	
TO-1608BC-MEE	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
TO-1608BC-MRE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	

TO-A1608

PCB 1608 Package



Features

- 1.6mm x 0.8mm x 0.4mm
- Low power consumption
- Wide viewing angle
- Various color available

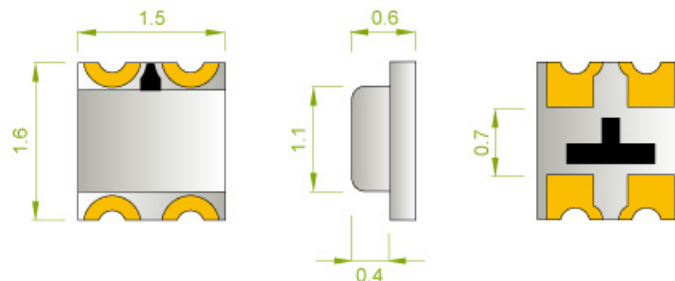
Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-A1608BC-BF	InGaN	Blue	468	Water Clear	3.2	3.6	112	247	120
TO-A1608BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-A1608BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-A1608BC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-A1608BC-MAE	AlGaInP	High Bright Amber	605		2.0	2.4	51	112	
TO-A1608BC-MEE	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
TO-A1608BC-MRE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	

TO-1615

PCB 1615 Package



Features

- 1.6mm x 1.5mm x 0.6mm
- Dual color
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-1615BC-MAMGEE	AlGaInP	High Bright Amber	605	Water Clear	2.0	2.4	51	112	120
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-1615BC-MEBEE	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
	InGaN	Blue	468		3.2	3.6	51	112	
TO-1615BC-MEPEF	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
	InGaN	Pure Green	525		3.2	3.6	146	247	
TO-1615BC-MEMGEE	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-1615BC-MRBFF	AlGaInP	High Bright Red	630		2.0	2.4	146	247	
	InGaN	Blue	468		3.2	3.6	146	247	
TO-1615BC-MRMAEE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	
	AlGaInP	High Bright Amber	605		2.0	2.4	51	112	
TO-1615BC-MRMGEE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	

TO-1706

PCB 1706 Package

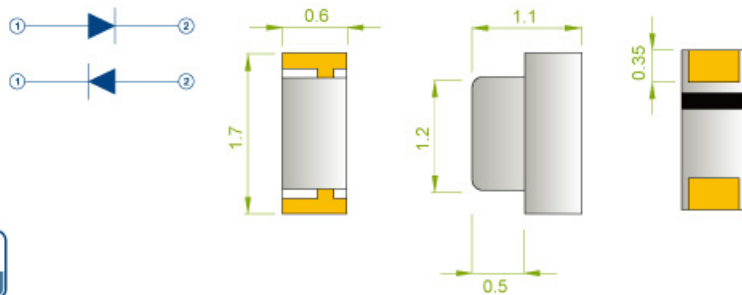


Features

- 1.7mm x 0.6mm x 1.1mm
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board



Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-1706BC-BF	InGaN	Blue	468	Water Clear	3.2	3.6	112	247	120
TO-1706BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-1706BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-1706BC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-1706BC-MAF	AlGaInP	High Bright Amber	605		2.0	2.4	146	247	
TO-1706BC-MEF	AlGaInP	High Bright Orange	623		2.0	2.4	146	247	
TO-1706BC-MRE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	

TO-2013

PCB 2013 Package

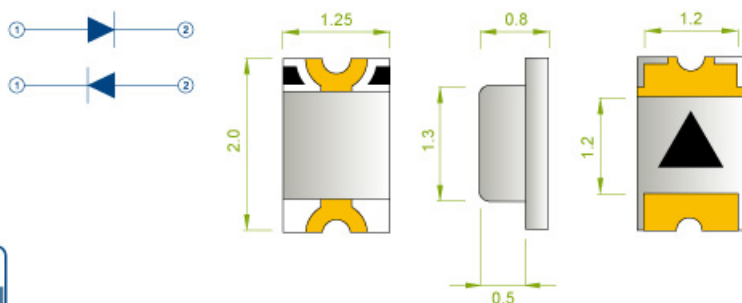


Features

- 2.0mm x 1.25mm x 0.8mm
- Low power consumption
- Wide viewing angle
- Various color available

Application

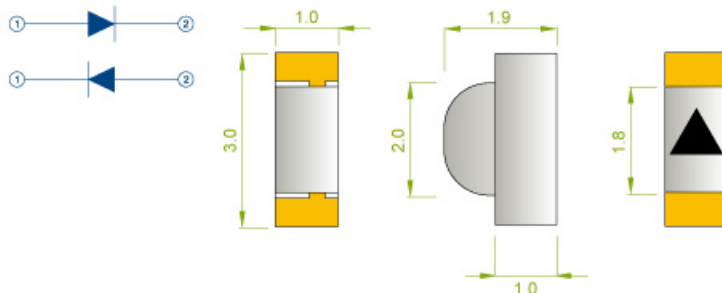
- Indicator light
- Backlight
- Automotive interior light
- Indoor display board



Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-2013BC-BF	InGaN	Blue	468	Water Clear	3.2	3.6	112	247	120
TO-2013BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-2013BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-2013BC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-2013BC-MAF	AlGaInP	High Bright Amber	605		2.0	2.4	146	247	
TO-2013BC-MEF	AlGaInP	High Bright Orange	623		2.0	2.4	146	247	
TO-2013BC-MRE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	

TO-3010

PCB 3010 Package



Features

- 3.0mm x 1.0mm x 1.9mm
- Low power consumption
- Wide viewing angle
- Various color available

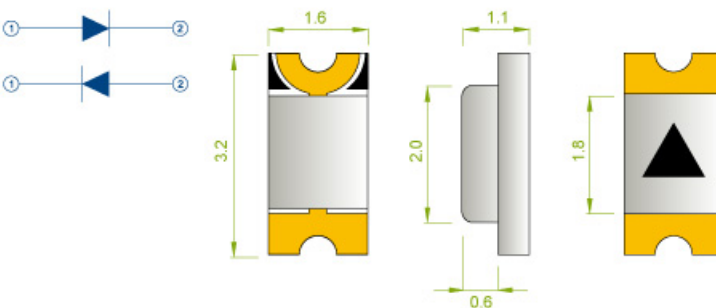
Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3010AC-BE	InGaN	Blue	468	Water Clear	3.2	3.6	51	112	120
TO-3010AC-PF	InGaN	Pure Green	525		3.2	3.6	146	247	
TO-3010AC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-3010AC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-3010AC-MAE	AlGaInP	High Bright Amber	605		2.0	2.4	51	112	
TO-3010AC-MEE	AlGaInP	Super Bright Orange	623		2.0	2.4	51	112	
TO-3010AC-MRE	AlGaInP	Ultra Bright Red	630		2.0	2.4	51	112	

TO-3216

PCB 3216 Package



Features

- 3.2mm x 1.6mm x 1.1mm
- Low power consumption
- Wide viewing angle
- Various color available

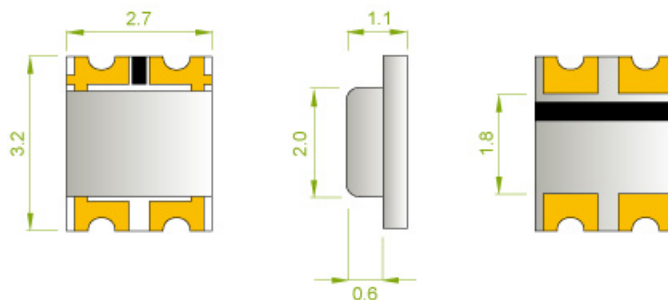
Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3216BC-BF	InGaN	Blue	468	Water Clear	3.2	3.6	112	247	120
TO-3216BC-PG	InGaN	Pure Green	525		3.2	3.6	321	705	
TO-3216BC-MGE	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-3216BC-MYF	AlGaInP	High Bright Yellow	592		2.0	2.4	146	247	
TO-3216BC-MAF	AlGaInP	High Bright Amber	605		2.0	2.4	146	247	
TO-3216BC-MEF	AlGaInP	Super Bright Orange	623		2.0	2.4	146	247	
TO-3216BC-MRE	AlGaInP	Ultra Bright Red	630		2.0	2.4	51	112	

TO-3227

PCB 3227 Package



Features

- 3.2mm x 2.7mm x 1.1mm
- Dual color
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _e (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3227BC-MYBEE	AlGaInP	High Bright Yellow	590	Water Clear	2.0	2.4	51	112	120
	InGaN	Blue	468		3.2	3.6	51	112	
TO-3227BC-MYMGE	AlGaInP	High Bright Yellow	590		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-3227BC-MABFF	AlGaInP	High Bright Amber	605		2.0	2.4	146	247	
	InGaN	Blue	468		3.2	3.6	146	247	
TO-3227BC-MAMGE	AlGaInP	High Bright Amber	605		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-3227BC-MEMGE	AlGaInP	High Bright Orange	623		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	
TO-3227BC-MRBEE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	
	InGaN	Blue	468		3.2	3.6	51	112	
TO-3227BC-MRPEF	AlGaInP	High Bright Red	630		2.0	2.4	51	112	
	InGaN	Pure Green	525		3.2	3.6	146	247	
TO-3227BC-MRMGE	AlGaInP	High Bright Red	630		2.0	2.4	51	112	
	AlGaInP	High Bright Green	572		2.0	2.4	51	112	

TO-3535

PCB 3535 Package



Features

- 3.5mm x 3.5mm x 2.3mm
- Dual color
- Low power consumption
- Wide viewing angle
- Various color available

Application

- Indicator light
- Backlight
- Automotive interior light
- Indoor display board

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _e (nm)		TYP.	MAX.	MIN.	TYP.	
TO-3535AC-MB	InGaN	Blue	460	Water Clear	3.2	3.6	22	28	120
TO-3535AC-MP	InGaN	Pure Green	518		3.2	3.6	90	110	
TO-3535AC-MY	AlGaInP	High Bright Yellow	592		2.0	2.6	45	55	
TO-3535AC-MR	AlGaInP	High Bright Red	618		2.0	2.6	55	65	
TO-3535SWLQ	InGaN	Snow White	623		3.2	3.6	150	170	

TO-3535

UV LED



Features

- 3.5mm x 3.5mm x 1.36mm
- High optical output power.
- Long life and low light attenuation.
- Environmental protection, energy saving and high reliability.
- Built-in UVC wavelength chip, unique design and application more widely.

Application

- Fluorescent spectroscopy
- Sensors and monitors
- Currency detector
- Sterilization and disinfection
- Bio-Analysis / Detection

Part Number	Wavelength λd(nm)	Forward Voltage(V)	Test Condition(mA)	Radiant Flux (mW)	Viewing Angle 2θ1/2
TO-3535BC-UVC265-30	265-285	5.6-6.6	30	2.5 -5	120
TO-3535BC-UVC265-120	265-285	5.6-6.6	120	10 -15	120
TO-3535BC-UVC265-200	265-285	5.6-6.6	200	25 - 35	120

TOP (1W/3W)

RED (AlGaInP)



Part Number	Forward Voltage (V)			Luminous Flux (Lm)			Dominant wavelength (nm)			Test Condition
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
TOP-1RD1	2.0	2.2	2.4	30	40	50	620.0	622.5	625.0	IF=350mA
TOP-3RG1	2.1	2.3	2.5	70	80	90	620.0	622.5	625.0	IF=700mA

Features

- High brightness, high performance
- High color purity, good uniformity
- Low light decline, long working life

Application

- General Lighting

TOP (1W/3W)

GREEN (InGaN)



Part Number	Forward Voltage (V)			Luminous Flux (Lm)			Dominant wavelength (nm)			Test Condition
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
TOP-1GF2	3.0	3.2	3.4	50	60	70	520.0	522.5	525.0	IF=350mA
TOP-3GM1	3.1	3.3	3.5	100	120	140	520.0	522.5	525.0	IF=700mA

Features

- High brightness, high performance
- High color purity, good uniformity
- Low light decline, long working life

Application

- General Lighting

TOP (1W/3W)

BLUE (InGaN)



Part Number	Forward Voltage (V)			Luminous Flux (Lm)			Dominant wavelength (nm)			Test Condition
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
TOP-1BD1	3.0	3.2	3.4	10	17	25	460.0	462.5	465.0	IF=350mA
TOP-3BE3	3.1	3.3	3.5	20	35	50	460.0	462.5	465.0	IF=700mA

Features

- High brightness, high performance
- High color purity, good uniformity
- Low light decline, long working life

Application

- General Lighting

TOP (1W/3W)

WHITE (InGaN)



Part Number	Forward Voltage (V)			Luminous Flux (Lm)			Dominant wavelength (nm)			Test Condition
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
TOP-1BD1	3.0	3.2	3.4	100	120	140	6000	7000	8000	IF=350mA
TOP-3BE3	3.1	3.3	3.5	200	220	240	6000	7000	8000	IF=700mA

Features

- High brightness, high performance
- High color purity, good uniformity
- Low light decline, long working life

Application

- General Lighting

Lamp LED

Color

Code	Emitting Color and Material	Wavelength (nm)
UR	Ultra Red (AlGaInP)	635
UE	Ultra Orange (AlGaInP)	625
SE	Super Orange (AlGaInP)	615
UA	Ultra Amber (AlGaInP)	605
UY	Ultra Yellow (AlGaInP) (AlGaInP)	588
UG	Ultra Yellow Green (AlGaInP)	572
PG	Pure Green (InGaN)	515-530
BG	Bluish Green (InGaN)	500-515
UB	Blue (InGaN)	470
PR	Pure Red (GaAsP/GaP)	700(λp)
SR	Super Red (GaAsP/GaP)	640
HE	High Orange (GaAsP/GaP)	620
HA	High Amber (GaAsP/GaP)	610
HY	High Yellow (GaAsP/GaP)	585
HG	High Yellow Green (GaAsP/GaP)	565
SG	Super Yellow Green	560
HR	High Red	660

Code	Emitting Color	Chromaticity Coordinate
BW	Bluel White	X=0.26 Y=0.27
CW	Cool White	X=0.28 Y=0.29
SW	Snow White	X=0.30 Y=0.31
YW	Yellow White	X=0.33 Y=0.34
WW	Warm White	X=0.43 Y=0.41
PP	Purple Pink	Special Color
PK	Reddish Pink	Special Color
VB	Pueplish Blue	Special Color
GB	Greenish Blue	Special Color
UV	Violet	Special Color

Dual Color

Code	Emitting Colors
RB	Red and Blue
RG	Red and Green
RY	Red and Yellow
OB	Orange and Blue
OG	Orange and Green
YG	Yellow and Green
YB	Yellow and Blue
GR	Green and Red
GO	Green and Orange
GY	Green and Yellow
BR	Blue and Red
BG	Blue and Green
BY	Blue and Yellow
3A	Red Green Blue
3B	Red green Yellow

Drive Mode

Code	Meaning	Sign
A	Common Anode	NP/NP
C	Common Cathode	PN/PN
R	Reverse Electrode	PN/NP

Meaning

Code	Meaning	Notes
None	Normal cutting and package	
A	Stopper type	
B	Normal tape package	Tape to bottom of component is 9mm
C	Normal tape package	Tape to bottom of component is 11mm
D	Normal tape package	Tape to bottom of component is 12mm
E	Normal tape package	Tape to bottom of component is 13mm
F	Normal tape package	Tape to bottom of component is 15mm
G	Right-angle bend tape	Tape to bottom of component is 11mm, Bend to bottom of component is 4mm
H	Right-angle bend tape	Tape to bottom of component is 11mm, Bend to bottom of component is 5mm
K	Right-angle bend tape	Tape to bottom of component is 10mm, Bend to bottom of component is 5mm
L	Append negative Zener	applies to P/N LED chips
M	Append bidirectional Zener	applies to P/N or N/P LED chips
N	Append positive Zener	applies to N/P LED chips
P	Append LED Blinking IC	Blinking frequency: 2.4Hz, 1/4 duty cycle
Q	Append LED Blinking IC	Blinking frequency: 1.2Hz, 1/4 duty cycle
R	Tape & Reel	

Example

T O L - 5 0 2 S W V C - A

Lens Dimension

Code	Dimension
1	Ø 1.8 mm
2	Ø 2.0 mm
3	Ø 3.0 mm
4	Ø 4.0 mm
5	Ø 5.0 mm
8	Ø 8.0 mm
A	Ø 10 mm
B	2 × 3 mm
C	2 × 5 mm
D	2.1 × 6.9 mm

View Angle

Code	View Angle
1	8-12
2	12-25
3	25-35
4	35-45
5	45-55
6	55-65
7	65-75
9	75-85
A	85-95
B	95-105
C	105-115
D	115-145
E	145-180
T	110/45(Oval)
R	50/30(Oval)

Lens Color

Code	Lens Color
C	Water Clear
W	White Diffused
T	Color Transparent
D	Color Diffused
B	Dark Blue
K	Special Package Color

Lens Shape

Code	Lens Shape
0	Round convex Indicator with Flange
1	Round convex Indicator without Flange
2	Round flat Indicator with Flange
3	Round flat Indicator without Flange
4	Round concave Indicator with Flange
5	Round concave Indicator without Flange
6	Horizontal oval Indicator
7	Vertical oval Indicator
8	Square Indicator with Flange
9	Square Indicator without Flange
A	Triangle Indicator
B	Straw Hat

Typical Luminous Intensity

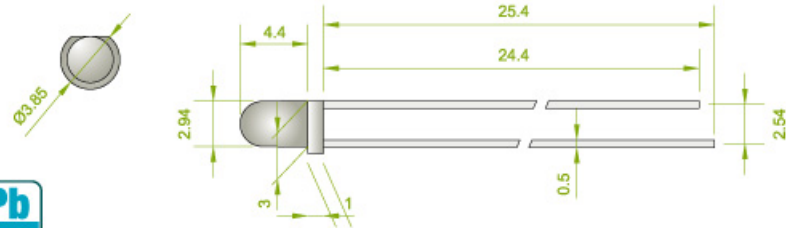
Code	Typical Luminous Intensity (mcd)
1	1-7
2	7-15
3	15-25
4	25-35
5	35-50
6	50-65
7	65-85
8	85-110
9	110-145
A	145-190
B	190-250
C	250-330
D	330-430
E	430-560
F	560-730
G	730-950
H	950-1250
J	1250-1625
K	1625-2100
L	2100-2750
M	2750-3575
N	3575-4650
O	4650-6050
P	6050-7900
Q	7900-10300
R	10300-13400
S	13400-17500
T	17500-22800
U	22800-30000
V	30000-39000

Lamp Type

Code	Lamp Type
L	LED Lamp
LF	Flash LED Lamp
IR	IR LED Lamp
PS	Photo Diode

TOL-30

3mm Round



Features

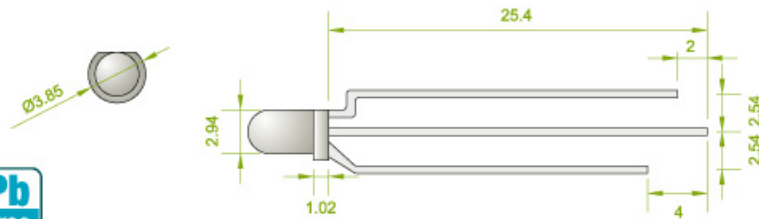
- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstood

Application

- Residential lighting
- Automotive interior lighting
- Highway variable message signs
- Medical and industrial equipments
- Consumer and gaming application
- Home appliance lighting application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-302URKC	AlGaInP	Red	630	Water Clear	1.9	2.5	1000	2000	18
TOL-302UEKC	AlGaInP	Orange	623		2.0	2.4	1000	2000	
TOL-302UANC	AlGaInP	Amber	605		2.0	2.4	2000	4000	
TOL-302UYMC	AlGaInP	Yellow	590		2.0	2.3	1500	3000	
TOL-302UGFC	AlGaInP	Green	573		2.0	2.4	350	700	

3mm Round (Bi-Color)



Luminous Intensity measurement allowance is ±15%.
Wave length: the typical accuracy is ±2nm.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstood

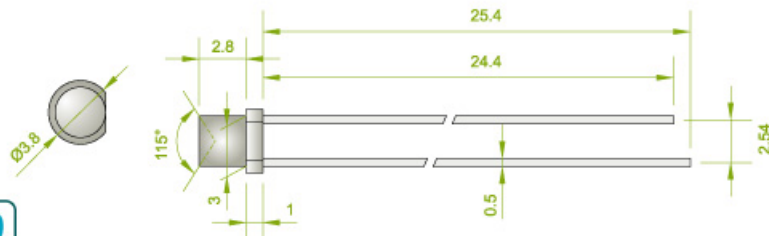
Application

- Residential lighting
- Automotive interior lighting
- Highway variable message signs
- Medical and industrial equipments
- Consumer and gaming application
- Home appliance lighting application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-307RGAW	GaAlAs/GaAs	Red	640	White	1.8	2.1	34	80	60
	GaP/GaP	Green	570		2.2	2.5	15	30	
TOL-307RBAW	AlGaAs/AlGaAs	Red	643	Diffused	2.0	2.4	65	130	60
	InGaIn/GaN	Blue	470		3.0	4.0	110	220	

TOL-34

3mm Concave



Luminous Intensity measurement allowance is ±15%.
Wave length: the typical accuracy is ±2nm.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstood

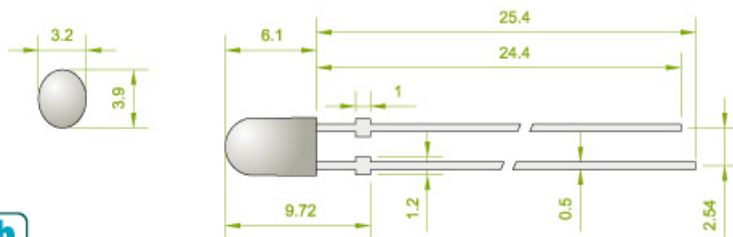
Application

- Home appliance & lighting
- Automotive interior lighting
- Highway variable message signs
- Medical and industrial equipments
- Consumer and gaming electronics application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-34BSR4C	AlGaInP	Red	640	Water Clear	2.0	2.5	17	35	105
TOL-34EUYBC	AlGaInP	Yellow	590		2.0	2.5	125	250	150
TOL-34BUY4C	AlGaInP	Green	574		2.0	2.4	20	40	105

TOL-36

3mm Oval



Luminous Intensity measurement allowance is $\pm 15\%$.
Wave length: the typical accuracy is $\pm 2\text{nm}$.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

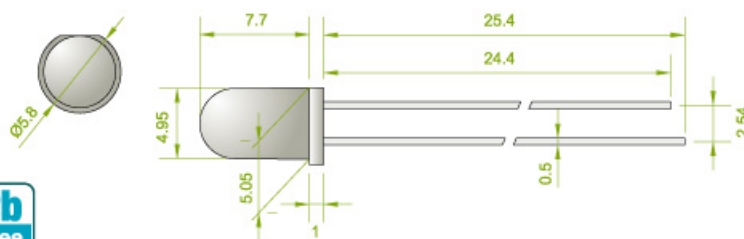
Application

- Full colour video screens
- Variable Message Sign (VMS)
- Outdoor advertising boards

Part Number	Chip			Lens Color	$V_f(V)$ at $I_f=20\text{mA}$		$I_v(\text{mcd})$ at $I_f=20\text{mA}$		Viewing Angle $2\theta_{1/2}$
	Material	Emitted Color	$\lambda_d(\text{nm})$		TYP.	MAX.	MIN.	TYP.	
TOL-36TUEHK-A	AlGaInP	Orange	625	Color Diffused	1.6	2.8	600	1200	110/50
TOL-36TUYJK-A	AlGaInP	Yellow	592		1.6	2.8	750	1500	
TOL-36TUGJK-A	InGaN	Pure Green	525		3.2	3.8	1000	1500	
TOL-36TUBEK-A	InGaN	Blue	470		3.2	3.8	225	450	

TOL-50

5mm Round



Features

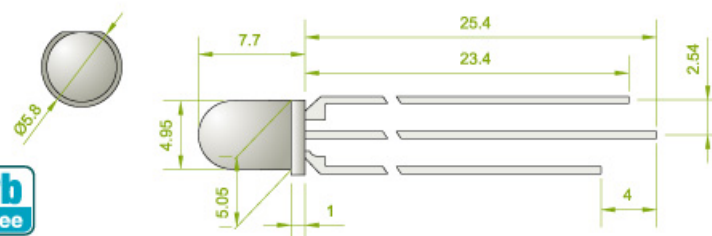
- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

Application

- Traffic signs
- Residential lighting
- Automotive interior lighting
- Medical and industrial equipments
- Highway variable message signs
- Consumer and gaming application
- Home appliance lighting application

Part Number	Chip			Lens Color	$V_f(V)$ at $I_f=20\text{mA}$		$I_v(\text{mcd})$ at $I_f=20\text{mA}$		Viewing Angle $2\theta_{1/2}$
	Material	Emitted Color	$\lambda_d(\text{nm})$		TYP.	MAX.	MIN.	TYP.	
TOL-502URNC	AlGaInP	Red	630	Water Clear	2.0	2.4	2000	4000	15
TOL-502UELC	AlGaInP	Orange	623		2.0	2.5	1200	2400	
TOL-502UANC	AlGaInP	Amber	605		2.0	2.5	2400	4500	
TOL-502UYMC	AlGaInP	Yellow	590		2.0	2.3	1550	3000	
TOL-502UGJC	AlGaInP	Green	572		2.0	2.5	750	1500	
TOL-503UREC	AlGaInP	Red	630		2.0	2.4	250	500	30
TOL-503UEHC	AlGaInP	Orange	623		2.0	2.4	600	1200	
TOL-503UAHC	AlGaInP	Amber	605		2.0	2.5	500	1000	
TOL-503UYFC	AlGaInP	Yellow	590		2.0	2.5	360	730	
TOL-504URBC	AlGaInP	Red	630		2.0	2.4	100	200	40
TOL-504UYHC	AlGaInP	Yellow	590		2.0	2.4	500	1000	45

5mm Round (Bi-Color)



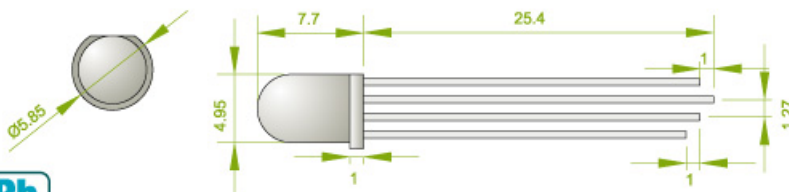
Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

Application

- Traffic Signs
- Home appliance & lighting
- Automotive interior lighting
- Highway Variable Message Signs
- Medical and Industrial Equipments
- Consumer and Gaming Electronics application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-506RGAW	GaAlAs/GaAs	Red	640	White	1.8	2.1	42	95	60
	GaP/GaP	Green	570		2.2	2.5	14	30	
TOL-509RBAW	AlGaAs/AlGaAs	Red	643	Diffused	2.0	2.4	60	120	70
	InGaN/GaN	Blue	470		3.0	4.0	100	200	

5mm Round (RGB)

Luminous Intensity measurement allowance is ±15%.
Wave length: the typical accuracy is ±2nm.

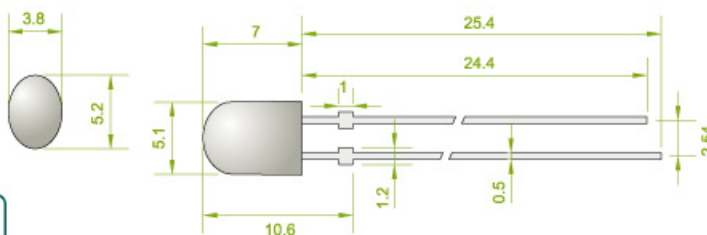
Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

Application

- Traffic signs
- Residential lighting
- Automotive interior lighting
- Highway variable message signs
- Medical and industrial equipments
- Consumer and gaming application
- Home appliance lighting application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-5043ACC	AlGaInP	Orange	624	Water	2.0	2.6	200	400	50
	InGaIn	Green	525		3.5	4.0	1250	2500	35
	InGaIn	Blue	465		3.5	4.0	500	1000	40
TOL-5043AAC	GaAlAs/GaAs	Red	640	Clear	2.0	2.4	103	190	55
	InGaIn/Sic	Green	525		3.5	4.0	980	2000	35
	InGaIn/GaN	Blue	470		3.5	4.0	390	750	35

TOL-56**5mm Oval**

Luminous Intensity measurement allowance is ±15%.
Wave length: the typical accuracy is ±2nm.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

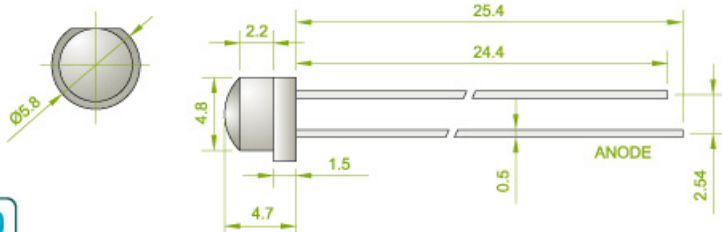
Application

- Full colour video screens
- Variable Message Sign (VMS)
- Outdoor advertising boards

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _s (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-56TUEJK-A	AlGaInP	Orange	625	Color Diffused	1.6	2.8	700	1400	110/45
TOL-56TUYHK-A	InAlGaP	Yellow	592		1.9	2.5	600	1200	
TOL-56TPGKK-A	InGaIn	Pure Green	525		2.6	3.8	900	1800	
TOL-56TUBFK-A	InGaIn	Blue	470		2.6	3.8	350	700	

TOL-4B

4.8mm



Luminous Intensity measurement allowance is $\pm 15\%$.
Wave length: the typical accuracy is $\pm 2\text{nm}$.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

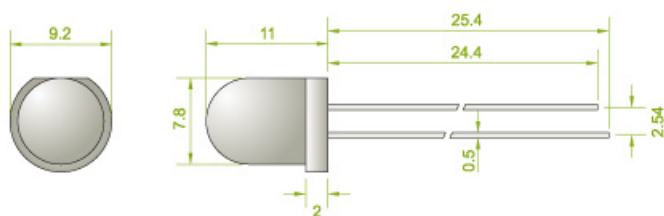
Application

- Full colour video screens
- Variable Message Sign (VMS)
- Outdoor advertising boards

Part Number	Chip			Lens Color	$V_f(V)$ at $I_f=20\text{mA}$		$I_v(\text{mcd})$ at $I_f=20\text{mA}$		Viewing Angle $2\theta_{1/2}$
	Material	Emitted Color	$\lambda_d(\text{nm})$		TYP.	MAX.	MIN.	TYP.	
TOL-4BEUE9C	AlGaInP	Orange	623	Water	2.0	2.4	65	130	150
TOL-4BDUYEC	AlGaInP	Yellow	590		2.0	2.3	225	450	120
TOL-4B7UG9C	AlGaInP	Green	572	Clear	2.0	2.6	70	140	70
TOL-4B7UBCC	InGaIn	Blue	470		3.0	3.5	160	300	70

TOL-80

8.0mm Round



Luminous Intensity measurement allowance is $\pm 15\%$.
Wave length: the typical accuracy is $\pm 2\text{nm}$.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

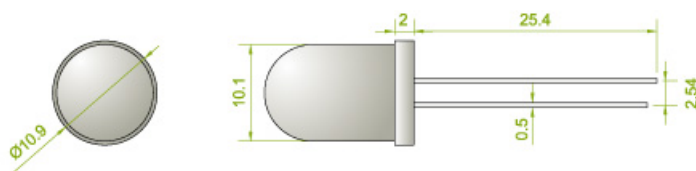
Application

- Indicator light
- Medical and industrial equipments
- Consumer and gaming application

Part Number	Chip			Lens Color	$V_f(V)$ at $I_f=20\text{mA}$		$I_v(\text{mcd})$ at $I_f=20\text{mA}$		Viewing Angle $2\theta_{1/2}$
	Material	Emitted Color	$\lambda_d(\text{nm})$		TYP.	MAX.	MIN.	TYP.	
TOL-803URDC	AlGaInP	Red	640	Water	2.0	2.4	200	400	30
TOL-803HYBC	GaAsP	Yellow	590		2.1	2.4	100	200	
TOL-803HGBC	GaP/GaP	Green	525	Clear	2.2	2.5	100	200	
TOL-803UBNC	InGaIn	Blue	470		3.5	4.0	1700	3600	

TOL-A03

10mm Round



Luminous Intensity measurement allowance is $\pm 15\%$.
Wave length: the typical accuracy is $\pm 2\text{nm}$.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

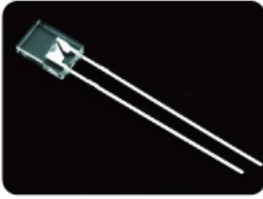
Application

- Indicator light
- Medical and industrial equipments
- Consumer and gaming application

Part Number	Chip			Lens Color	$V_f(V)$ at $I_f=20\text{mA}$		$I_v(\text{mcd})$ at $I_f=20\text{mA}$		Viewing Angle $2\theta_{1/2}$
	Material	Emitted Color	$\lambda_d(\text{nm})$		TYP.	MAX.	MIN.	TYP.	
TOL-A03URHC	AlGaInP	Red	630	Water	2.0	2.5	500	1100	30
TOL-A03UEOC	AlGaInP	Orange	623		2.1	2.6	2500	5000	
TOL-A03UYOC	AlGaInP	Yellow	590	Clear	2.2	2.5	2600	5200	
TOL-A03UBNC	InGaIn/SiC	Blue	470		3.5	4.0	2000	4000	

TOL-C9

Rectangular (2.05mm x 5.02mm)



Luminous Intensity measurement allowance is $\pm 15\%$.
Wave length: the typical accuracy is $\pm 2\text{nm}$.

Features

- Superior brightness
- Low power consumption
- Reliability life test confirmed
- 2kV ESD withstanding

Application

- Automotive interior lighting
- Medical and industrial equipments
- Consumer and gaming application
- Home appliance lighting application

Part Number	Chip			Lens Color	V _f (V) at I _f =20mA		I _v (mcd) at I _f =20mA		Viewing Angle 2θ½
	Material	Emitted Color	λ _d (nm)		TYP.	MAX.	MIN.	TYP.	
TOL-C9EUR3K	AlGaInP	Red	640	Water Clear	2.0	2.5	7.0	15	170
TOL-C9EUE3K	AlGaInP	Orange	623		2.0	2.4	10	20	165
TOL-C9EHY1D	GaAsP/GaP	Yellow	590		2.0	2.4	3.0	6.0	160
TOL-C9BHG2K	GaP/GaP	Green	568		2.2	2.5	5.0	10	100

