



**BRIGHTTEK**  
BRIGHTTEK (EUROPE) LIMITED

# BRIGHTTEK

## 2016 Catalogue

- **SMD: Narrow Viewing Angle**



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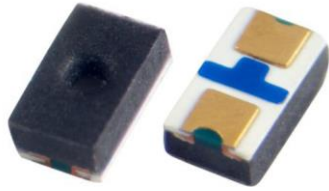
# TOP VIEW

## Top View

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# PCB / CHIP LED

## 0603BF (1608)



### Features:

- Low Power LED
- Top View
- Narrow Viewing Angle
- No Side Leak Package
- Compatible Package
- High Efficiency
- High Lumen Output

### Applications:

- Indication Lamps
- Keyboard Backlight
- 3C Consumer Goods

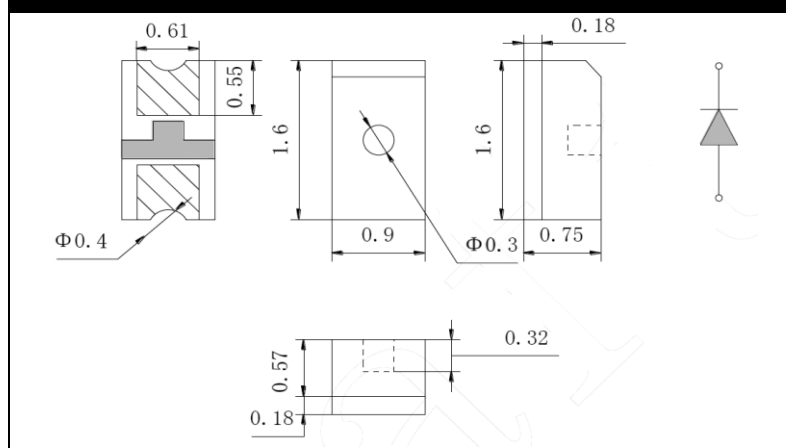
### Electrical & Optical Characteristics (typ. at 5mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
N0W14S85BF	Sky White	8300-86500K	50	13	3.0	5	20

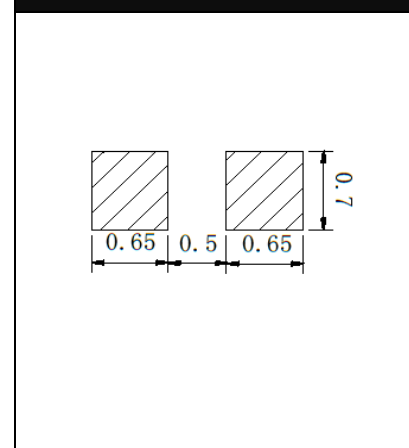
### Colour Electrical & Optical Characteristics (typ. at 5mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR14S83BF	Red	615-630nm	50	11	1.9	5	20
NOA14S80BF	Amber	600-615nm	50	11	1.9	5	20
NOY14S84BF	Yellow	585-595nm	50	11	1.9	5	20
N0G19S24BF	Green	562-576nm	50	4.5	1.9	5	20
N0B26S70ZBF	Blue	462-473nm	50	10	3.0	5	20

### Package Dimensions (mm)



### Recommended Solder Pattern



# PCB / CHIP LED

## 1206 (3015)



### Features:

- Low Power LED
- Top View
- Various Colour
- Narrow Viewing Angle
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Indication Lamps
- Decoration Light
- 3C Consumer Goods
- Light Strip

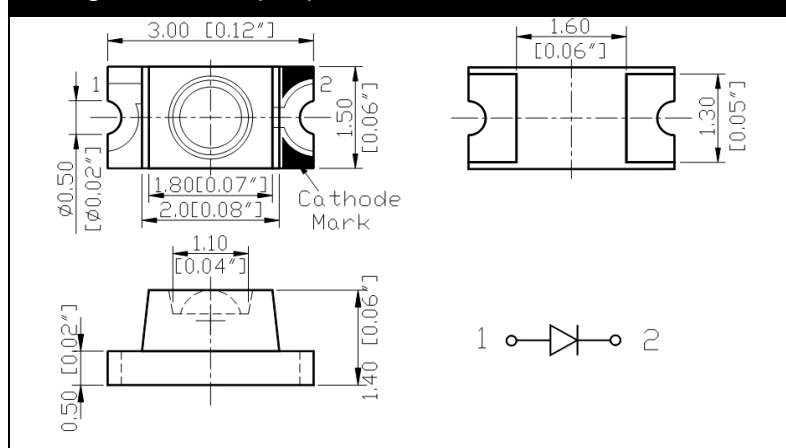
### Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOW11S02	Sky White	5600-46500K	165	320	3.2	20	30

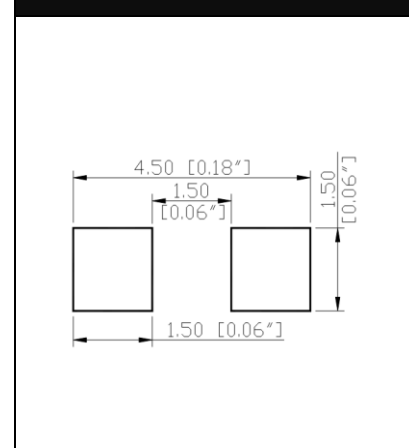
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR11S01	Red <span style="color:red">■</span>	620-635nm	40	450	2.0	20	30
NOR11S00	Red <span style="color:red">■</span>	615-630nm	40	600	2.0	20	30
NOR24S32	Red <span style="color:red">■</span>	615-630nm	40	1900	2.0	20	30
NOY11S03	Yellow <span style="color:yellow">■</span>	585-595nm	40	660	2.0	20	30
NOG10S99	Green <span style="color:green">■</span>	565-576nm	40	150	2.2	20	30
NOG24S31	Green <span style="color:green">■</span>	565-576nm	40	260	2.0	20	30
NOG17S00	Green <span style="color:green">■</span>	520-530nm	40	2500	3.1	20	30
NOB10S98	Blue <span style="color:blue">■</span>	465-475nm	40	430	3.2	20	30
NOB24S30	Blue <span style="color:blue">■</span>	460-470nm	40	790	3.0	20	30

### Package Dimensions (mm)

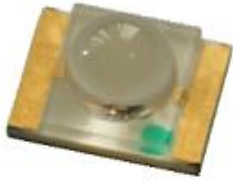


### Recommended Solder Pattern



# PCB / CHIP LED

## 1209 (3224)



### Features:

- Low Power LED
- Top View
- Narrow Viewing Angle
- Various Colour
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Indication Lamps
- Decoration Light
- 3C Consumer Goods
- Light Strip

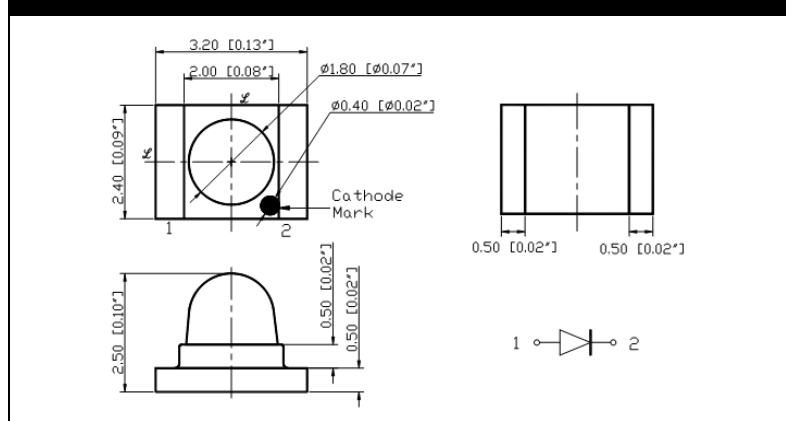
### Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOW10S62	Sky White	5600-46500K	130	140	3.1	20	30
NOW16S94	Sky White	5600-46500K	130	280	3.0	20	30

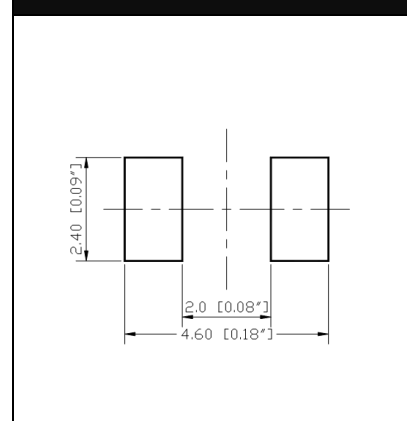
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR10S61	Red <span style="color:red">■</span>	625-635nm	15	1600	2.0	20	30
NOR10S60	Red <span style="color:red">■</span>	620-630nm	15	3850	2.0	20	30
NOA16S95	Amber <span style="color:orange">■</span>	600-610nm	15	3350	2.0	20	30
NOY10S63	Yellow <span style="color:yellow">■</span>	585-595nm	15	3400	2.0	20	30
NOG10S56	Green <span style="color:green">■</span>	565-576nm	15	1000	2.0	20	30
NOG10S57	Green <span style="color:green">■</span>	520-530nm	15	8800	3.2	20	30
NOB10S55	Blue <span style="color:blue">■</span>	460-470nm	15	1300	3.1	20	30

### Package Dimensions (mm)



### Recommended Solder Pattern



# PCB / CHIP LED

## 1209 (3224) Dual Colours / RGB



### Features:

- Low Power LED
- Top View
- Narrow Viewing Angle
- Dual Colours / RGB
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

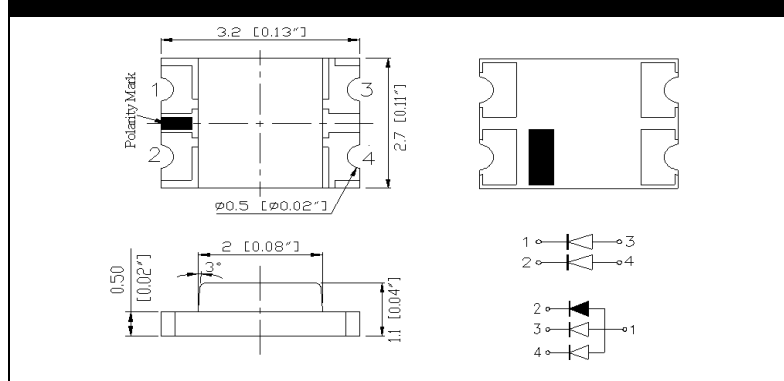
### Applications:

- Indication Lamps
- Decoration Light
- 3C Consumer Goods
- Light Strip

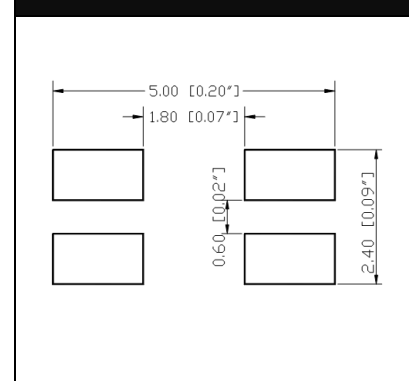
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)
N0D11S90	Red/Green	640/570nm	60	60/40	2.0/2.0	20/20

### Package Dimensions (mm)



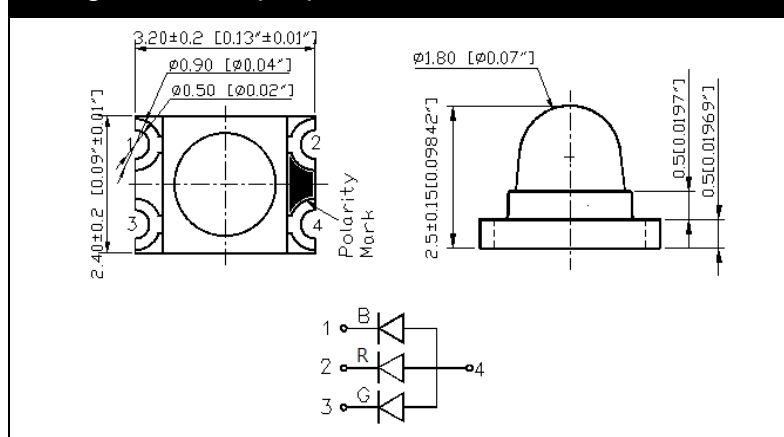
### Recommended Solder Pattern



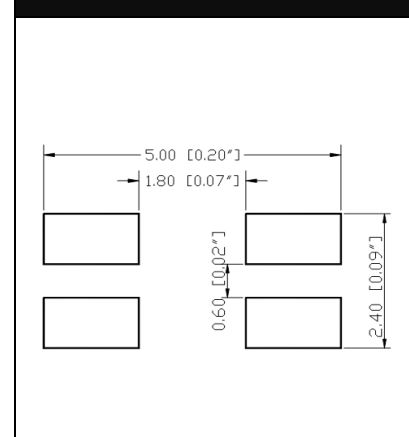
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)
N0M11S91	Red/Green/Blue	620/525/470nm	60	160/460/65	2.0/3.1/3.1	20/20/20

### Package Dimensions (mm)



### Recommended Solder Pattern





# PLCC2 LED

## 3528+Lens White Package



### Features:

- Top View
- Narrow Viewing Angle
- Epoxy Lens
- Various Colour
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Commercial Lighting
- Indoor Lighting
- Traffic Signs
- Information Board
- Indication Lamps

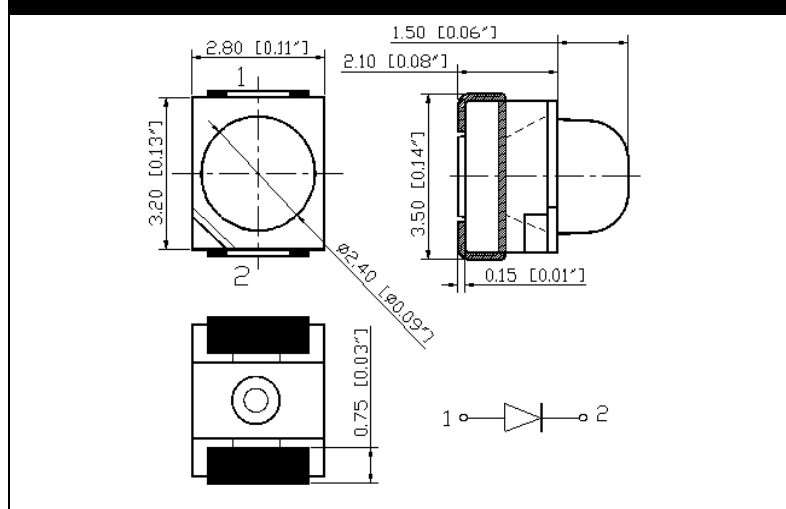
### Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOW09S06	Sky White	5600-46500K	30	2600	3.3	20	30

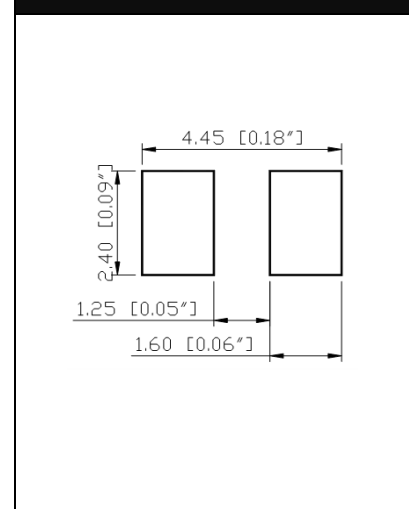
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR17S18	Red	625-635nm	30	7000	2.0	20	30
NOR09S05	Red	625-635nm	30	980	2.0	20	30
NOR09S04	Red	620-630nm	30	3500	2.0	20	30
NOY18S43	Yellow	585-595nm	30	5600	2.0	20	30
NOY18S99	Yellow	585-590nm	30	5600	2.0	20	30
NOY09S07	Yellow	565-595nm	30	1300	2.0	20	30
NOG09S02	Green	565-576nm	30	400	2.0	20	30
NOG09S03	Green	520-530nm	30	4200	3.3	20	30
NOG18S44	Green	500-510nm	30	3400	3.3	20	30
NOB09S01	Blue	462-475nm	30	900	3.3	20	30

### Package Dimensions (mm)



### Recommended Solder Pattern



# PLCC2 LED

## 3528+Lens Black Surface / Package



### Features:

- Top View
- Narrow Viewing Angle
- Epoxy Lens
- Various Colour
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Commercial Lighting
- Indoor Lighting
- Traffic Signs
- Information Board
- Indication Lamps

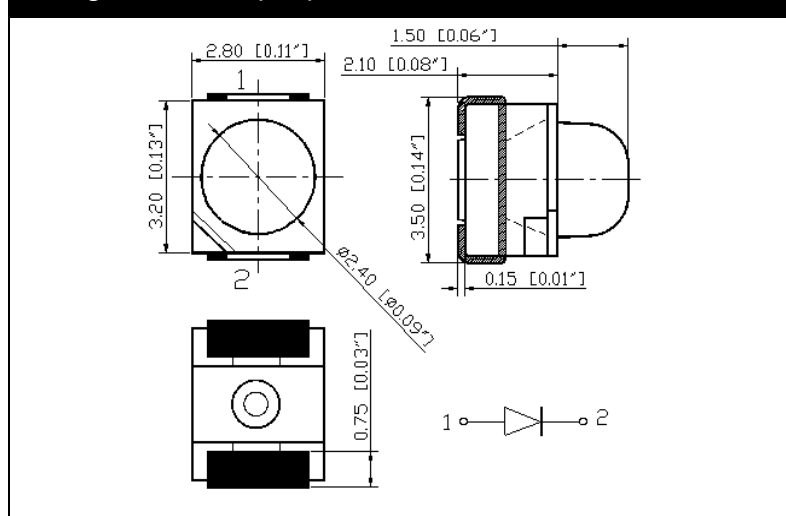
### Colour Electrical & Optical Characteristics (typ. at 20mA) Black Surface Package

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR18S24BS	Red	620-630nm	30	3200	2.0	20	30
NOR18S25BS	Red	615-630nm	30	11000	2.8	50	55
NOA18S20BS	Amber	600-610nm	30	22000	2.8	50	55
NOY15S58BS	Yellow	585-595nm	30	1300	2.0	20	30
NOY15S67BS	Yellow	585-595nm	30	1700	2.0	20	30
NOY18S26BS	Yellow	585-595nm	30	13000	2.8	50	55
NOG18S23BS	Green	520-530nm	30	14400	3.4	50	55
NOG18S22BS	Green	500-510nm	30	2800	3.5	50	55
NOB18S21BS	Blue	460-470nm	30	2100	3.5	50	55

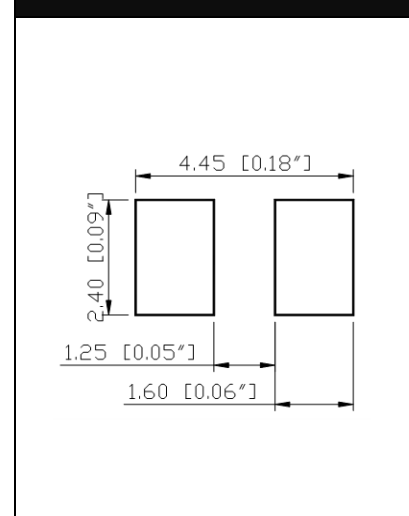
### Colour Electrical & Optical Characteristics (typ. at 20mA) Black Body Package

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR10S38BF	Red	620-630nm	30	9000	2.0	50	55
NOY18S27BF	Yellow	585-595nm	30	3600	2.0	20	30
NOG18S45BF	Green	520-530nm	30	11500	3.2	20	30
NOB18S27BF	Blue	460-470nm	30	1900	3.3	30	35

### Package Dimensions (mm)



### Recommended Solder Pattern



# PLCC4 LED

## 3528+Lens



### Features:

- Top View
- Narrow Viewing Angle
- Epoxy Lens
- Various Colour
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Commercial Lighting
- Indoor Lighting
- Traffic Signs
- Information Board
- Indication Lamps

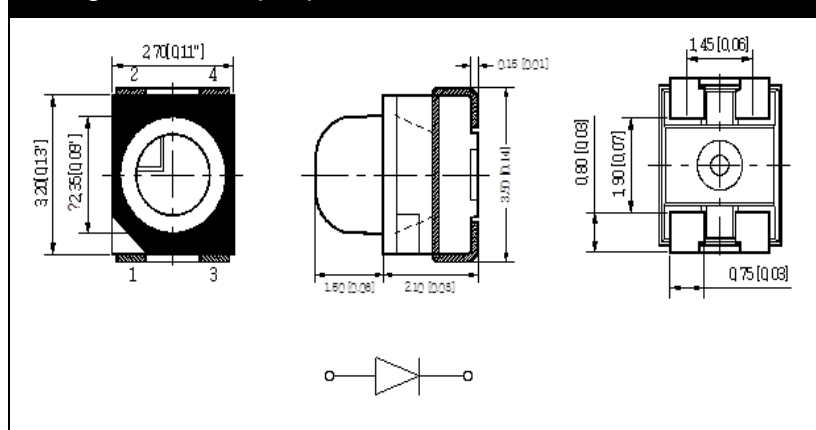
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR25S57	Red	630-650nm	30	75	2.0	20	30
NOR08S50	Red	625-635nm	30	980	2.0	20	30
NOR08S49	Red	620-630nm	30	3500	2.0	20	30
NOR08S44	Red	620-630nm	30	8000	2.5	50	70
NOA09S53	Amber	615-630nm	30	1400	2.0	20	30
NOY08S45	Yellow	588-595nm	30	6500	2.0	50	70
NOY08S52	Yellow	588-595nm	30	1600	2.0	20	30
NOY09S51	Yellow	585-595nm	30	3500	2.0	20	30
NOY09S52	Yellow	585-595nm	30	3800	2.0	20	30
NOG08S47	Green	565-576nm	30	400	2.0	20	30
NOG08S48	Green	520-530nm	30	4200	3.3	20	30
NOG08S46	Green	520-530nm	30	6200	3.5	30	30
NOB09S50	Blue	465-475nm	30	1200	3.2	20	30
NOB08S53	Blue	465-475nm	30	900	3.1	20	30

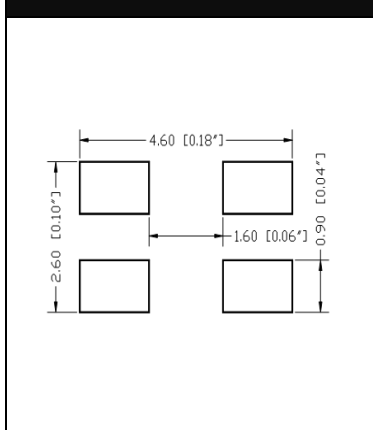
### Colour Electrical & Optical Characteristics (typ. at 20mA) Black Surface Package

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOA19S90BS	Amber	600-610nm	30	22000	2.8	50	55

### Package Dimensions (mm)



### Recommended Solder Pattern



# SMC LED

## 3030 0.2~1W Colour



### Features:

- Mid / High Power LED
- Top View
- EMC Package
- Narrow Viewing Angle
- Compatible Package
- High Efficiency
- High Lumen Output
- Large Emitting Area

### Applications:

- Commercial Lighting
- Decorative Lighting
- Information Board
- Automotive
- Architectural Lighting

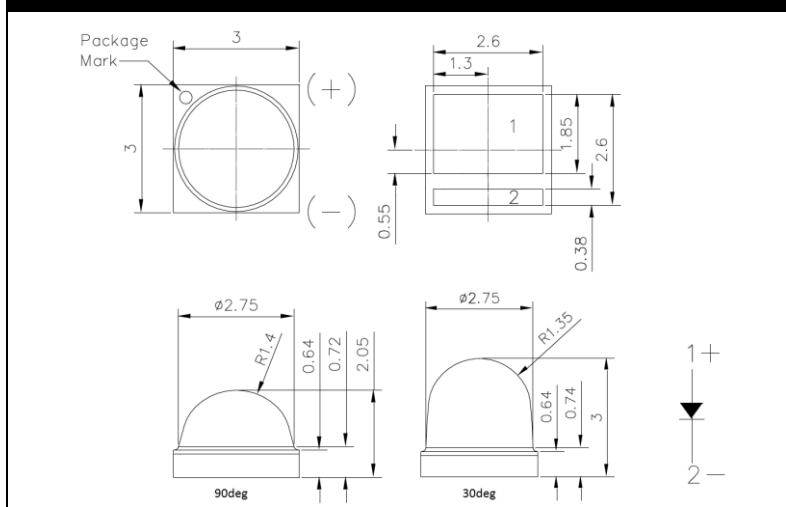
### Colour Electrical & Optical Characteristics (typ. at 60mA)

Order Code	Colour	WL (nm)	2θ <sub>1/2</sub> (°)	Φ <sub>V</sub> (lm)	V <sub>F</sub> (V)	I <sub>F</sub> (mA)	I <sub>MAX</sub> (mA)
NOR25S51	Red	620-630nm	30	60	2.2	350	500
NOR26S73	Red	620-630nm	30	11	2.3	70	100
NOR25S49	Red	612-620nm	30	12	2.3	70	100
NOY26S72	Yellow	585-595nm	30	12	2.3	70	100
NOG25S52	Green	520-530nm	30	100	3.2	350	500
NOB25S53	Blue	460-470nm	30	28	3.2	350	500

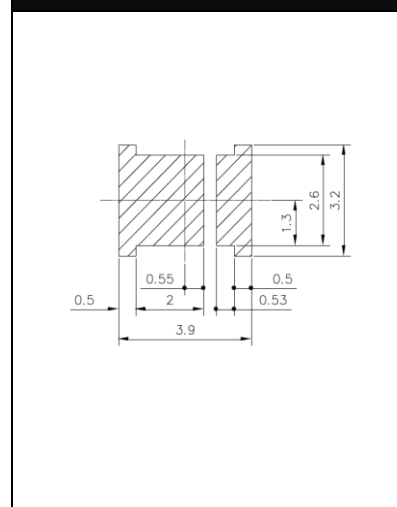
### Colour Electrical & Optical Characteristics (typ. at 60mA)

Order Code	Colour	WL (nm)	2θ <sub>1/2</sub> (°)	Φ <sub>V</sub> (lm)	V <sub>F</sub> (V)	I <sub>F</sub> (mA)	I <sub>MAX</sub> (mA)
NOR25S54	Red	620-630nm	90	60	2.2	350	500
NOG25S55	Green	520-530nm	90	100	3.2	350	500
NOB25S56	Blue	460-470nm	90	28	3.2	350	500

### Package Dimensions (mm)



### Recommended Solder Pattern



# SMD Lamp

## 5mm Round 5.4t



### Features:

- Low Power LED
- Top View
- Small Viewing Angle
- Water Clear / Diffused Lens
- Suitable for SMD
- High Efficiency
- High Intensity Output
- Reel Packing

### Applications:

- Indication Light
- Traffic Signal
- Information Board
- Decoration Lighting
- Signal and Switch

### White Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
N0W23S07	Sky White	5600-46500K	30	2300	3.2	20	30

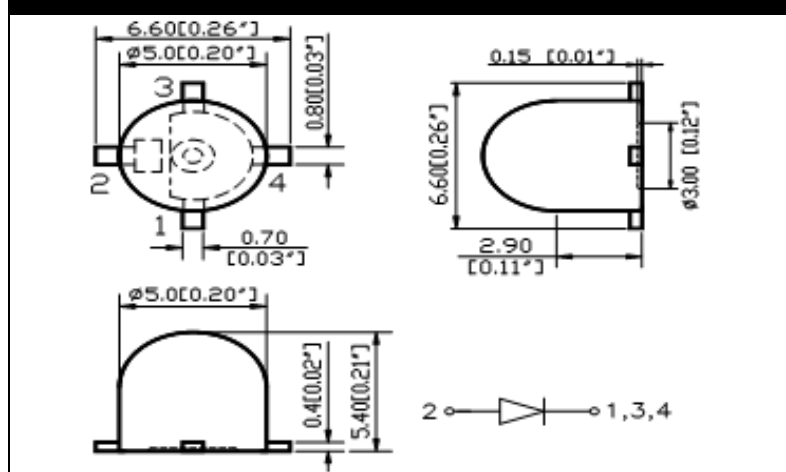
### Colour (Water Clear Lens) Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR23S08	Red	630-650nm	30	800	2.0	20	30
NOR23S05	Red	615-630nm	30	4400	2.0	20	30
NOA23S01	Amber	600-610nm	30	3700	2.1	20	30
NOY23S06	Yellow	585-595nm	30	1500	2.0	20	30
NOG18S29	Green	565-576nm	30	500	2.0	20	30
NOG23S03	Green	520-530nm	30	7500	3.1	20	30
NOG23S04	Green	500-510nm	30	3600	3.3	20	30
NOB23S02	Blue	465-475nm	30	1100	3.2	20	30

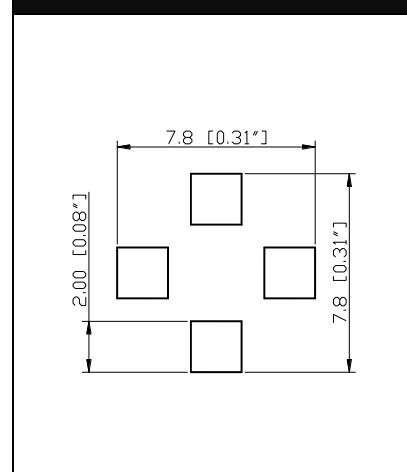
### Colour (Diffused Lens) Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR18S30	Red	615-630nm	160	110	2.0	20	30

### Package Dimensions (mm)



### Recommended Solder Pattern



# Lead Frame

## Lead Frame

- 2421	.....14-15
- 2520	.....16-17

# Lead Frame

## 2421 Type A



### Features:

- Top View
- Low Power LED
- Small Viewing Angle
- Various Colour
- Subminiature LED
- High Efficiency
- High Intensity Output
- Reel Packing

### Applications:

- Indication Light
- Traffic Signal
- Information Board
- Decoration Lighting
- Signal and Switch

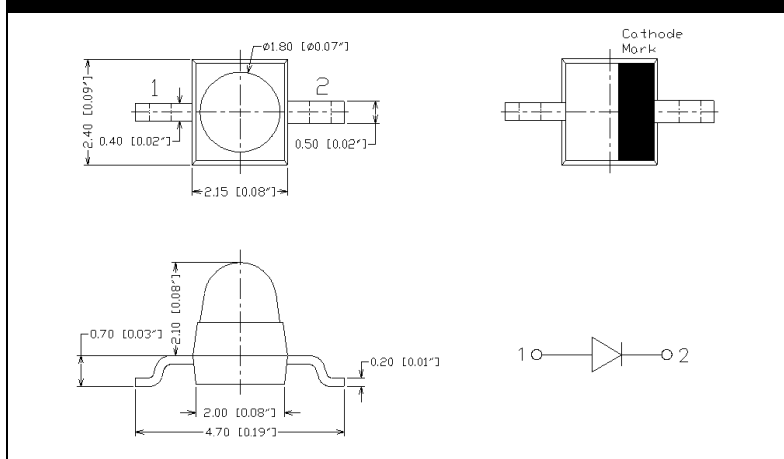
### White Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
N0W12S29	Sky White	5600-46500K	165	380	3.2	20	30

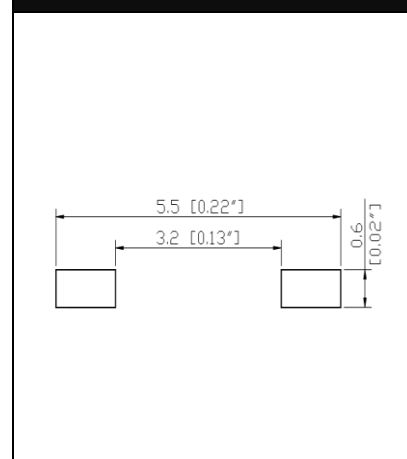
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR12S28	Red <span style="color: red;">■</span>	625-635nm	20	2000	2.0	20	30
NOR12S27	Red <span style="color: red;">■</span>	615-630nm	20	2400	2.0	20	30
NOY12S30	Yellow <span style="color: yellow;">■</span>	585-595nm	20	2600	2.0	20	30
NOG12S25	Green <span style="color: green;">■</span>	565-576nm	20	520	2.0	20	30
NOG12S26	Green <span style="color: green;">■</span>	520-530nm	20	10000	3.2	20	30
NOB12S24	Blue <span style="color: blue;">■</span>	460-470nm	20	1300	3.1	20	30

### Package Dimensions (mm)



### Recommended Solder Pattern



# Lead Frame

## 2421 Type B



### Features:

- Top View
- Low Power LED
- Small Viewing Angle
- Various Colour
- Subminiature LED
- High Efficiency
- High Intensity Output
- Reel Packing

### Applications:

- Indication Light
- Traffic Signal
- Information Board
- Decoration Lighting
- Signal and Switch

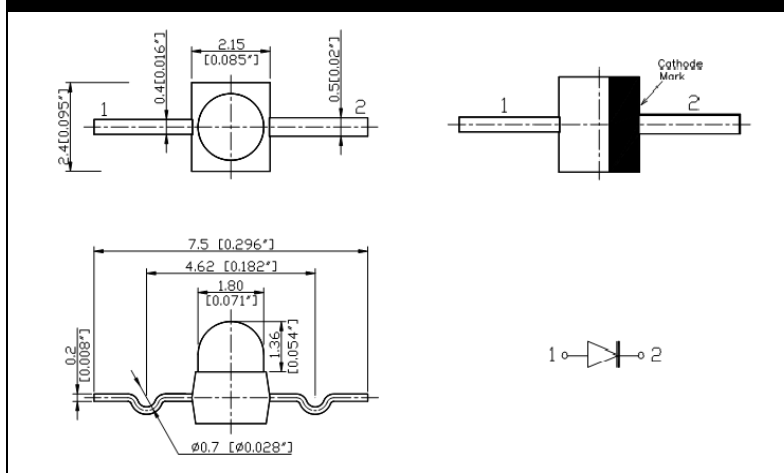
### White Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	CCT (K)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOW12S21	Sky White	5600-46500K	165	115	3.2	20	30

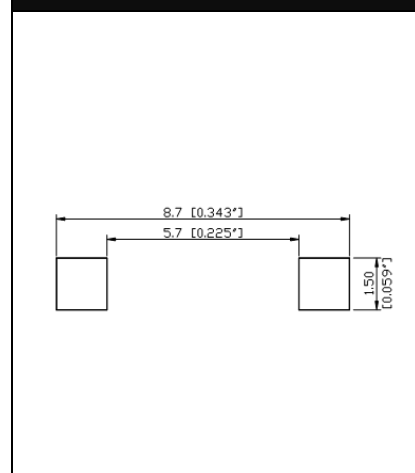
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR12S20	Red <span style="color: red;">■</span>	625-635nm	20	2000	2.0	20	30
NOR12S19	Red <span style="color: red;">■</span>	615-630nm	20	2400	2.0	20	30
NOY12S22	Yellow <span style="color: yellow;">■</span>	585-595nm	20	2875	2.0	20	30
NOG12S18	Green <span style="color: green;">■</span>	565-576nm	20	520	2.0	20	30
NOB12S17	Blue <span style="color: blue;">■</span>	460-470nm	20	1300	3.1	20	30

### Package Dimensions (mm)



### Recommended Solder Pattern





# Lead Frame

## 2520 Type A



### Features:

- Top View
- Low Power LED
- Small Viewing Angle
- Various Colour
- Subminiature LED
- High Efficiency
- High Intensity Output
- Reel Packing

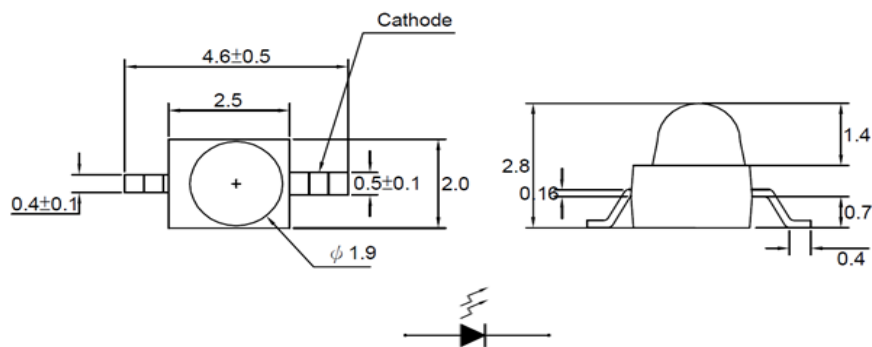
### Applications:

- Indication Light
- Traffic Signal
- Information Board
- Decoration Lighting
- Signal and Switch

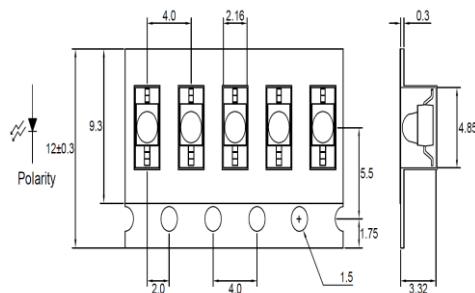
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR08S23	Red <span style="color:red">■</span>	627-640nm	20	2700	2.2	20	50
NOR08S17	Red <span style="color:red">■</span>	625-640nm	20	300	2.2	20	30
NOR08S18	Red <span style="color:red">■</span>	625-640nm	20	700	2.1	20	50
NOA08S14	Amber <span style="color:orange">■</span>	595-610nm	20	1500	2.2	20	30
NOY08S20	Yellow <span style="color:yellow">■</span>	590-600nm	20	1800	2.2	20	30
NOY08S21	Yellow <span style="color:yellow">■</span>	590-600nm	20	900	2.2	20	50
NOG08S13	Green <span style="color:green">■</span>	570-580nm	20	450	2.2	20	25
NOG08S22	Green <span style="color:green">■</span>	520-535nm	20	1800	3.7	20	30
NOB08S15	Blue <span style="color:blue">■</span>	465-480nm	20	300	3.7	20	30

### Package Dimensions (mm)



### Packing Dimension



# Lead Frame

## 2520 Type B



### Features:

- Top View
- Low Power LED
- Small Viewing Angle
- Various Colour
- Subminiature LED
- High Efficiency
- High Intensity Output
- Reel Packing

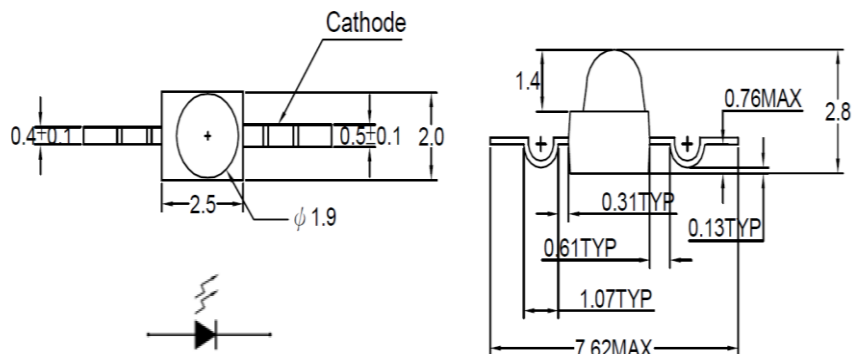
### Applications:

- Indication Light
- Traffic Signal
- Information Board
- Decoration Lighting
- Signal and Switch

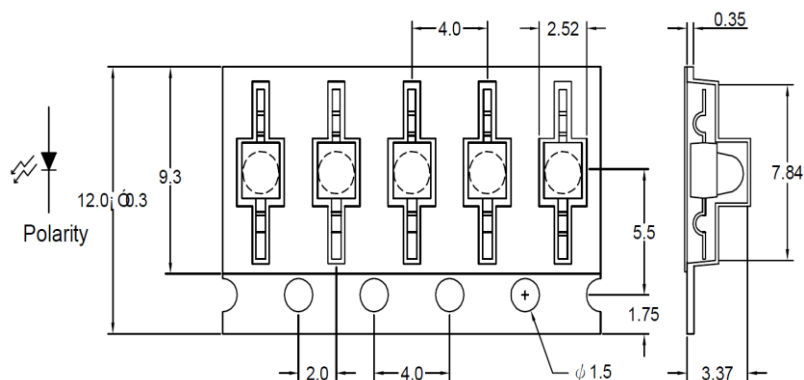
### Colour Electrical & Optical Characteristics (typ. at 20mA)

Order Code	Colour	WL (nm)	$2\theta_{1/2}$ (°)	$I_V$ (mcd)	$V_F$ (V)	$I_F$ (mA)	$I_{MAX}$ (mA)
NOR16S68	Red <span style="color:red">■</span>	620-640nm	20	2200	2.0	20	25
NOY23S28	Yellow <span style="color:yellow">■</span>	590-600nm	20	900	2.1	20	50
NOG23S26	Green <span style="color:green">■</span>	570-580nm	20	450	2.1	20	25
NOB23S27	Blue <span style="color:blue">■</span>	460-480nm	20	300	3.5	20	30

### Package Dimensions (mm)



### Packing Dimension







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