

## 130pcs Standard LED assortment 5 mm with pre-resistors

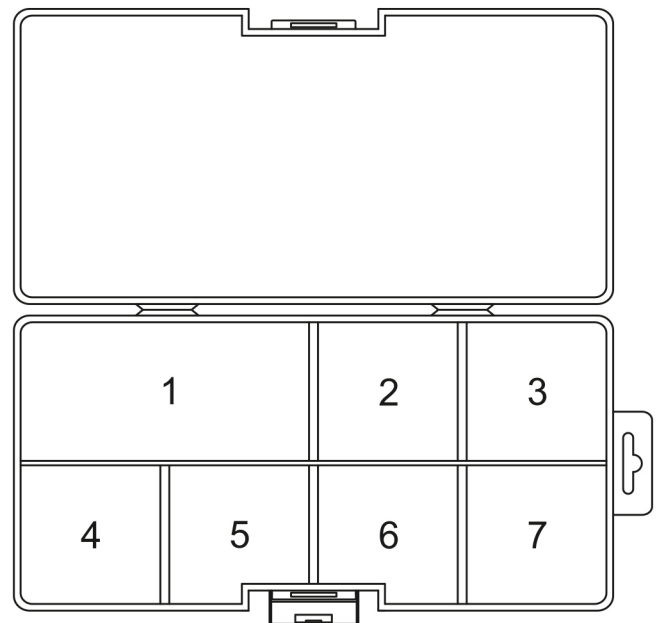
Item No.: 00430305

This range of experiments and practitioners with superbright standard LEDs with a diameter of 5 mm and various series resistors is ideal for immediate start in experiments with semiconductor light. Through resistor combinations of parallel or series connection or varying the supply voltage, different operating currents (brightnesses) can be realized. Addition LED mounting clips for easy mount and installation onto casing or panel. A brief description of the components contained is clearly printed on the inside of the lid.

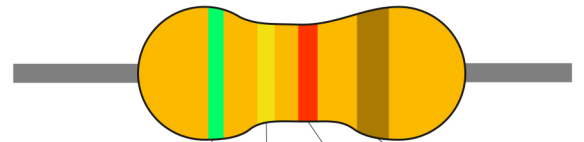
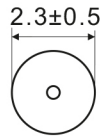
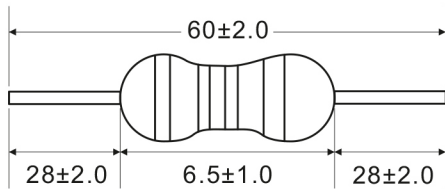


### Set Contents:

Section	Contents	pcs	Specification
1	220Ω Carbon film resistor, 0.25W ±5%	15	page 2
	470Ω Carbon film resistor, 0.25W ±5%	15	
	680Ω Carbon film resistor, 0.25W ±5%	15	
	1KΩ Carbon film resistor, 0.25W ±5%	15	
	ø3mm LED mounting	10	page 3
2	ø3mm LED, Cold White	10	page 4
3	ø3mm LED, Warm White	10	page 5
4	ø3mm LED, Yellow	10	page 6
5	ø3mm LED, Blue	10	page 7
6	ø3mm LED, Red	10	page 8
7	ø3mm LED, Green	10	page 9



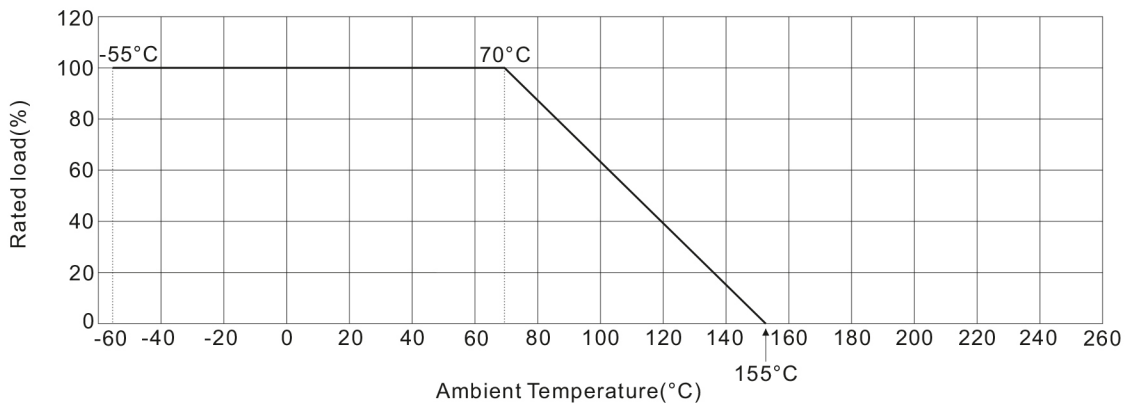
## Carbon Film Fixed Resistor



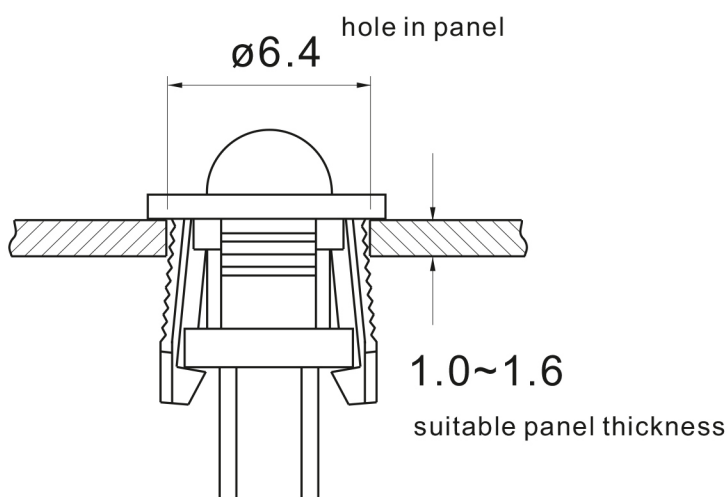
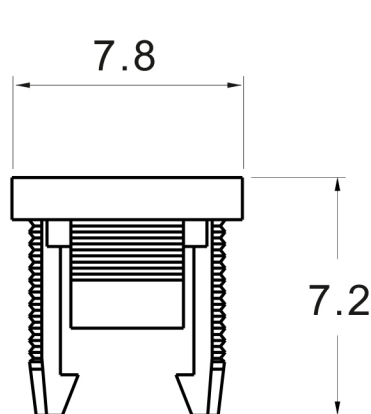
Resistance - 220Ω, 470Ω, 680Ω, 1KΩ  
 Rated Power - 0.25W  
 Maximum Working Voltage - 250V  
 Maximum Overload Voltage - 500V  
 Dielectric Withstanding Voltage - 350V

	1st digit	2nd digit	multiply	tolerance
<b>Black</b>	<b>0</b>	<b>0</b>	<b>1Ω</b>	
<b>Brown</b>	<b>1</b>	<b>1</b>	<b>10Ω</b>	<b>1%</b>
<b>Red</b>	<b>2</b>	<b>2</b>	<b>100Ω</b>	<b>2%</b>
<b>Orange</b>	<b>3</b>	<b>3</b>	<b>1KΩ</b>	
<b>Yellow</b>	<b>4</b>	<b>4</b>	<b>10KΩ</b>	
<b>Green</b>	<b>5</b>	<b>5</b>	<b>100KΩ</b>	<b>0.50%</b>
<b>Blue</b>	<b>6</b>	<b>6</b>	<b>1MΩ</b>	<b>0.25%</b>
<b>Violet</b>	<b>7</b>	<b>7</b>	<b>10MΩ</b>	<b>0.10%</b>
<b>Grey</b>	<b>8</b>	<b>8</b>		<b>0.05%</b>
<b>White</b>	<b>9</b>	<b>9</b>		
<b>Gold</b>				<b>5%</b>
<b>Silver</b>				<b>10%</b>

Power derating curve



## LED Mounting Clips



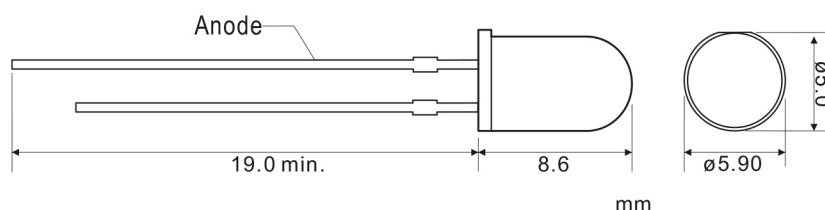
Material: PA66, 94V-2

Color: Black

Operating Temperature: -10~75°C

## ø5mm Cold White LED Diode

Chip Material: InGaAlP  
 Lens Color: Water clear  
 Source Color: Cold White



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	20	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

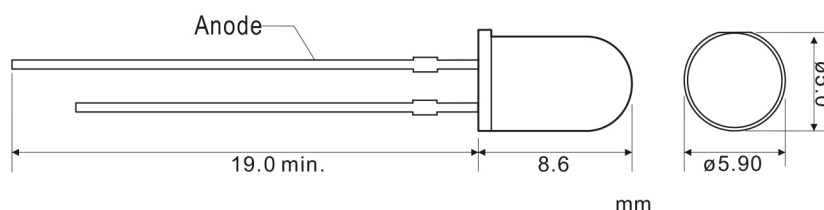
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	12000	—	14000	med
Color Temperature	λd	I <sub>F</sub> =20mA	7000	—	9000	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	20	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	2.8	3.0	3.2	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA

\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V

## ø5mm Warm White LED Diode

Chip Material: InGaAlP  
 Lens Color: Water clear  
 Source Color: Warm White



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	20	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

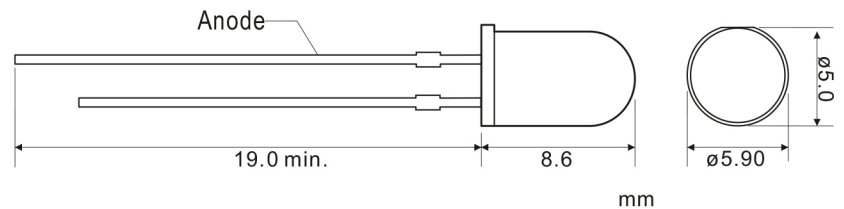
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	18000	—	20000	med
Color Temperature	λd	I <sub>F</sub> =20mA	2800	—	3200	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	25	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	3.0	3.2	3.4	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA

\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V

## ø5mm Yellow LED Diode

Chip Material: GaP  
 Lens Color: Yellow Diffused  
 Source Color: Yellow



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	30	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

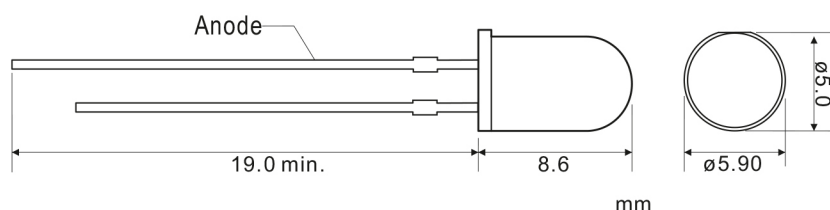
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	600	—	800	med
Color Temperature	λd	I <sub>F</sub> =20mA	587	—	590	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	35	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	1.9	2.2	2.4	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	20	uA

\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V

## ø5mm Blue LED Diode

Chip Material: InGaAlP  
 Lens Color: Blue Diffused  
 Source Color: Blue



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	30	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

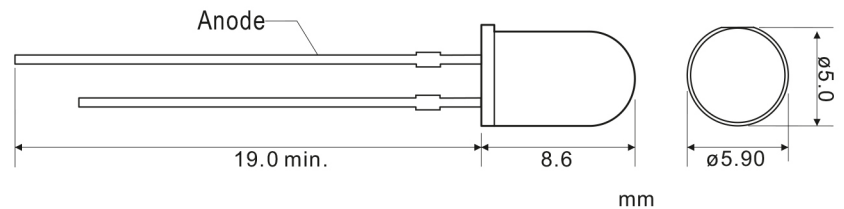
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	1000	—	2000	med
Color Temperature	λd	I <sub>F</sub> =20mA	460	465	470	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	35	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	2.8	3.0	3.2	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA

\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V

## ø5mm Red LED Diode

Chip Material: GaP  
 Lens Color: Red Diffused  
 Source Color: Red



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	20	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	600	—	800	med
Color Temperature	λd	I <sub>F</sub> =20mA	620	—	625	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	35	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	1.9	2.2	2.4	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA

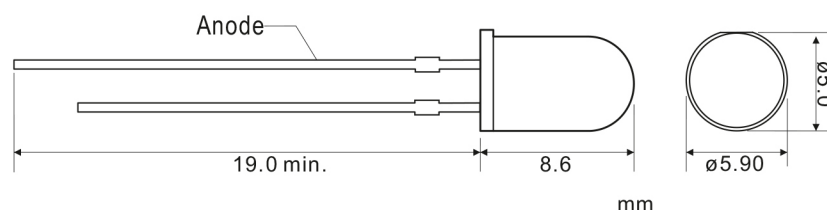
\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V



## ø5mm Green LED Diode

Chip Material: InGaAlP  
 Lens Color: Green Diffused  
 Source Color: Green



### Absolute Maximum Ratings at Ta=25°C:

Parameter	Symbol	Maximum	Unit
Max. Power Dissipation	Pd	80	mW
Peak Operating current (Duty 1/10@1KHz)	I <sub>FP</sub>	75	mA
Max. Continuous Operating current	I <sub>F</sub>	20	mA
Max. Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature Range	Topr	-25°C to 80	°C
Storage Temperature Range	Tstg	-30°C to 100	°C

### Electrical/Optical Characteristics at Ta=25°C:

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	80	—	120	med
Color Temperature	λd	I <sub>F</sub> =20mA	568	—	572	nm
Beam angle	2 <sup>θ</sup> 1/2	I <sub>F</sub> =20mA	—	35	—	deg.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	2.8	3.0	3.2	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	—	—	10	uA

\*Tolerance of Luminous Intensity ±10%

\*Tolerance of Forward Voltage ±0.1V