

130pcs Standard LED assortment 3 mm with pre-resistors

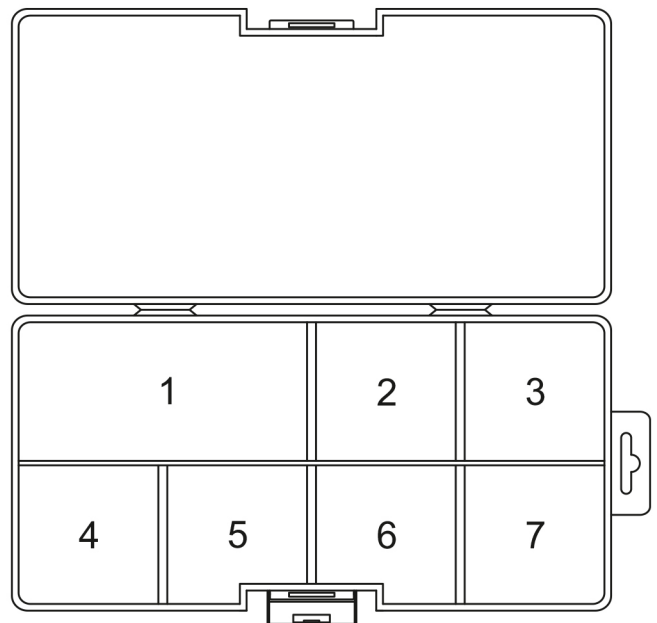
Item No.: 00430303

This range of experiments and practitioners with superbright standard LEDs with a diameter of 3 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.

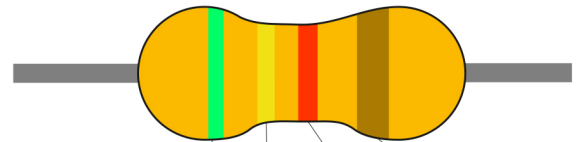
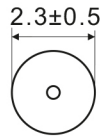
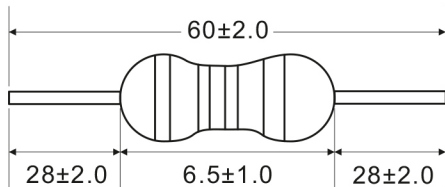


Set Contents:

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



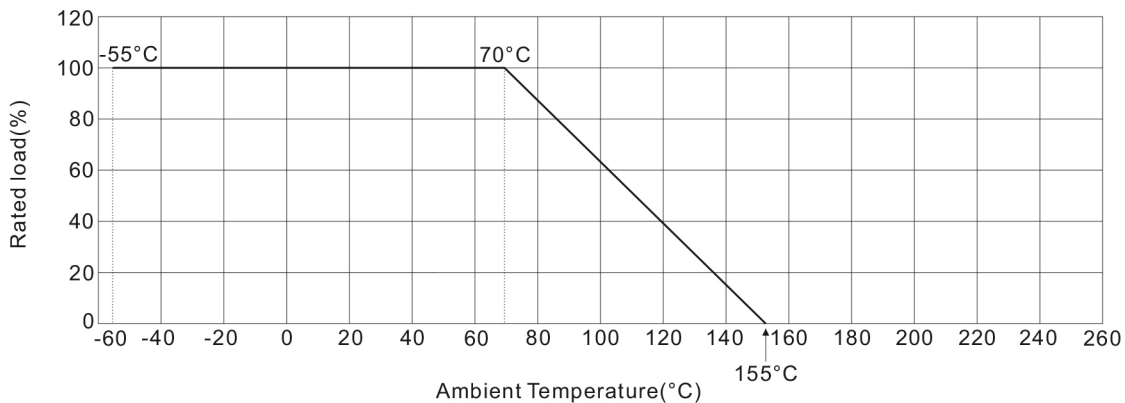
Carbon Film Fixed Resistor



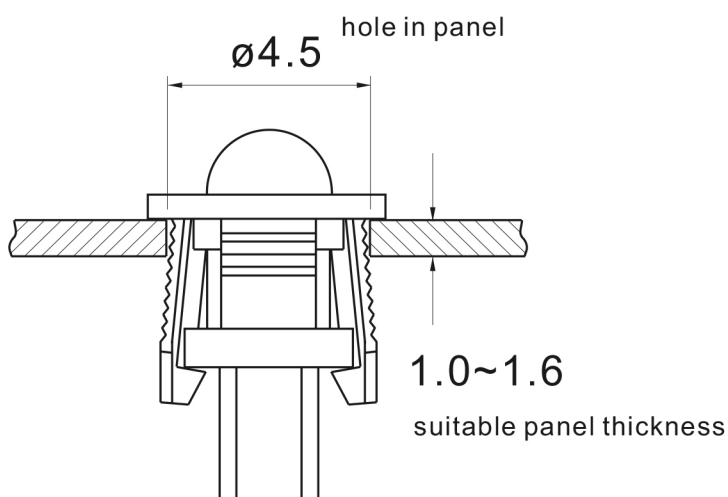
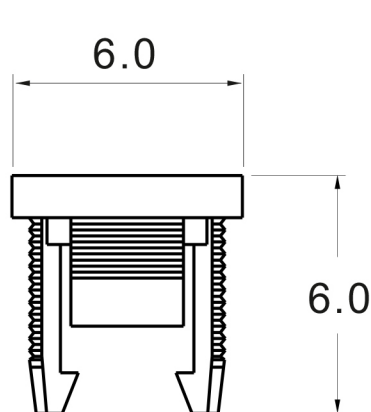
Resistance - 220Ω, 470Ω, 680Ω, 1KΩ
 Rated Power - 0.25W
 Maximum Working Voltage - 250V
 Maximum Overload Voltage - 500V
 Dielectric Withstanding Voltage - 350V

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

Power derating curve



LED Mounting Clips



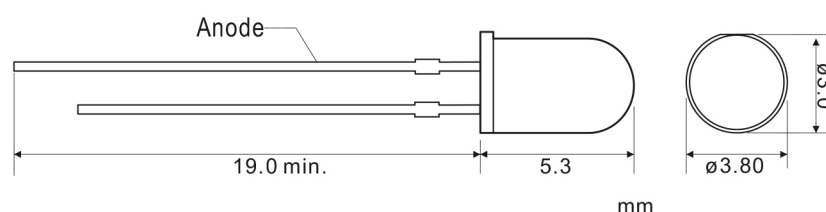
Material: PA66, 94V-2

Color: Black

Operating Temperature: -10~75°C

ø3mm 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	85	mW
Peak Operating current (Duty 1/10@1KHz)	I _{FP}	30	mA
Max. Continuous Operating current	I _F	20	mA
Max. Reverse Voltage	V _R	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:

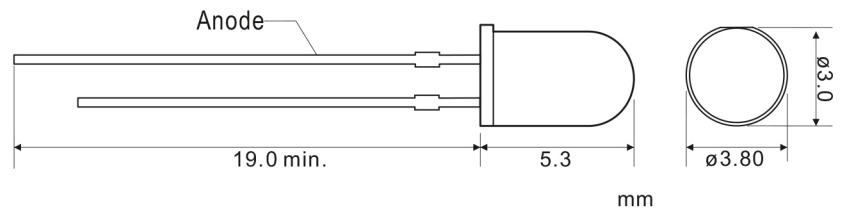
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	I _F =20mA	6000	—	8000	med
Color Temperature	λd	I _F =20mA	8000	—	9000	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	30	—	deg.
Forward Voltage	V _F	I _F =20mA	3.0	—	3.4	V
Reverse Current	I _R	V _R =5V	—	—	10	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V

ø3mm 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	85	mW
Peak Operating current (Duty 1/10@1KHz)	I _{FP}	30	mA
Max. Continuous Operating current	I _F	20	mA
Max. Reverse Voltage	V _R	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:

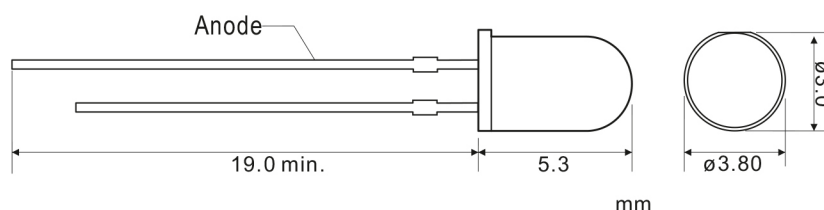
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	I _F =20mA	7000	—	9000	med
Color Temperature	λd	I _F =20mA	3000	—	3200	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	25	—	deg.
Forward Voltage	V _F	I _F =20mA	3.0	—	3.4	V
Reverse Current	I _R	V _R =5V	—	—	10	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V

ø3mm 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	85	mW
Peak Operating current (Duty 1/10@1KHz)	I _{FP}	30	mA
Max. Continuous Operating current	I _F	20	mA
Max. Reverse Voltage	V _R	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:

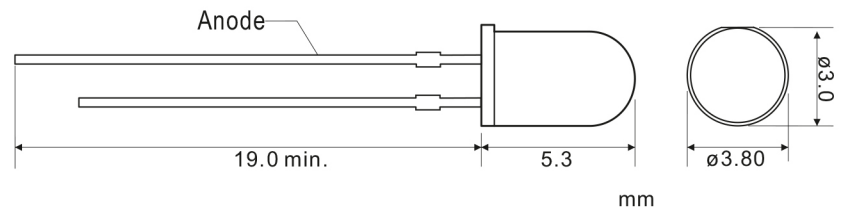
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	I _F =20mA	400	—	600	med
Color Temperature	λd	I _F =20mA	587	—	590	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	30	—	deg.
Forward Voltage	V _F	I _F =20mA	2.0	—	2.2	V
Reverse Current	I _R	V _R =5V	—	—	20	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V

ø3mm 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	85	mW
Peak Operating current (Duty 1/10@1KHz)	I _{FP}	30	mA
Max. Continuous Operating current	I _F	20	mA
Max. Reverse Voltage	V _R	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:

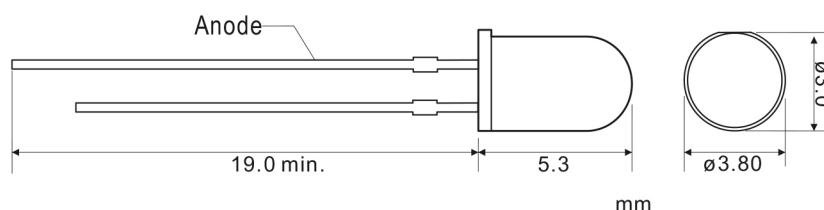
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	I _F =20mA	800	—	1500	med
Color Temperature	λd	I _F =20mA	460	—	465	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	30	—	deg.
Forward Voltage	V _F	I _F =20mA	3.0	3.2	3.4	V
Reverse Current	I _R	V _R =5V	—	—	20	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V

ø3mm 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 _{FP}	75	mA
Max. Continuous Operating current	I _F	30	mA
Max. Reverse Voltage	V _R	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:

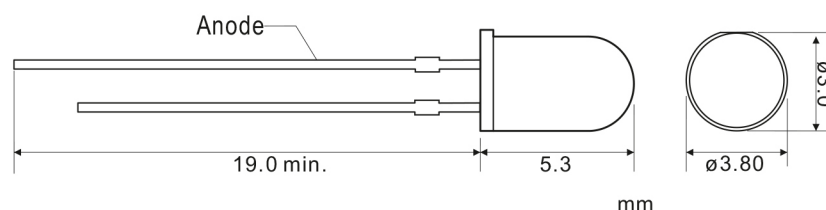
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I _v	I _F =20mA	400	—	600	med
Color Temperature	λd	I _F =20mA	625	630	635	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	30	—	deg.
Forward Voltage	V _F	I _F =20mA	1.9	—	2.2	V
Reverse Current	I _R	V _R =5V	—	—	30	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V

ø3mm 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	85	mW
Peak Operating current (Duty 1/10@1KHz)	I _{FP}	30	mA
Max. Continuous Operating current	I _F	20	mA
Max. Reverse Voltage	V _R	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 _v	I _F =20mA	80	—	100	med
Color Temperature	λd	I _F =20mA	568	570	572	nm
Beam angle	2 ^θ 1/2	I _F =20mA	—	30	—	deg.
Forward Voltage	V _F	I _F =20mA	2.0	—	2.4	V
Reverse Current	I _R	V _R =5V	—	—	20	uA

*Tolerance of Luminous Intensity ±10%

*Tolerance of Forward Voltage ±0.1V