

# Surface Mount Red / Green LED

## 3.5mm × 2.8mm

**multicomp** PRO

**RoHS  
Compliant**



### Features

- Dimensions: 3.5mm × 2.8mm × 1.9mm.
- Wide Viewing Angle.

### Applications

- Automotive: Backlighting in dashboard and switch.
- Telecommunication: Indicator and Backlighting in telephone and fax.
- Flat Backlight for LCD switch and symbol.

### Device Selection Guide

Part No.	Chip		Lens Colour
	Material	Emitted Colour	
MP005920	(InGaAlP)	Red	Water Clear
	(InGaN)	Green	

### Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Red	Green	Unit
Power Dissipation	P <sub>D</sub>	62		mW
Forward Current	I <sub>F</sub>	25		mA
Peak Forward Current*1	I <sub>FP</sub>	100		mA
Reverse Voltage	V <sub>R</sub>	5		V
Operating Temperature	T <sub>opr</sub>	-40°C To +85°C		
Storage Temperature	T <sub>stg</sub>	-40°C To +85°C		

Notes:

\*1: Pulse width ≤ 0.1ms, Duty cycle ≤ 1/10

### Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Device	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V <sub>F</sub>	Red Green	1.8 2.8	2.2 2.2	2.6 3.6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>		—	—	10	μA	V <sub>R</sub> =5V
Dominant Wavelength	λ <sub>D</sub>		617 518	—	629 530	nm	I <sub>F</sub> =20mA
Luminous Intensity	I <sub>v</sub>		225 1100	—	500 2300	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>		—	120	—	Deg.	I <sub>F</sub> =20mA

Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or chromaticity), the typical accuracy of the sorting process is as follows:

1. wavelength: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

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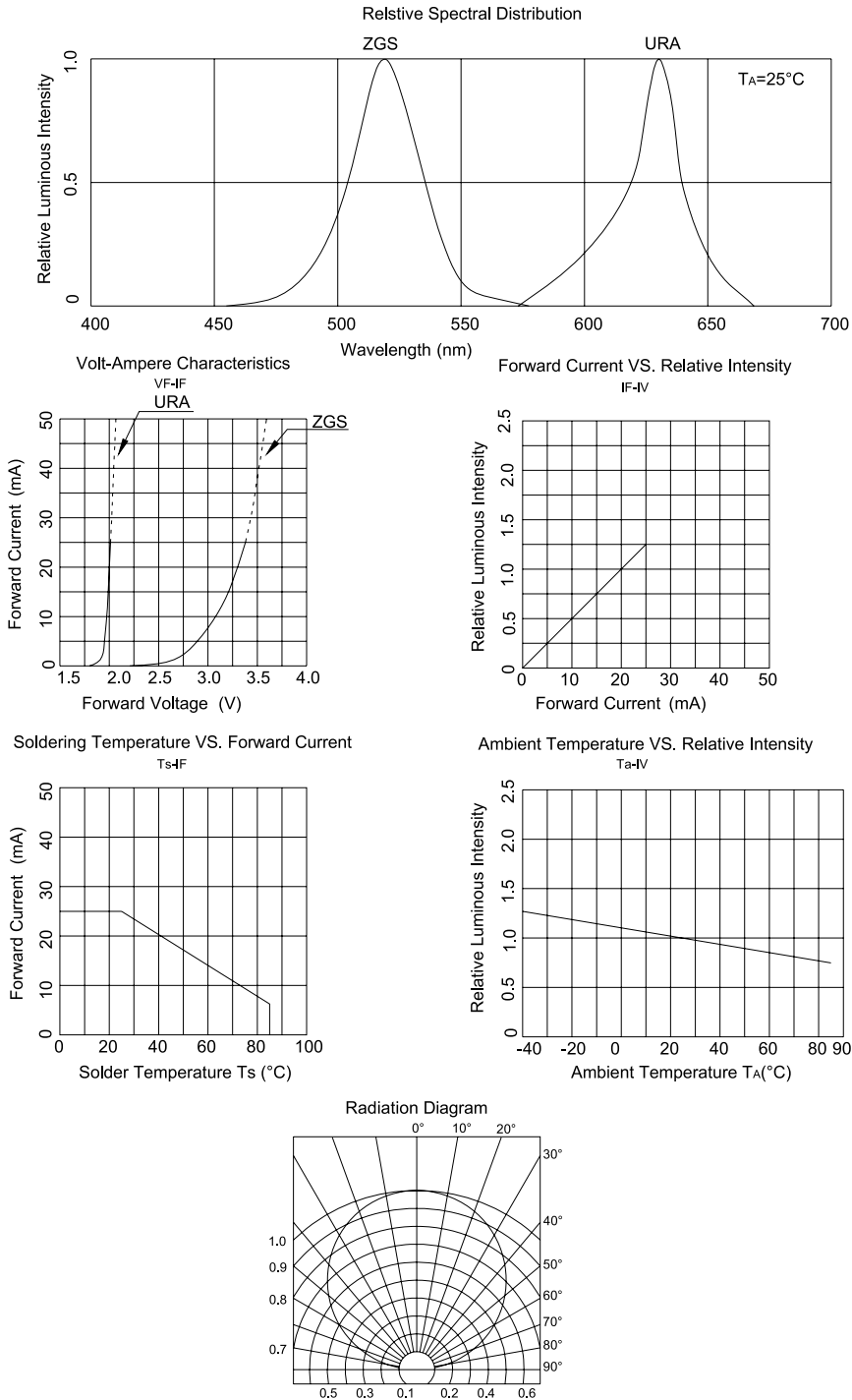
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### Typical Electrical/Optical Characteristics Curves

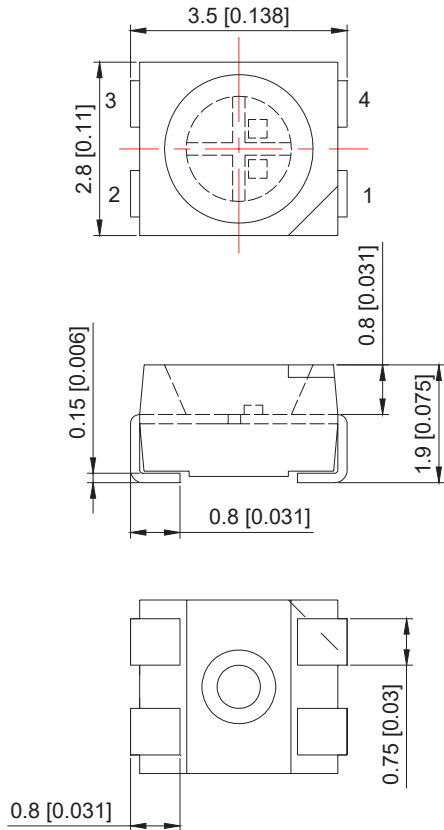


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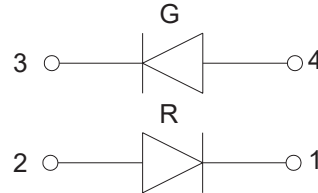
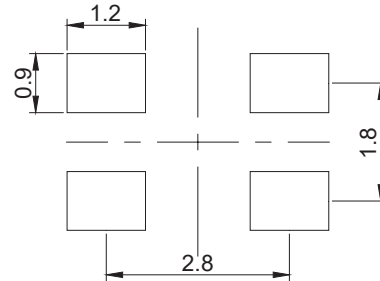
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### Diagram



### Recommended soldering pattern



### Notes:

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.15$  unless otherwise noted.
3. Specifications are subject to change without notice.

### VF Rank

#### Red

Rank	VF(V)		Conditions
	Min	Max	
B	1.8	2	F=20mA
C	2	2.2	
D	2.2	2.4	
E	2.4	2.6	

Tolerance:  $\pm 0.1V$

#### Green

Rank	VF(V)		Conditions
	Min	Max	
G	2.8	3	IF=20mA
H	3	3.2	
J	3.2	3.4	
K	3.4	3.6	

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### λD Rank

#### Red

Rank	λD(nm)		Conditions
	Min	Max	
5	617	621	IF=20mA
6	621	625	
7	625	629	

Tolerance:±1nm

#### Green

Rank	λD(nm)		Conditions
	Min	Max	
7	518	521	IF=20mA
8	521	524	
9	524	527	
1A	527	530	

### IV Rank

#### Red

Rank	IV(mcd)		Conditions
	Min	Max	
R	225	295	IF=20mA
S	295	385	
T	385	500	

Tolerance:±15%

#### Green

Rank	IV(mcd)		Conditions
	Min	Max	
X	1100	1400	IF=20mA
Y	1400	1800	
Z	1800	2300	

### Reliability Test Items and Conditions

Test Item	Reference	Test Conditions	Time	Quantity	Criterion
Thermal Shock	JIS-C7021 A-4	100°C±5°C 15min ↓↑ -40°C±5°C 15min	200cycles 200	22	0/22
High Temperature Storage	JEITA ED- 4701 200 201	Ta=100°C	1000h 1000		
Low Temperature Storage	JEITA ED- 4701 200 202	Ta=-40°C			
High Temperature High Humidity Storage	JIS-C7021 B-11	Ta=85, RH=85%			
Resistance to Soldering Heat	GB/T 4937	Tsol*=(260±5)°C 10secs.			
Life Test	JESD22-A108	Ta=25°C±5°C IF=20mA			
High Temperature Life Test		Ts=55°C±5°C IF=20mA			

Note:Tsol-Temperature of tin liquid.

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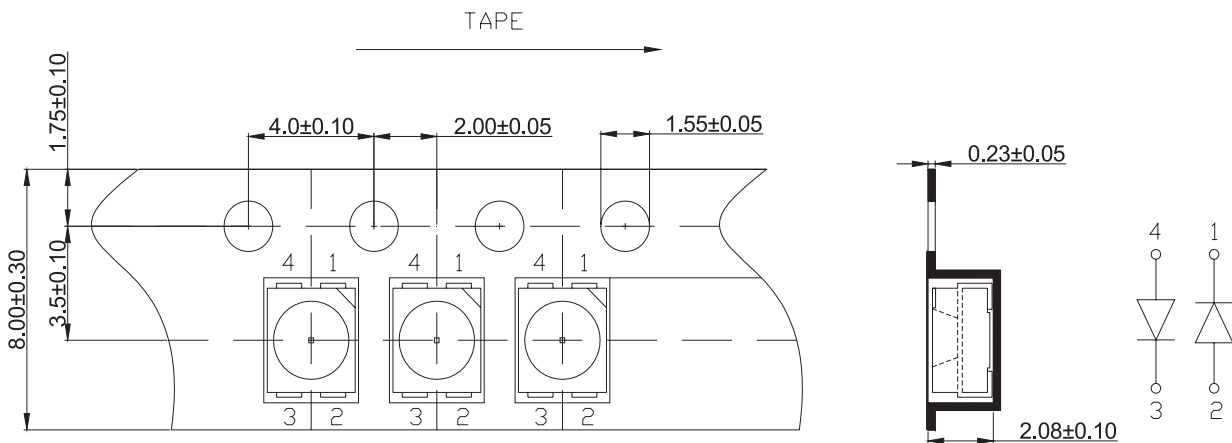
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Item	Symbol	Test Conditions	Failure Criteria	
			MIN.	MAX.
Forward Voltage	VF(V)	IF=20mA	-	U.S.L*1.1
Reverse Current	IR(uA)	VR=5V	-	10uA
Luminous Flux	IV(LM)	IF=20mA	L.S.L*0.7	-

Note: 1.USL:Upper Specification Level  
 2.LSL:Lower Specification Level

### Tape Specifications



### Part Number Table

Description	Part Number
SMD LED, 3528, Red / Green, 500/2300mcd, 120°	MP005920

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