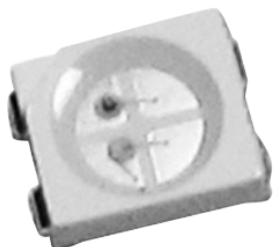


Surface Mount Red / Green LED

3.5mm × 2.8mm

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**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.

Optical Properties

Chip		Lens Colour
Material	Emitted Colour	Water Clear
(InGaAlP)	Red	
(InGaAlP)	Green	

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Red	Green	Unit
Power Dissipation	P _d	62		mW
Forward Current	I _F	25		mA
Peak Forward Current*1	I _{FP}	100		mA
Reverse Voltage	V _R	5		V
Operating Temperature	T _{opr}	-40°C To +85°C		
Storage Temperature	T _{stg}	-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 _F	Red Green	1.8 1.8	—	2.6 2.6	V	I _F =20mA
Reverse Current	I _R		—	—	10	μA	V _R =5V
Dominant Wavelength	λ _D		617 568	—	629 576	nm	I _F =20mA
Luminous Intensity	I _v		225 100	—	500 225	mcd	
Viewing Angle	2θ _{1/2}		—	120	—	Deg.	

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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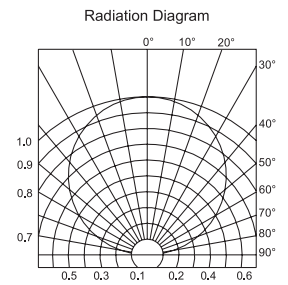
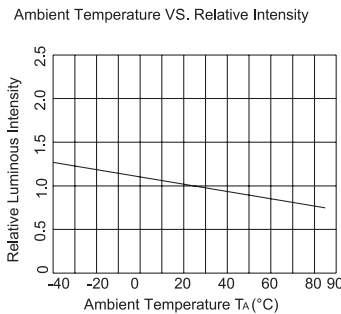
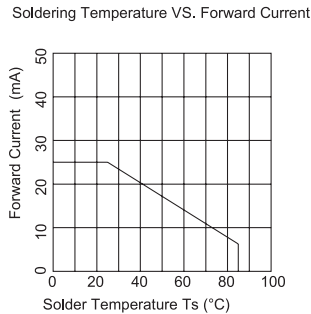
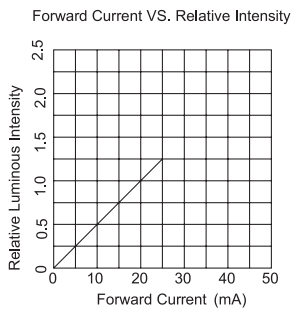
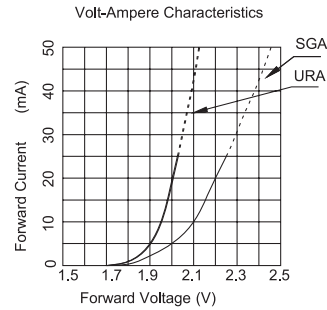
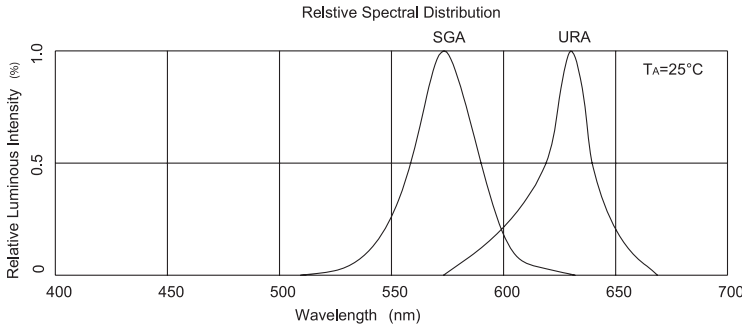
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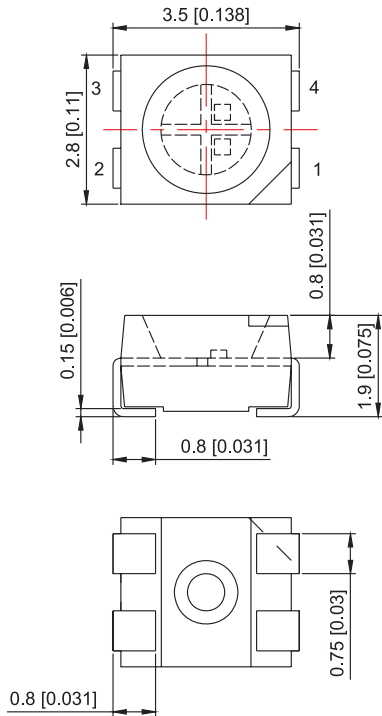
3.5mm × 2.8mm

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Typical Electrical/Optical Characteristics Curves

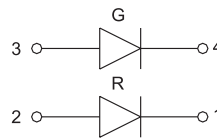
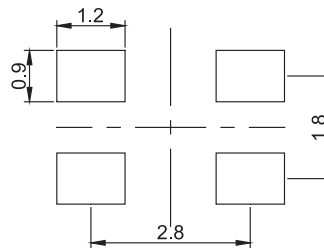


Package Dimensions



Dimensions : Millimetres (Inches)

Recommended soldering pattern



Notes:

1. All dimensions are in millimetres.
2. Tolerance is ± 0.15 unless otherwise noted.
3. Specifications are subject to change without notice.

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Surface Mount Red / Green LED

3.5mm × 2.8mm

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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:±0.1V

Green

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	

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	
9B	568	570	IF=20mA
1C	570	572	
2C	572	574	
3C	574	576	

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	
S	100	130	IF=20mA
T	130	170	
U	170	225	

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	200 cycles	22	0/22
High Temperature Storage	JEITA ED- 4701 200 201	Ta=100°C	1000 hrs.		
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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Surface Mount Red / Green LED

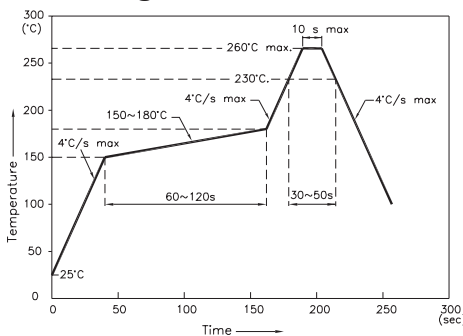
3.5mm × 2.8mm

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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	-

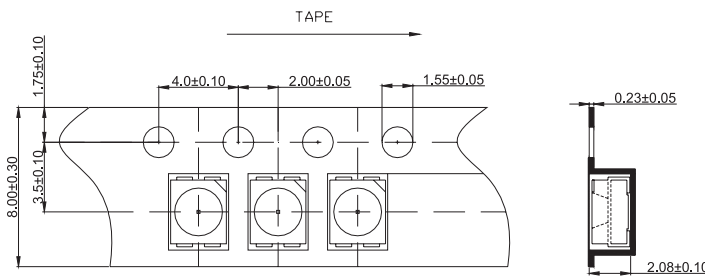
Note: 1.USL:Upper Specification Level
2.LSL:Lower Specification Level

Soldering Profile



Recommend the reflow temperature 245°C (±5°C) The maximum soldering temperature should be limited to 260°C.
Reflow soldering should not be done more than two times.
Stress on the LEDs should be avoided during heating in soldering process.
After soldering, do not deal with the product before its temperature drop down to room temperature.

Tape Specifications



Part Number Table

Description	Part Number
SMD LED, 3528, Red / Green, 500/225mcd, 120°	MP005919

Dimensions : Millimetres

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