

# MCL1204RRD1GR1T DATASHEET

Chip Type LED, 1204, Right Angle Lens, Red, Green

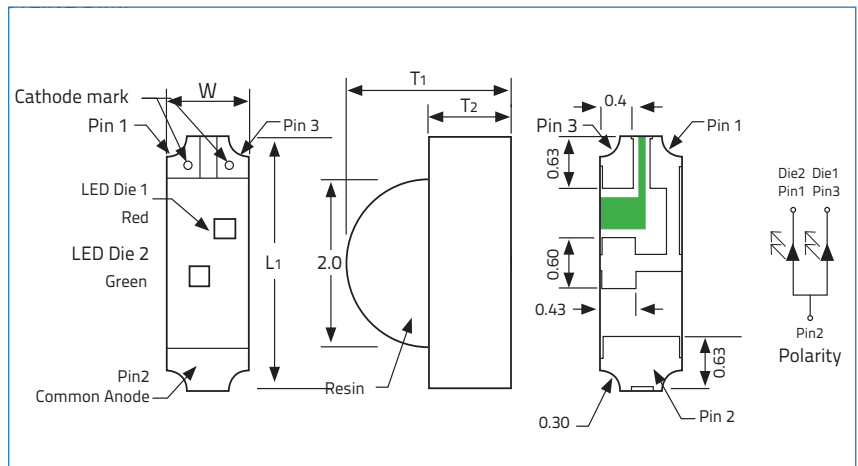


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Part Number	Size	Emitting Color	Emitting Material	Lens-Color	Viewing Angle (2θ 1/2)
MCL1204RRD1GR1T	1204	Red/Green	AllnGaP	Water Clear	120°

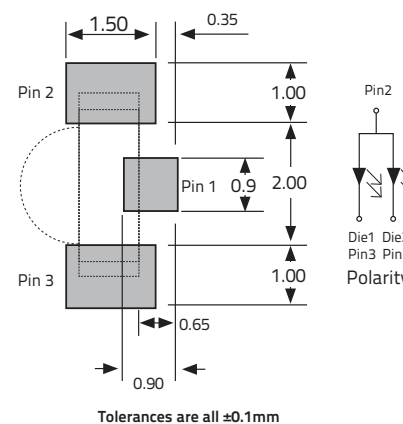
Electrical & Optical Specifactions (T <sub>A</sub> =25°C)		Red	Green	Unit
Luminous Intensity (Min.)	I <sub>v</sub>	28.5	28.5	mcd
Luminous Intensity (Typ.)	I <sub>v</sub>	45.0	45.0	mcd
Forward Voltage (Min.) (I <sub>F</sub> =5mA)	V <sub>F</sub>	1.6	1.6	V
Forward Voltage (Max.) (I <sub>F</sub> =5mA)	V <sub>F</sub>	2.4	2.4	V
Reverse Current (Max) (V <sub>R</sub> =5V)	I <sub>R</sub>	<100	<100	uA
Peak Wavelength (Typ.) (I <sub>F</sub> =5mA)	λ <sub>P</sub>	639	573	nm
Dominant Wavelength (Typ.) (I <sub>F</sub> =5mA)	λ <sub>D</sub>	631	571	nm
Spectral Line Half Width (Typ.) (I <sub>F</sub> =5mA)	Δλ	20	15	nm

Absolute Maximum Ratings (T <sub>A</sub> =25°C)		Red	Green	Unit
Reverse Voltage	V <sub>R</sub>	5		V
DC Forward Current	I <sub>F</sub>	20		mA
Peak Forward Current 1/10 Duty Cycle @ 10KHz	1 <sub>FP</sub>	40	40	mA
Power Dissipation	P <sub>D</sub>	48	48	mW
Operating Temperature	T <sub>A</sub>	-40 ~ +85		°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100		



Dimensions		Units: Inches (mm)	
L <sub>1</sub>	W	T <sub>1</sub>	T <sub>2</sub>
0.1189±0.004 (3.0±0.1)	0.0394±0.004 (1.0±0.1)	0.0787±0.004 (2.0±0.1)	0.0394±0.004 (1.0±0.1)

### Soldering Pad Layout



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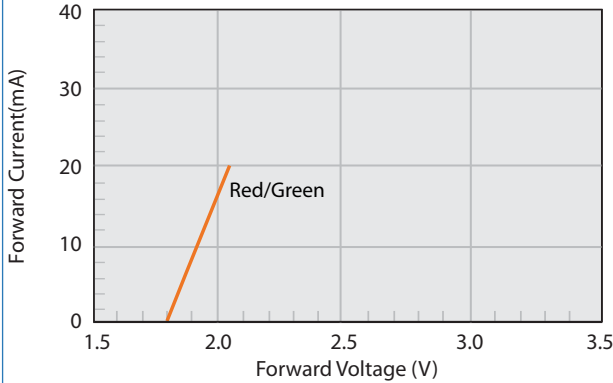
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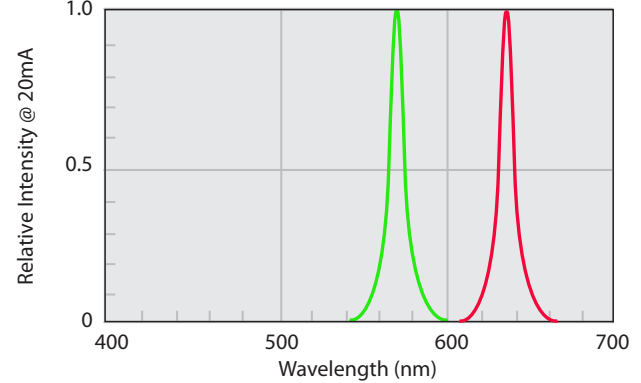
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## Graphs

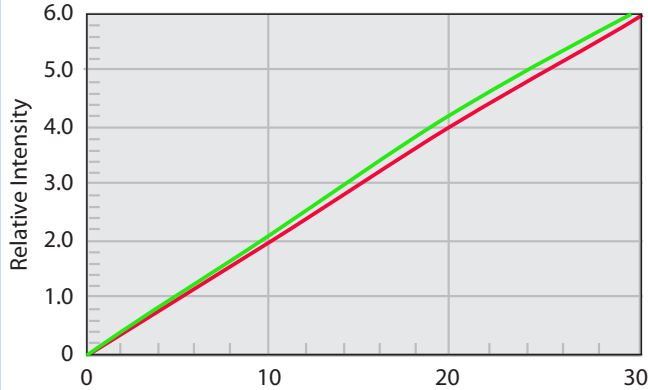
**Fig.1 Forward Current vs Forward Voltage**



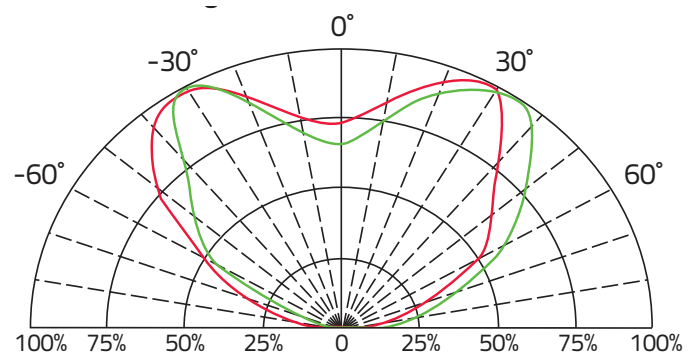
**Fig.4 Relative Intensity vs Wavelength**



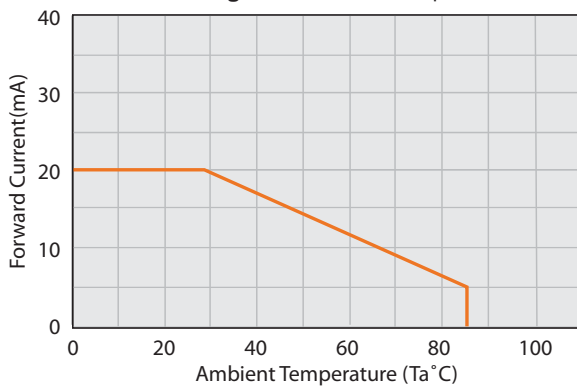
**Fig.2 Relative Intensity vs Forward Current**



**Fig. 5 Direct Radiation**



**Fig.3 Current vs Temp**



### Environmental information

RoHS Status	6 of 6 Compliant
REACH Status	Compliant
Halogen Status	Halogen Free
Conflict Mineral Status	Conflict Mineral Free
Moisture Sensitivity Level (MSL)	3

### Reflow profile

Max Reflow Temperature	260°C
Number of Reflow Cycles	2

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## Label Example

Item: MCL1204RRD1GR1T  
Chip Type LED,1204,Right Angle Lens,Red,Green  
Qty: 3000 D/C: 1616

Lot: E1A1A22L12 VF: 1.6-2.4  
BIN/HUE: N/BH-N/D VF: 1.6-2.4

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### Codes:

VF: Forward Voltage | BIN: Luminous Intensity | HUE: Dominant Wavelength

## Luminous Intensity Classification (BIN Code)

Red BIN Code	Iv(mcd) at 20mA	
	Min.	Max.
N	28.5	45
P	45	71.5
Q	71.5	112.5
R	112.5	180

Green BIN Code	Iv(mcd) at 20mA	
	Min.	Max.
N	28.5	45
P	45	71.5
Q	71.5	112.5
R	112.5	180

## Dominant Wavelength Classification (HUE Code)

Red HUE Code	$\lambda D$ (nm) at 20mA	
	Min.	Max.
BH	620	650

Green HUE Code	$\lambda D$ (nm) at 20mA	
	Min.	Max.
C	567.5	570.5
D	570.5	573.5
E	573.5	576.5
F	576.5	579.5

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Reel Specifications		Units: mm		
<b>M</b>	<b>C</b>	<b>F</b>	<b>E</b>	<b>G</b>
178±1.50	56.0±1.0	12.0±1.0	60.0±1.0	9.0±1.0

Packaging Specifications	
Reel Size:	7"
Quantity per Reel :	3,000

Storage Specifications
1. Storage temperature and RH: 5°C~35°C, RH60%
2. Once the package is opened, the LEDs should be used within a week. Otherwise, they should be kept in a moisture proof bag with desiccant. We suggest that you use this product within one year from date code.
3. If opened for more than one week in an atmosphere of 5°C~35°C, RH60%. The parts should be heat treated at 60°C±5°C for 15 hours.

Tape Specifications		Units: mm		
<b>T</b>	<b>W</b>	<b>A</b>	<b>B</b>	<b>F</b>
1.2±0.10	8.0±0.3	3.2±0.10	2.2±0.10	3.5±0.05
<b>E</b>	<b>H</b>	<b>J</b>	<b>D</b>	<b>G</b>
1.75±0.1	4.0±0.1	2.0±0.05	1.5±0.1	4.0±0.1

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Environmental Test Criteria			
Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life	1. 25°C 2. 1000hrs	40
	High Temperature Storage	1. 85°C±5°C 2. 1000hrs	40
	Temperature, Humidity Bias	1. 40°C 2. 93% 3. 1000hrs	40
Environmental Test	Solderability	1. 245°C / 3±1 sec 2. 260°C / 10±1 sec	40