

MCL0404FRGB1U DATASHEET

Multi Color LED, 0404, Flat Lens, RGB

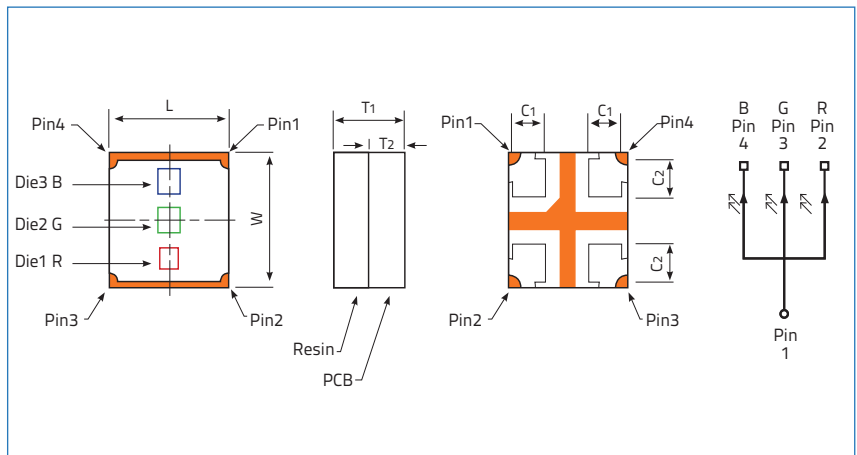


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Part Number	Size	Emitting Color	Emitting Material	Lens-Color	Luminous Intensity mcd	Wavelength nm λ_P	Viewing Angle (2θ 1/2)
MCL0404FRGB1U	0404	Red, Green, Blue (RGB)	AlGaInP, GaN	Clear	Red: 87 mcd typ Green: 180 mcd typ Blue: 40 mcd typ	Red: 629 nm typ Green: 522 nm typ Blue: 465 nm typ	140°

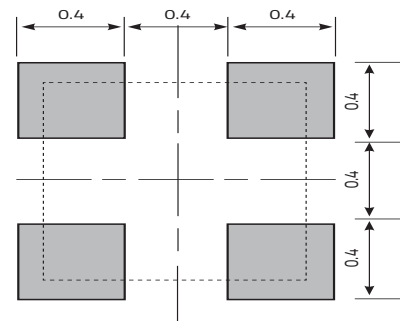
Electrical & Optical Specifications ($T_A=25^\circ\text{C}$)		Red @10mA	Green @5mA	Blue @5mA	Unit
Forward Voltage Typ.	V_F	2.0	2.7	2.8	V
Forward Voltage Max.	V_F	2.4	3.1	3.3	V
Reverse Current (Max) ($V_R=5V$)	I_R	≤ 1	≤ 1	≤ 1	μA
Peak Wavelength Typ.	λ_P	629	522	465	nm
Dominant Wavelength Typ.	λ_D	621	530	470	nm
Spectral Line Half Width Typ.	$\Delta\lambda$	16	32	22	nm

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)		Red	Green/Blue	Unit
Reverse Voltage	V_R	5	5	V
DC Forward Current	I_F	10	5	mA
Peak Forward Current 1/10 Duty Cycle @ 10KHz	I_{FP}	30	15	mA
Power Dissipation	P_D	100		mW
Operating Temperature	T_A	-40 ~ +85		°C
Storage Temperature	T_{stg}	-40 ~ +100		



Dimensions		Units: Inches (mm)	
L	W	T_1	T_2
0.0394±0.004 (1.0±0.1)	0.0394±0.004 (1.0±0.1)	0.0256 (0.65)	0.0118 (0.30)
C_1	C_2		
0.0114 (0.29)	0.0114 (0.29)		

Soldering Pad Layout



Tolerances are all ±0.1mm

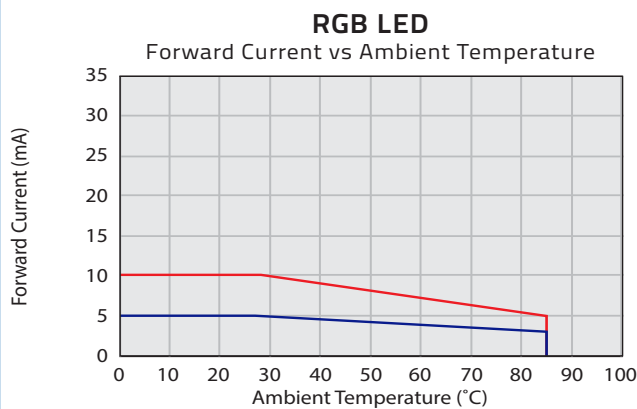
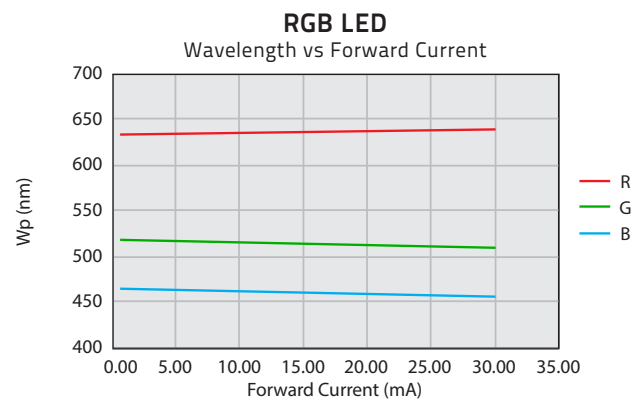
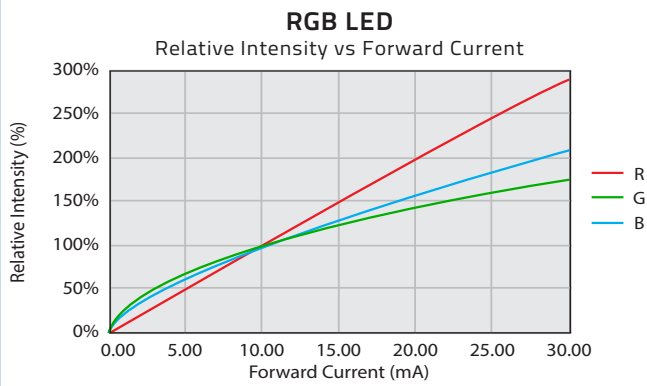
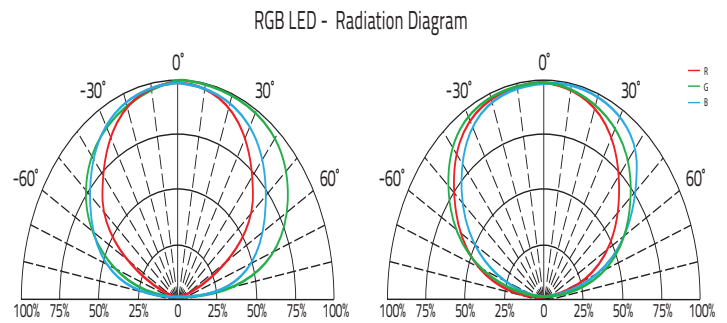
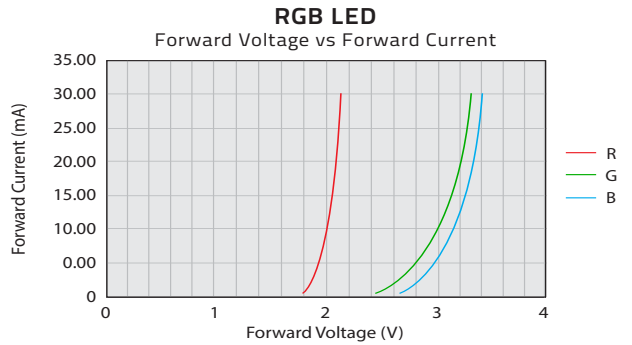
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Graphs



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
Time at Max Reflow Temperature	10 seconds

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Label Example

Item: MCL0404FRGB1U

Chip Type LED,0404,Flat Lens,Red,Green,Blue

Qty: 24000 D/C: 1616

Lot: 17NE41LN11 VF: 2.0-2.4

VF: 2.7-3.1

BIN/HUE: P9/1-R7/2-N5/6 VF: 2.8-3.3

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YOUR SINGLE SOURCE FOR SURFACE MOUNT PASSIVES

Codes:

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

Luminous Intensity Classification (BIN Code)

RED BIN Code	lv(mcd) at 10mA	
	Min.	Max.
P9	63	100
Q	71	112
Q5	80	125
Q7	90	140

Green BIN Code	lv(mcd) at 5mA	
	Min.	Max.
R7	140	224
R9	159	250
S	180	280
S5	201	315

Blue BIN Code	lv(mcd) at 5mA	
	Min.	Max.
N5	32	50
N7	36	56
N9	40	63
P	45	71

Dominant Wavelength Classification (HUE Code)

λD (nm)								
Red			Green			Blue		
Hue Code	Min.	Max.	Hue Code	Min.	Max.	Hue Code	Min.	Max.
1	615	627	2	523	529	6	466	471
			3	525	531	7	468	473
			4	528	534	8	470	475
			5	530	536			
			6	533	539			

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Reel Specifications Units: mm

M	C	F	E	G
330±1.0	55.0±1.0	13.5±0.1	99.5±1.0	9.5±0.1

Packaging Specifications

Reel Size:	13"
Quantity per Reel :	24,000

Storage Specifications

- Storage temperature and RH: 5°C~35°C, RH60%
- 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.
- 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

T	W	A	B	F
0.78±0.05	8.0±0.20	1.22±0.05	1.22±0.05	3.5±0.05
E	H	J	D	G
1.75±0.10	4.0±0.10	2.0±0.05	1.5±0.1	2.0±0.05

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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