

MCL0606FRGB1T DATASHEET

Multi Color LED, 0606, Flat Lens, RGB

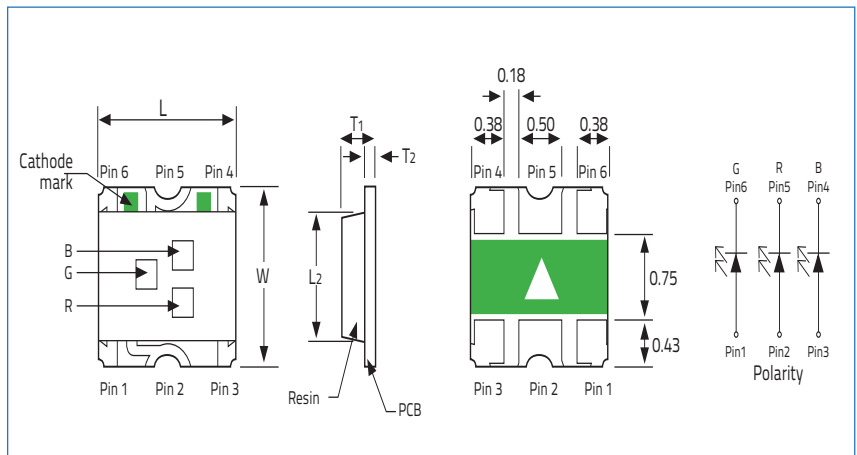


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Part Number	Size	Emitting Color	Emitting Material	Lens-Color	Luminous Intensity mcd	Wavelength nm λ_P	Viewing Angle (2θ 1/2)
MCL0606FRGB1T	0606	Red, Green, Blue (RGB)	AlGaInP, InGaN	Clear	Red: 112.5 mcd typ Green: 180 mcd typ Blue: 71.50 mcd typ	Red: 632 nm typ Green: 520 nm typ Blue: 468 nm typ	140°

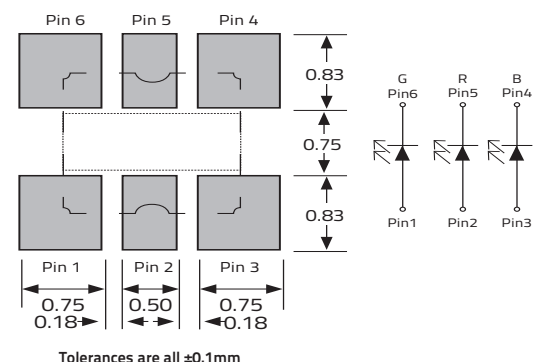
Electrical & Optical Specifications ($T_A=25^\circ\text{C}$)		Red @20mA	Green @20mA	Blue @20mA	Unit
Forward Voltage Typ.	V_F	2.0	3.3	3.3	V
Forward Voltage Max.	V_F	2.4	3.9	3.9	V
Reverse Current (Max) ($V_R=5V$)	I_R	≤ 100	≤ 100	≤ 100	μA
Peak Wavelength Typ.	λ_P	632	520	468	nm
Dominant Wavelength Typ.	λ_D	624	525	470	nm
Spectral Line Half Width Typ.	$\Delta\lambda$	20	30	40	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	20	20	mA
Peak Forward Current 1/10 Duty Cycle @ 10KHz	I_{FP}	40	60	mA
Power Dissipation	P_D	48	78	mW
Operating Temperature	T_A	-40 ~ +85		°C
Storage Temperature	T_{stg}	-40 ~ +100		



Dimensions				Units: Inches (mm)
L_1	L_2	T_1	T_2	
0.0629±0.004 (1.6±0.1)	0.0452±0.004 (1.15±0.1)	0.0157±0.004 (0.40±0.1)	0.0059±0.004 (0.15±0.1)	
W				
0.0629±0.004 (1.6±0.1)				

Soldering Pad Layout



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Graphs

Fig.1 Forward Voltage vs Forward Current

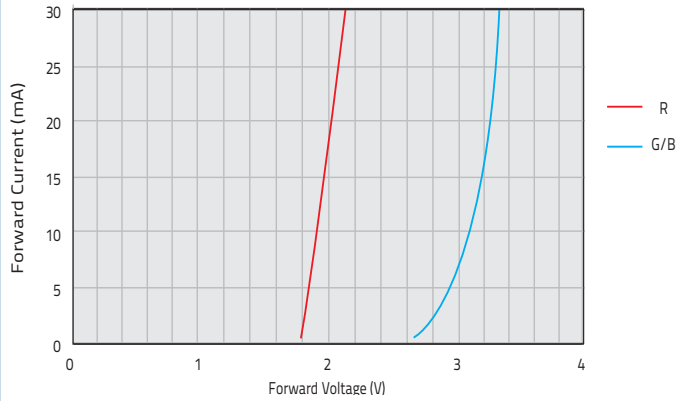


Fig.4 Relative Intensity vs Wavelength

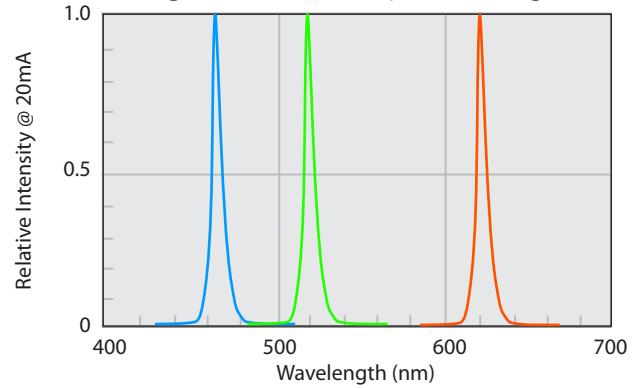


Fig.2 Relative Intensity vs Forward Current

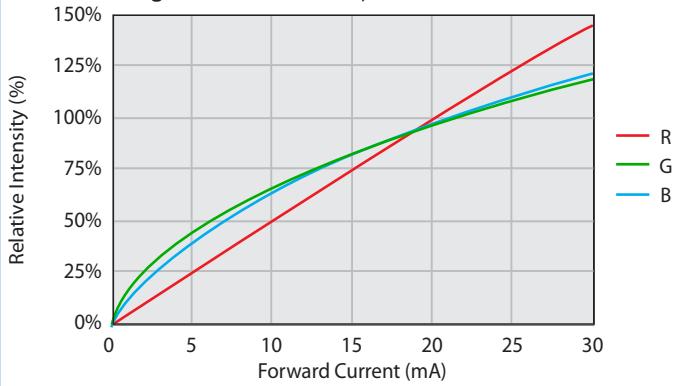


Fig.5 Radiation Diagram

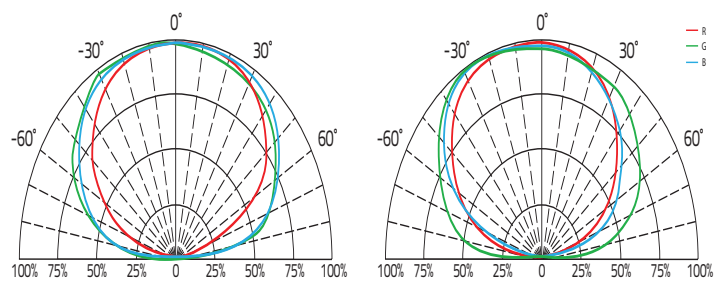
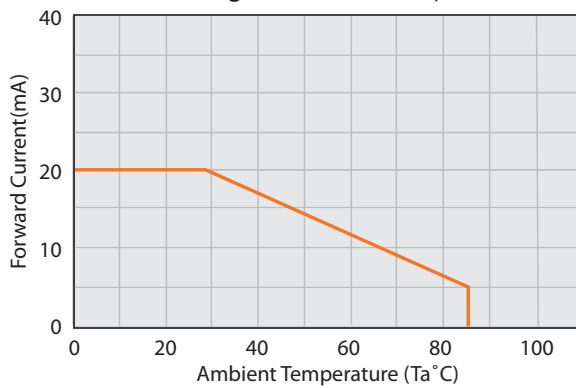


Fig.3 Current vs Temp



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
Time at Max Reflow Temperature	10 seconds

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Label Example

Item: MCL0606FRGB1T
 Chip Type LED,0606,Flat Lens,RGB
 Qty: 2000 D/C: 1616
 Lot: E1A1A22L12 VF: 1.6-2.4
 VF: 2.7-3.9
 BIN/HUE: R/AC-R/C-Q/AB VF: 2.7-3.9

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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.
Q	71.5	112.5
R	112.5	180
S	180	285

Green BIN Code	Iv(mcd) at 20mA	
	Min.	Max.
R	112.5	180
S	180	285
T	285	360

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

Dominant Wavelength Classification (HUE Code)

λ_D (nm)								
Red			Green			Blue		
Hue Code	Min.	Max.	Hue Code	Min.	Max.	Hue Code	Min.	Max.
AC	615	630	B	520	525	AA	460	465
			C	525	530	AB	465	470
			D	530	535	AC	470	475
			E	535	540	AD	475	480

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Reel Specifications Units: mm

M	C	F	E	G
178±1.50	13.0±0.2	12.0±1.5	60.0±1.0	9.0±1.0

Packaging Specifications

Reel Size:	7"
Quantity per Reel :	2,000

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

T	W	A	B	F
0.65±0.10	8.0±0.20	1.80±0.10	1.70±0.10	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	4.0±0.10

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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