

# CTL0402FGR1T DATASHEET

Chip Type LED, 0402, Flat Lens, Green (Yellow Green)

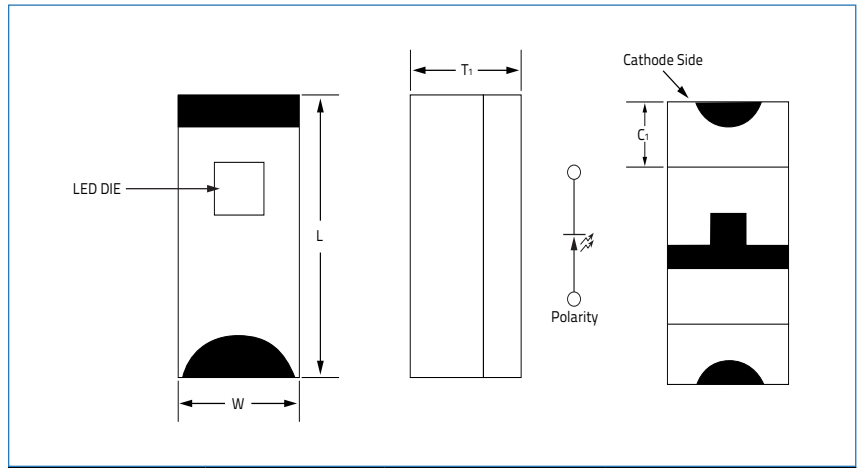


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Part Number	Size	Emitting Color	Emitting Material	Lens-Color	Luminous Intensity ( $I_F=20\text{mA}$ ) mcd	Wavelength nm $\lambda_P$	Viewing Angle ( $2\theta_{1/2}$ )
CTL0402FGR1T	0402	Green (Yellow Green)	AllInGaP	Water Clear	28.5 min 45 typ	573	130°

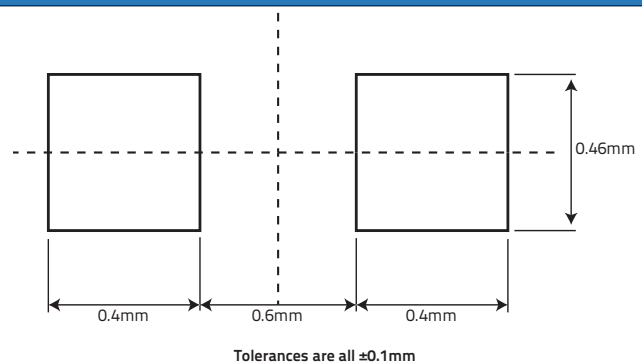
Electrical & Optical Specifications ( $T_A=25^\circ\text{C}$ )		GR1 (AlGaInP)	Unit
Forward Voltage (Min.) ( $I_F=20\text{mA}$ )	$V_F$	2.1	V
Forward Voltage (Max.) ( $I_F=20\text{mA}$ )	$V_F$	2.4	V
Reverse Current (Max) ( $V_R=5\text{V}$ )	$I_R$	10	$\mu\text{A}$
Peak Wavelength (Typ.) ( $I_F=20\text{mA}$ )	$\lambda_P$	573	nm
Dominant Wavelength (Typ.) ( $I_F=20\text{mA}$ )	$\lambda_D$	571	nm
Spectral Line Half Width (Typ.) ( $I_F=20\text{mA}$ )	$\Delta\lambda$	15	nm

Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ )		GR1 (AlGaInP)	Unit
Reverse Voltage	$V_R$	5	V
DC Forward Current	$I_F$	20	mA
Peak Forward Current 1/10 Duty Cycle @ 10KHz	$I_{FP}$	30	mA
Power Dissipation	$P_D$	48	mW
Operating Temperature	$T_A$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	



Dimensions			Units: Inches (mm)
$L_1$	$W$	$T_1$	$C_1$
0.039±0.004 (1.0±0.1)	0.0196±0.004 (0.5±0.1)	0.0196±0.004 (0.50±0.1)	0.0118±0.004 (0.30±0.1)

## Soldering Pad Layout



Tolerances are all  $\pm 0.1\text{mm}$

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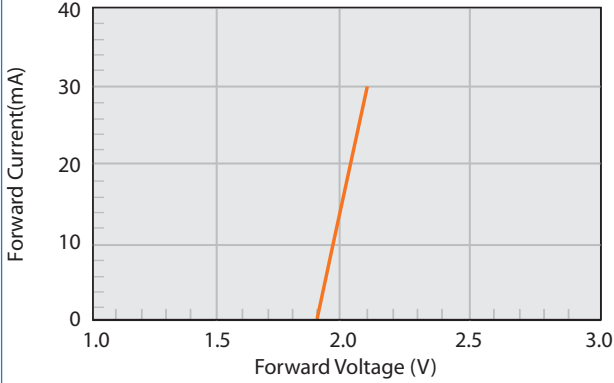
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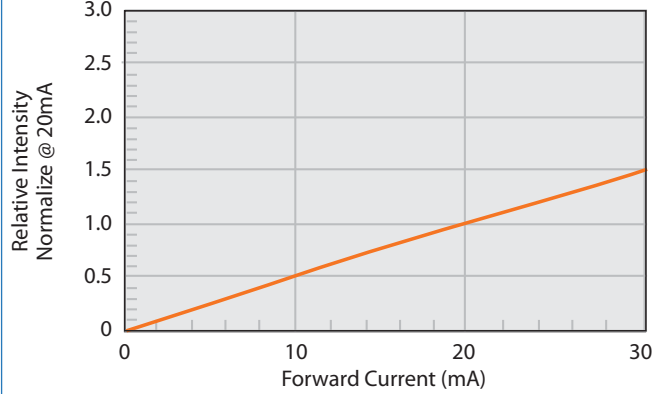
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## Graphs

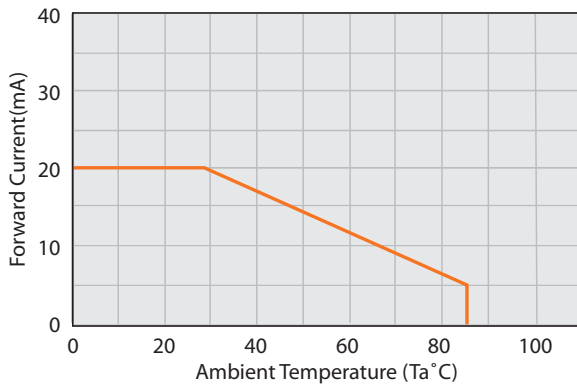
**Fig.1 Forward Current vs Forward Voltage**



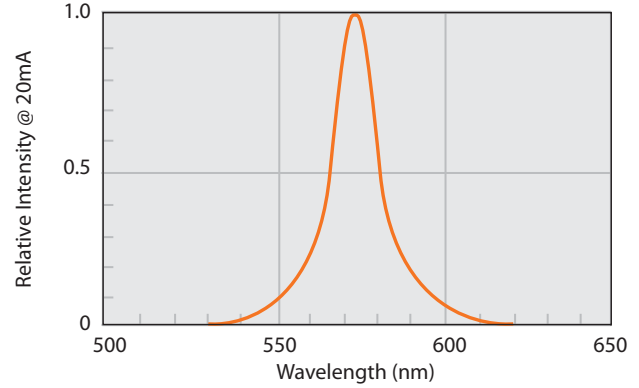
**Fig.2 Relative Intensity vs Forward Current**



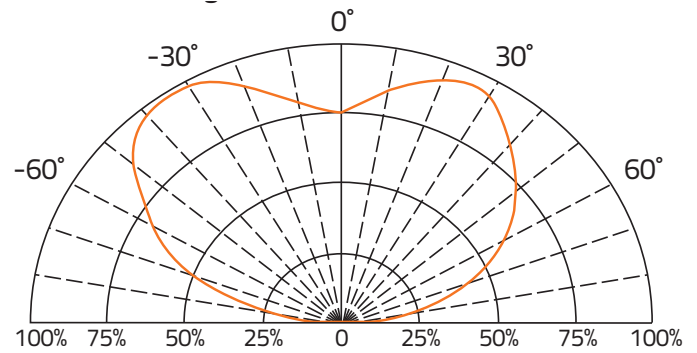
**Fig.3 Current vs Temp**



**Fig.4 Relative Intensity vs Wavelength**



**Fig. 5 Direct Radiation**



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: CTL0402FGR1T

Chip Type LED,0402,Flat Lens,Green (Yellow Green)

Qty: 4000 D/C: 1616

Lot: E1A1A22L12

BIN/HUE: K/D VF: 1.6-2.4

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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)

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

## Dominant Wavelength Classification (HUE Code)

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 :	4,000

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>
0.66±0.05	8.0±0.3	1.1±0.05	0.60±0.05	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

# CTLO402FGR1T DATASHEET

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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