

CTL0402FGR1T DATASHEET

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

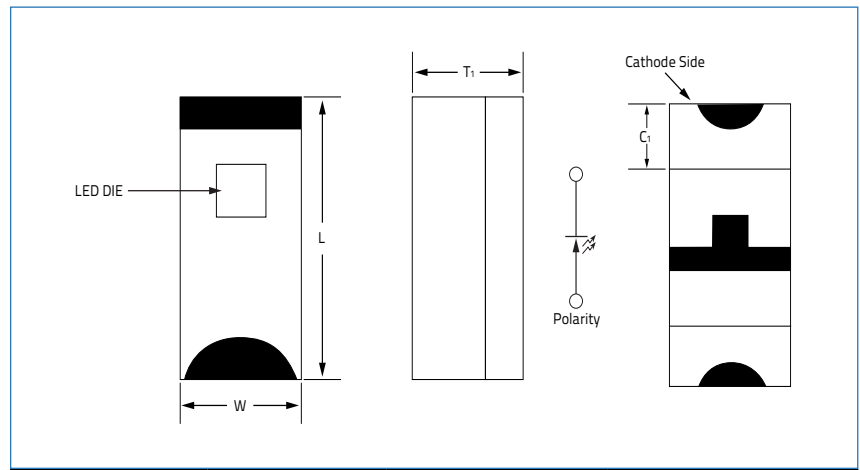


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| Part Number | Size | Emitting Color | Emitting Material | Lens-Color | Luminous Intensity ($I_F=20\text{mA}$) mcd | Wavelength nm λ_P | Viewing Angle ($2\theta_{1/2}$) |
|--------------|------|-------------------------|-------------------|-------------|---|---------------------------|------------------------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

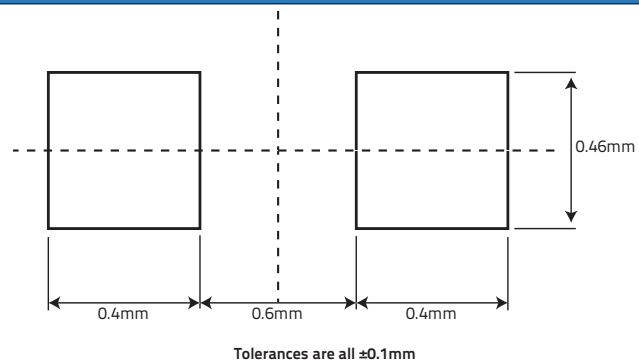
| Electrical & Optical Specifications ($T_A=25^\circ\text{C}$) | | GR1 (AlGaInP) | Unit |
|--|-----------------|------------------|---------------|
| Forward Voltage (Min.) ($I_F=20\text{mA}$) | V_F | 2.1 | V |
| Forward Voltage (Max.) ($I_F=20\text{mA}$) | V_F | 2.4 | V |
| Reverse Current (Max) ($V_R=5\text{V}$) | I_R | 10 | μA |
| Peak Wavelength (Typ.) ($I_F=20\text{mA}$) | λ_P | 573 | nm |
| Dominant Wavelength (Typ.) ($I_F=20\text{mA}$) | λ_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 | 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



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Graphs

Fig.1 Forward Current vs Forward Voltage

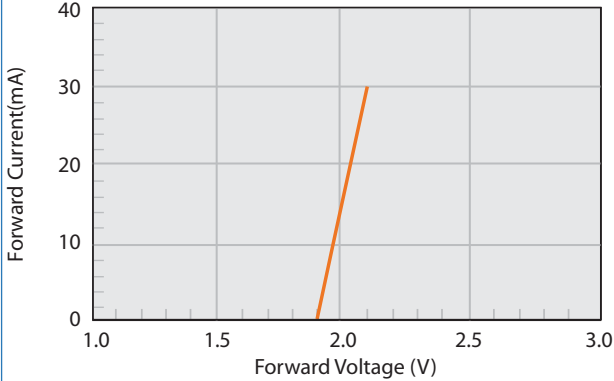


Fig.2 Relative Intensity vs Forward Current

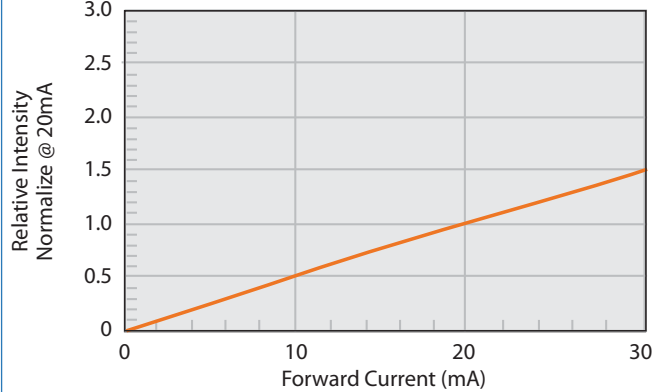


Fig.3 Current vs Temp

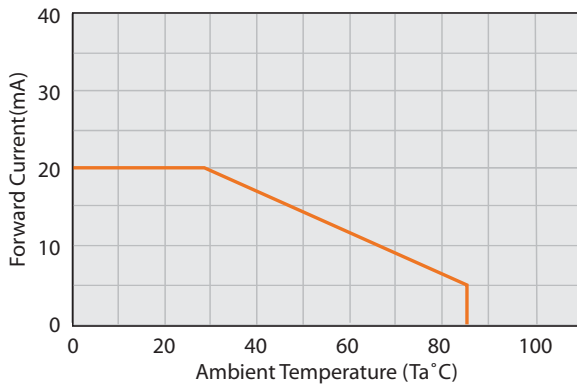


Fig.4 Relative Intensity vs Wavelength

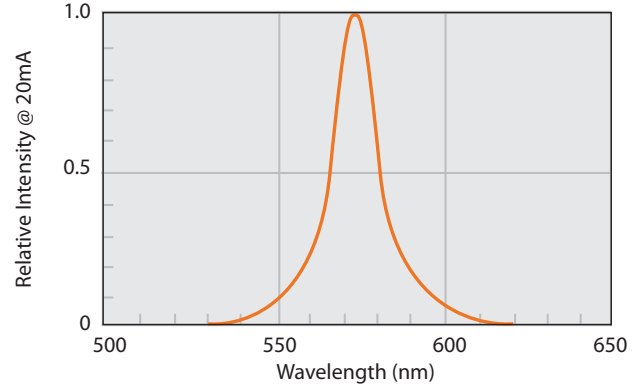
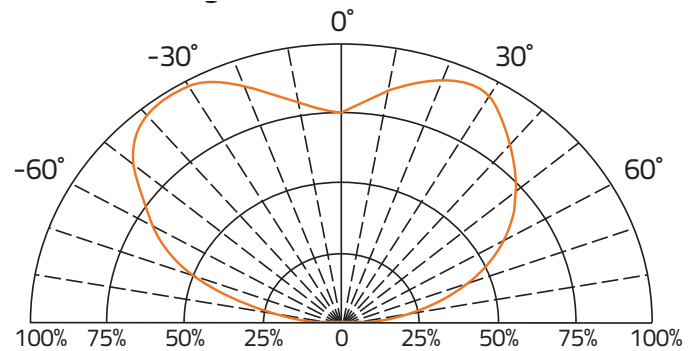


Fig. 5 Direct Radiation



| 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 | λ_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 | | |
|---------------------|----------|-----------|----------|----------|
| | | | | |
| M | C | F | E | G |
| 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 | | |
|---------------------|----------|-----------|-----------|----------|
| | | | | |
| T | W | A | B | F |
| 0.66±0.05 | 8.0±0.3 | 1.1±0.05 | 0.60±0.05 | 3.5±0.05 |
| E | H | J | D | G |
| 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 |