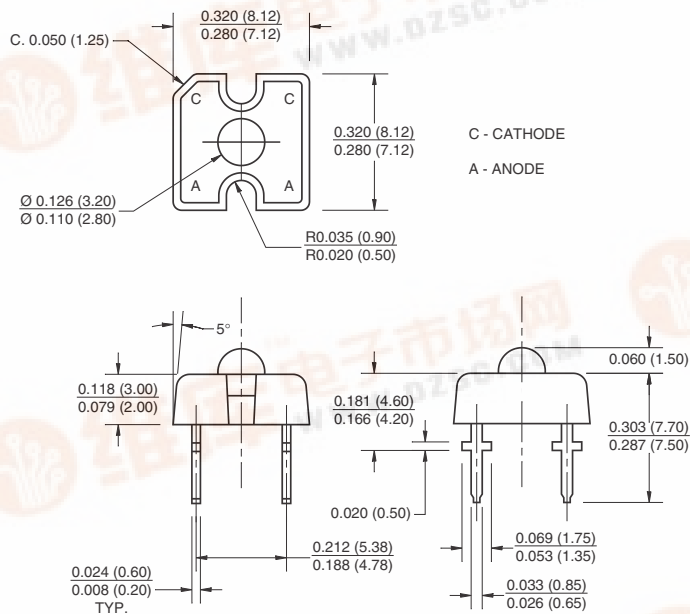


FAIRCHILD
SEMICONDUCTOR®

4 - PIN POWER LED

RED QTLP320C-R ORANGE QTLP320C-E YELLOW QTLP320C-Y

PACKAGE DIMENSIONS



NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Lead spacing is measured where the leads emerge from the package.
3. Protruded resin under the flange is 0.059" (1.5 mm) max.
4. All tolerances are ± 0.10 " (0.25 mm) unless otherwise specified.

DESCRIPTION

This low profile, 4-pin LED provides a more uniform and evenly distributed illumination than existing LED designs. Its unique optical package enables designers to utilize fewer LEDs while achieving superior lighting performance.

FEATURES

- AlInGaP (Aluminum Indium Gallium Phosphide) technology
- High current application
- Reduced thermal resistance
- Tube packaging

APPLICATIONS

- Exterior automotive lighting
- Area displays

- Backlighting
- Message panels



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| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified) | | | |
|--|------------------|---------------|------------------|
| Parameter | Symbol | Rating | Unit |
| Operating Temperature | T_{OPR} | -40 to +100 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 to +100 | $^\circ\text{C}$ |
| Lead Soldering Time | T_{SOL} | 260 for 5 sec | $^\circ\text{C}$ |
| Continuous Forward Current | I_F | 70 | mA |
| Peak Forward Current ($f = 100\text{ Hz}$, Duty Factor = 1/10) | I_F | 200 | mA |
| Reverse Voltage | V_R | 5 | V |
| Reverse Current | I_R | 10 | μA |
| Power Dissipation | P_D | 160 | mW |

| ELECTRICAL/OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$) | | | | |
|--|------------|------------|------------|----------------------|
| Part Number | QTLP320C-R | QTLP320C-E | QTLP320C-Y | Condition |
| Luminous Flux (lm) | | | | $I_F = 70\text{ mA}$ |
| Minimum | 500 | 500 | 500 | |
| Typical | 1300 | 1300 | 1300 | |
| Forward Voltage V_F (V) | | | | $I_F = 70\text{ mA}$ |
| Maximum | 2.9 | 2.9 | 2.9 | |
| Typical | 2.3 | 2.3 | 2.3 | |
| Wavelength (nm) | | | | $I_F = 70\text{ mA}$ |
| Peak | 630 | 620 | 590 | |
| Dominant | 625 | 615 | 589 | |
| Spectral Line Half Width (nm) | 20 | 18 | 15 | $I_F = 70\text{ mA}$ |
| Viewing Angle ($^\circ$) | 70 | 70 | 70 | $I_F = 70\text{ mA}$ |

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TYPICAL PERFORMANCE CURVES

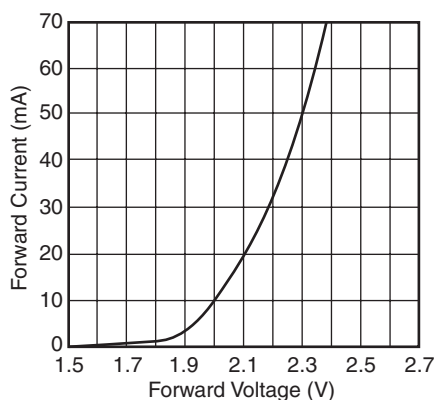


Fig 1. Forward Current vs. Forward Voltage

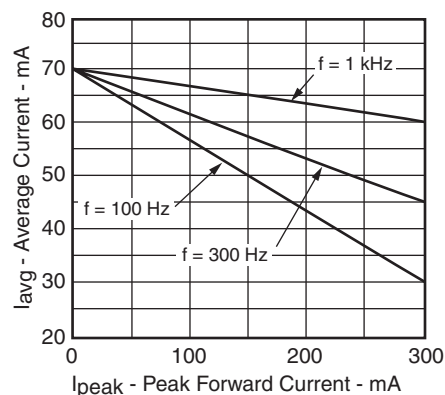


Fig 2. Maximum Average Current vs. Peak Forward Current

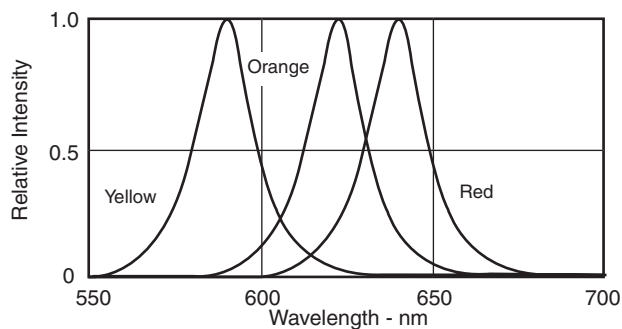


Fig 3. Relative Intensity vs Peak Wavelength

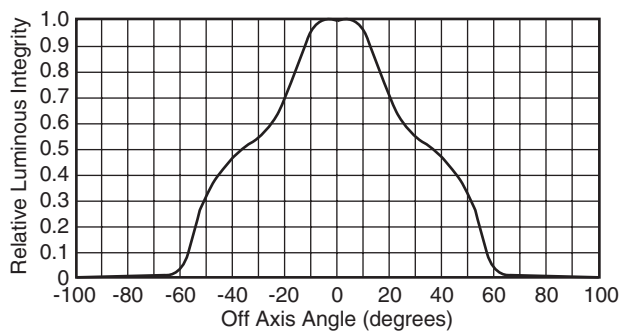


Fig 4. Relative Luminous Intensity vs. Off Axis Angle

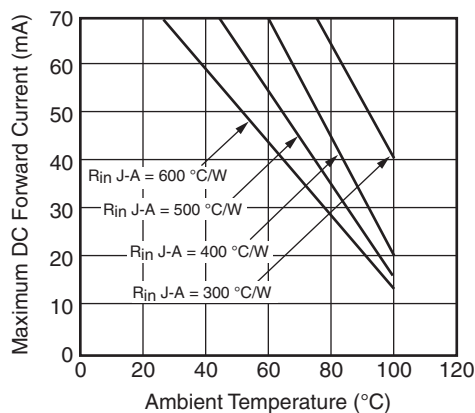


Fig 5. Maximum DC Forward Current vs. Ambient Temperature



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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.