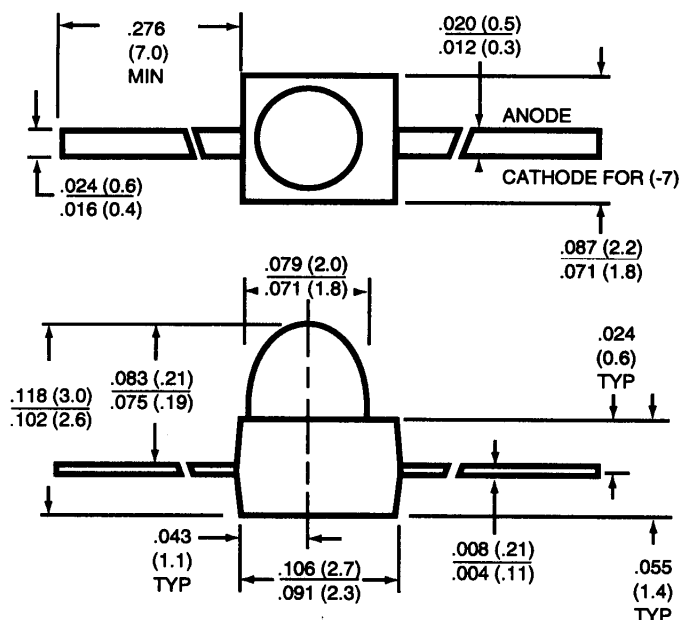


SUBMINIATURE T-3/4 (1.9 mm) SOLID STATE LAMPS

| | | | | | |
|---------------|------------------|-----------------|---------------|------------------|-------|
| High Eff. Red | QTLP913-2 | RED DIFFUSED | High Eff. Red | QTLP912-2 | CLEAR |
| Yellow | QTLP913-3 | YELLOW DIFFUSED | Yellow | QTLP912-3 | CLEAR |
| Green | QTLP913-4 | GREEN DIFFUSED | Green | QTLP912-4 | CLEAR |
| AlGaAs Red | QTLP913-7 | RED DIFFUSED | AlGaAs Red | QTLP912-7 | CLEAR |
| AlGaAs Red | QTLP913-9 | RED DIFFUSED | AlGaAs Red | QTLP912-9 | CLEAR |

PACKAGE DIMENSIONS



Note: All dimensions are in inches (mm).

DESCRIPTION

These subminiature LED lamps are intended for low cost status indication on PCBs, backlighting keyboards and switches. They are compatible with vapor phase reflow or wave solder surface mount equipment. Both clear and tinted diffused lenses, as well as a choice of "yoke", "Z-bend", or "gull-wing" lead bends are available.

FEATURES

- Subminiature package
- Low package profile
- Choice of clear or tinted diffused lens
- Three lead bend options
- Tape and reel option

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

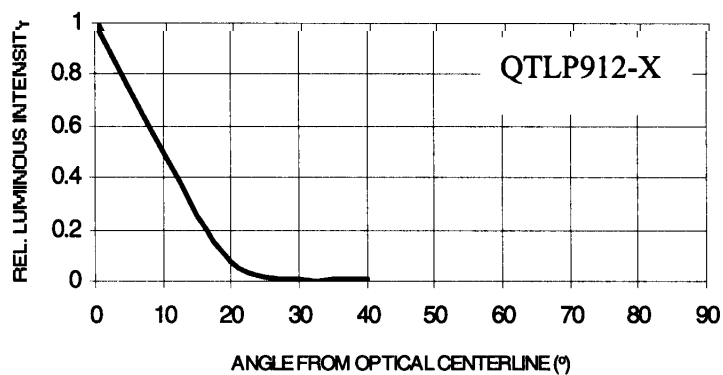
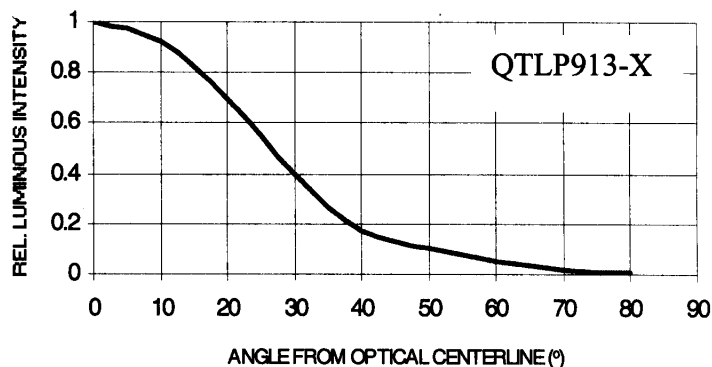
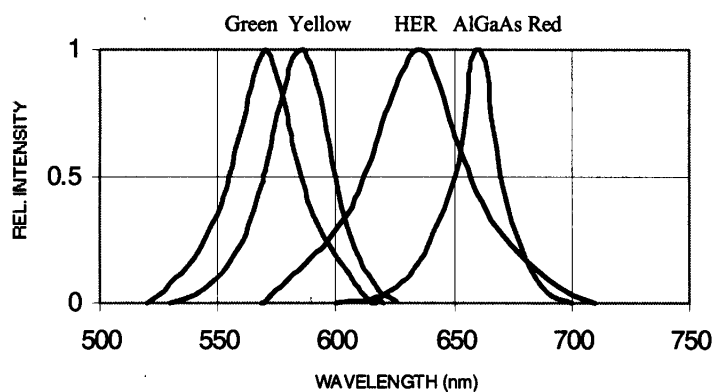
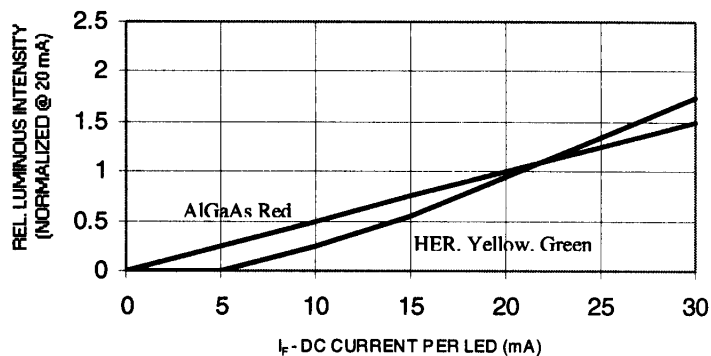
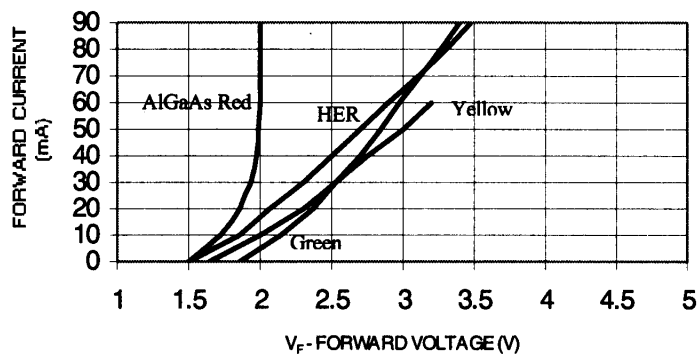
| | High Eff. Red QTLP913-2 QTLP912-2 | Yellow QTLP913C-3 QTLP912C-3 | Green QTLP913-4 QTLP912-4 | AlGaAs Red QTLP913C-7,9 QTLP912C-7,9 | Unit |
|---|---|--|---|--|------|
| DC Forward Current (I _F) | 30 | 20 | 30 | 40 | mA |
| Peak Forward Current (I _F) @ f = 1.0 KHz, Duty factor = 1/10 | 160 | 160 | 160 | 200 | mA |
| Power Dissipation (P _d) | 100 | 85 | 100 | 100 | mW |
| Reversed Voltage (V _R) I _R = 10μA | 5 | 5 | 5 | 5 | V |
| Operating Temperature Range | -40°C to +85°C | | | | |
| Storage Temperature Range | -40°C to +100°C | | | | |
| Lead Soldering Time | 5 secs @ 260°C for wave solder; 10 secs @ 260°C for IR reflow | | | | |

ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

| Part Number: QTLP | High Eff. Red 912-2 | Yellow 912-3 | Green 912-4 | AlGaAs Red 912-7,9 | Test Condition |
|--|---------------------------|-----------------|----------------|--------------------------|------------------------|
| Luminous Intensity (mcd) | | | | | I _F = 20 mA |
| Minimum | 40 | 15 | 30 | 110 | |
| Typical | 80 | 30 | 50 | 170 | |
| Forward Voltage (V_F) | | | | | I _F = 20 mA |
| Minimum | 1.7 | 1.7 | 1.7 | 1.7 | |
| Typical | 2.0 | 2.0 | 2.1 | 2.0 | |
| Maximum | 2.8 | 2.8 | 2.8 | 2.8 | |
| Peak Wavelength (nm) | 635 | 585 | 565 | 660 | I _F = 20 mA |
| Spectral Line Half Width (nm) | 45 | 35 | 30 | 20 | I _F = 20 mA |
| Viewing Angle (degrees) | 25 | 25 | 25 | 25 | I _F = 20 mA |

| Part Number: QTLP | High Eff. Red 913-2 | Yellow 913-3 | Green 913-4 | AlGaAs Red 913-7,9 | Test Condition |
|--|---------------------------|-----------------|----------------|--------------------------|------------------------|
| Luminous Intensity (mcd) | | | | | I _F = 20 mA |
| Minimum | 10 | 10 | 2 | 70 | |
| Typical | 15 | 15 | 5 | 110 | |
| Forward Voltage (V_F) | | | | | I _F = 20 mA |
| Minimum | 1.7 | 1.7 | 1.7 | 1.7 | |
| Typical | 2.0 | 2.0 | 2.1 | 2.0 | |
| Maximum | 2.8 | 2.8 | 2.8 | 2.8 | |
| Peak Wavelength (nm) | 635 | 585 | 565 | 660 | I _F = 20 mA |
| Spectral Line Half Width (nm) | 45 | 35 | 30 | 20 | I _F = 20 mA |
| Viewing Angle (degrees) | 50 | 50 | 50 | 50 | I _F = 20 mA |

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES (T_A = 25°C)



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