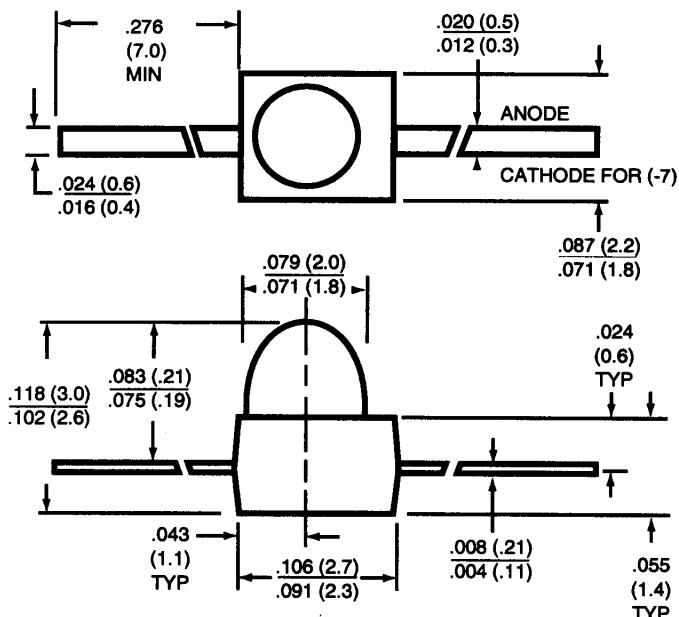


High Eff. Red	QTL913-2	RED DIFFUSED
Yellow	QTL913-3	YELLOW DIFFUSED
Green	QTL913-4	GREEN DIFFUSED
AlGaAs Red	QTL913-7	RED DIFFUSED
AlGaAs Red	QTL913-9	RED DIFFUSED

High Eff. Red	QTL912-2	CLEAR
Yellow	QTL912-3	CLEAR
Green	QTL912-4	CLEAR
AlGaAs Red	QTL912-7	CLEAR
AlGaAs Red	QTL912-9	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 (TA=25°C unless otherwise specified)

	High Eff. Red QTL913-2 QTL912-2	Yellow QTL913C-3 QTL912C-3	Green QTL913-4 QTL912-4	AlGaAs Red QTL913C-7,9 QTL912C-7,9	Unit
DC Forward Current (I_F)	30	20	30	40	mA
Peak Forward Current (I_F)	160	160	160	200	mA
@ f = 1.0 KHz, Duty factor = 1/10					
Power Dissipation (P_d)	100	85	100	100	mW
Reversed Voltage (V_R) I _R = 10µA	5	5	5	5	V
Operating Temperature Range					
Storage Temperature Range					
Lead Soldering Time	5 secs @ 260°C for wave solder; 10 secs @ 260°C for IR reflow				

ELECTRO-OPTICAL CHARACTERISTICS

($T_A=25^\circ\text{C}$ unless otherwise specified)

Part Number: QTL P	High Eff. Red 912-2	Yellow 912-3	Green 912-4	AlGaAs Red 912-7,9	Test Condition
Luminous Intensity (mcd)					$I_F = 20 \text{ mA}$
Minimum	40	15	30	110	
Typical	80	30	50	170	
Forward Voltage (V_F)					$I_F = 20 \text{ mA}$
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	$I_F = 20 \text{ mA}$
Spectral Line Half Width (nm)	45	35	30	20	$I_F = 20 \text{ mA}$
Viewing Angle (degrees)	25	25	25	25	$I_F = 20 \text{ mA}$

Part Number: QTL P	High Eff. Red 913-2	Yellow 913-3	Green 913-4	AlGaAs Red 913-7,9	Test Condition
Luminous Intensity (mcd)					$I_F = 20 \text{ mA}$
Minimum	10	10	2	70	
Typical	15	15	5	110	
Forward Voltage (V_F)					$I_F = 20 \text{ mA}$
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	$I_F = 20 \text{ mA}$
Spectral Line Half Width (nm)	45	35	30	20	$I_F = 20 \text{ mA}$
Viewing Angle (degrees)	50	50	50	50	$I_F = 20 \text{ mA}$

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$)

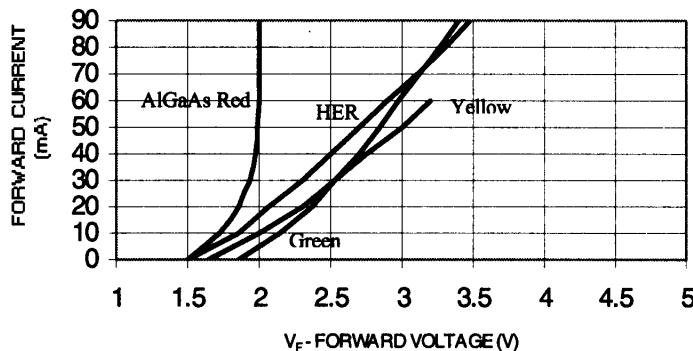


Fig 1. Forward Current vs. Forward Voltage

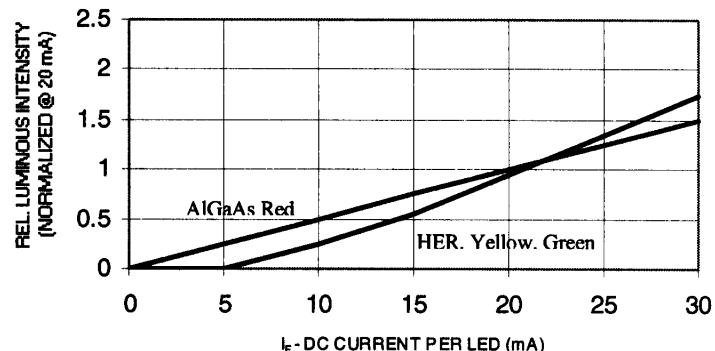


Fig 2. Forward Current vs. Forward Voltage

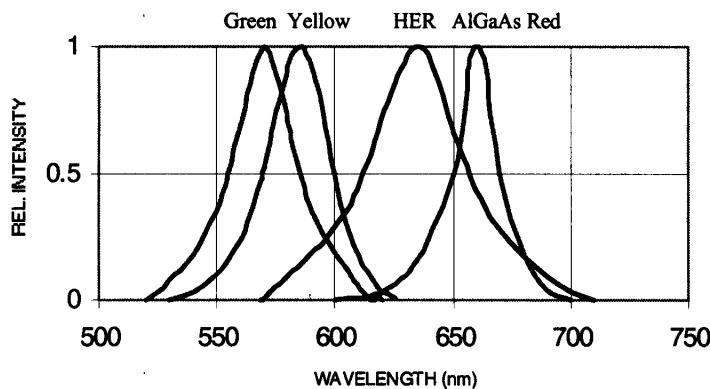


Fig 3. Relative Intensity vs. Wavelength

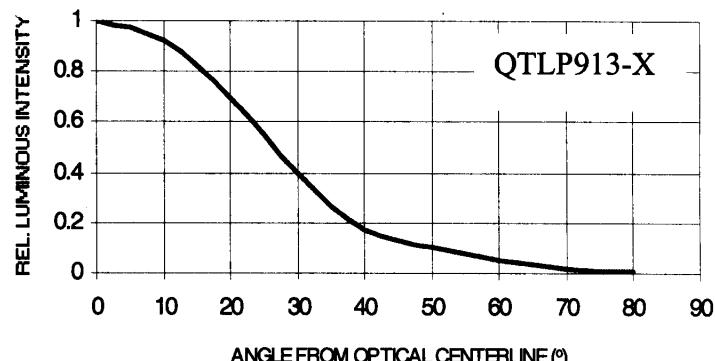


Fig 4. Relative Intensity vs. Angular Displacement

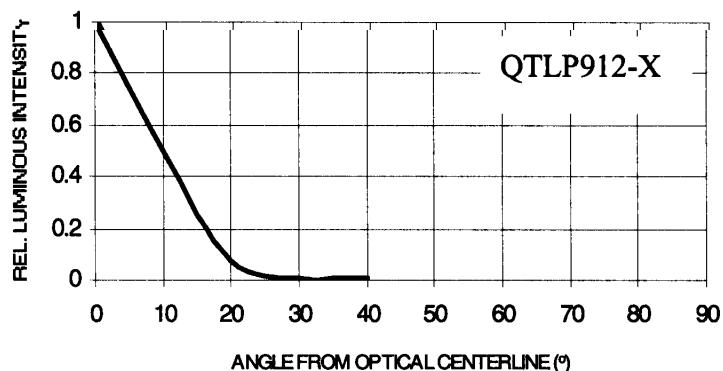


Fig 5. Relative Intensity vs. Angular Displacement



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

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