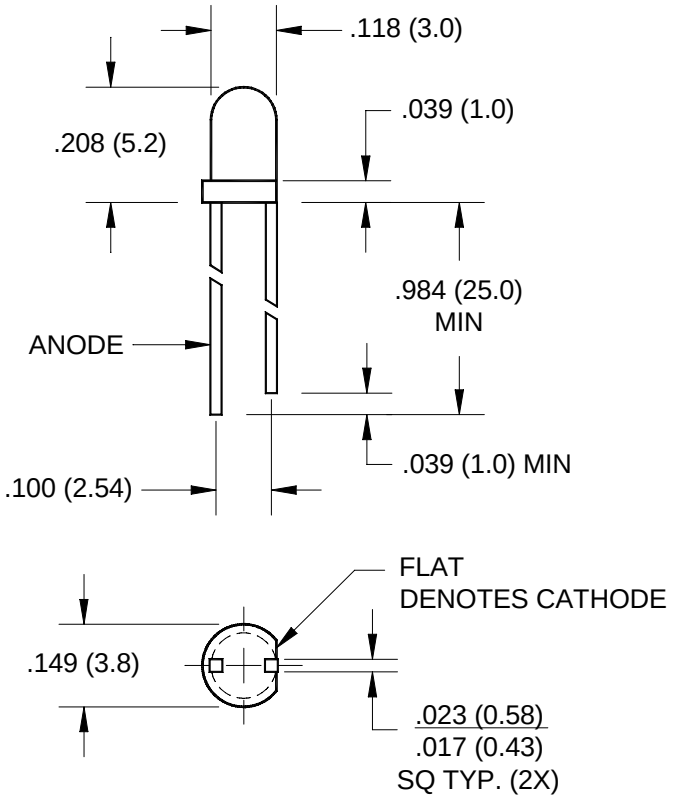
FAIRCHILD
SEMICONDUCTOR®

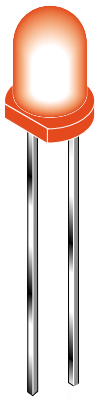
T-100 (3mm)
SOLID STATE INDICATOR LAMPS

RED DIFFUSED	**QL202HD**	**RED CLEAR**	**QL202HT**
HER DIFFUSED	**QL202ID**	**HER CLEAR**	**QL202IT**
YELLOW DIFFUSED	**QL202YD**	**YELLOW CLEAR**	**QL202YT**
GREEN DIFFUSED	**QL202GD**	**GREEN CLEAR**	**QL202GT**

PACKAGE DIMENSIONS



FEATURES



- Popular T-100 package
- Choice of viewing angles
- Choice of tinted or tinted diffused lens

DESCRIPTION

These T-100 LEDs are used as general purpose indicators. They come in either a wide angle (70°) diffused lens or a moderate angle (32°) clear lens. The red and green lamps are made with GaP LEDs on a GaP substrate. The HER and yellow lamps are made with GaAsP LEDs on a GaP substrate. All have an epoxy encapsulation lens.

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 1.5 mm (0.059") max.
4. Tolerance is +/-0.12" (0.3mm) unless otherwise noted.

ABSOLUTE MAXIMUM RATING (T_A =25°C)

Parameter	Symbol	Red	Her	Green	Yellow	Units
Power Dissipation	P_D	100	100	100	100	mA
Peak Forward Current (at f = 1.0 KHz, Duty factor = 1/10)	I_{FM}	50	100	100	100	mA
Reversed Voltage	V_R	5	5	5	5	V
Continuous DC Forward Current	I_F	15	20	20	20	mA
Lead Soldering Time at 260° C	T_{SOL}	5	5	5	5	sec
Operating Temperature	T_{OPR}	-40 to +100	-40 to +100	-40 to +100	-40 to +100	°C
Storage Temperature	T_{STG}	-40 to +100	-40 to +100	-40 to +100	-40 to +100	°C

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QL202HD	QL202ID	QL202GD	QL202YD	Condition
Luminous Intensity (mcd)						I_F = 10mA
Minimum	I_V	0.5	1.1	1.1	1.1	
Typical		1.6	6.0	6.0	4.5	
Forward Voltage (V)						I_F = 10mA
Typical	V_F	1.7	1.7	1.7	1.7	
Maximum		2.1	2.0	2.1	2.0	
Spectral Line Half Width (nm)	$\Delta\lambda$	90	45	30	35	I_F = 10mA
Peak Wavelength (nm)	λp	697	635	565	585	I_F = 10mA
Viewing Angle (Total) (°)	2θ 1/2	70	70	70	70	I_F = 10mA

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QL202HT	QL202IT	QL202GT	QL202YT	Condition
Luminous Intensity (mcd)						I_F = 10mA
Minimum	I_V	2.5	3.5	3.0	3.5	
Typical		10.0	17.0	15.0	15.0	
Forward Voltage (V)						I_F = 10mA
Typical	V_F	1.7	1.7	1.7	1.7	
Maximum		2.1	2.0	2.1	2.0	
Spectral Line Half Width (nm)	$\Delta\lambda$	90	45	30	35	I_F = 10mA
Peak Wavelength (nm)	λp	697	635	565	585	I_F = 10mA
Viewing Angle (Total) (°)	2θ 1/2	32	32	32	32	I_F = 10mA

1. The leads of the device were immersed in molten solder at 260°C, to a point 1/16 inch (1.6 mm) from the body of the device per MIL-S-750, with a dwell time of 5 seconds.

TYPICAL PERFORMANCE CURVES (T_A =25°C)

Fig. 1 Forward Current vs. Forward Voltage

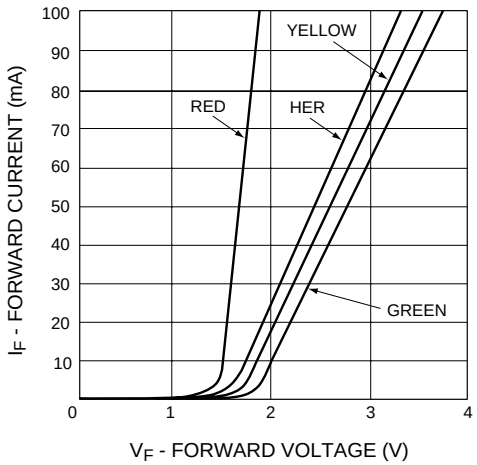


Fig. 2 Luminous Intensity vs. Forward Current

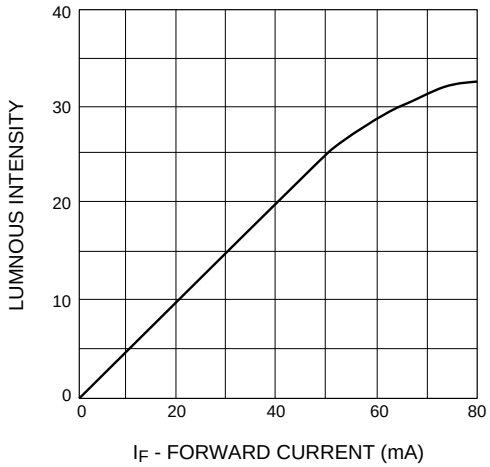


Fig. 3 Spatial Distribution

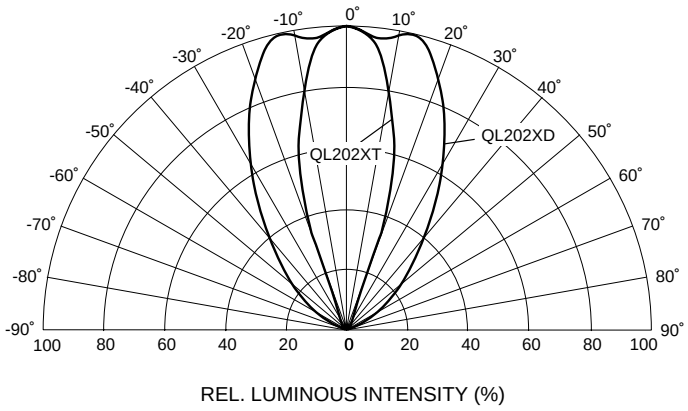
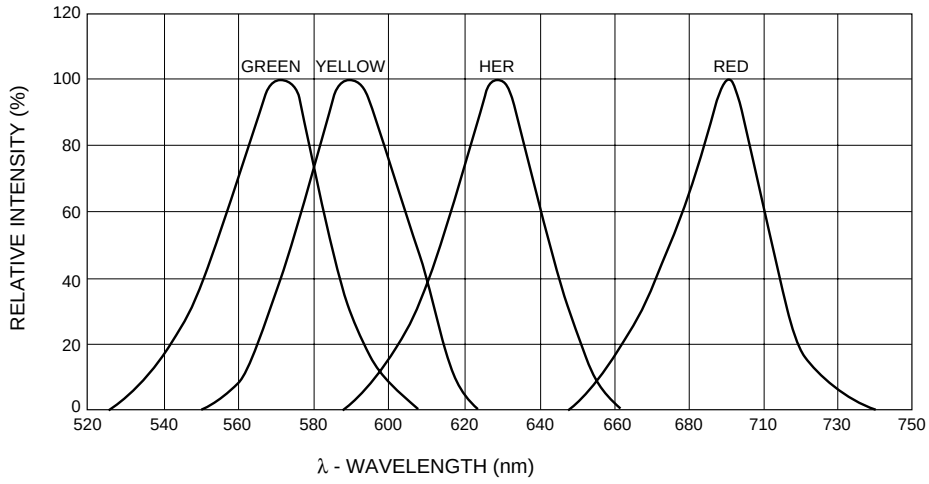


Fig. 4 Relative Intensity vs. Peak Wavelength



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