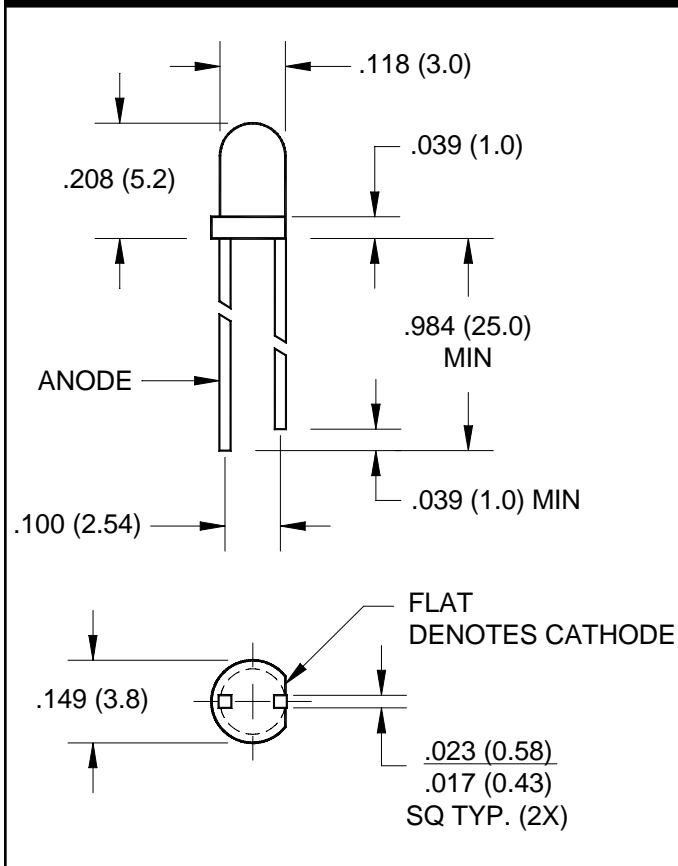


**T-100 (3mm)**  
**SOLID STATE INDICATOR LAMPS**

RED DIFFUSED	QL202HD
HER DIFFUSED	QL202ID
YELLOW DIFFUSED	QL202YD
GREEN DIFFUSED	QL202GD

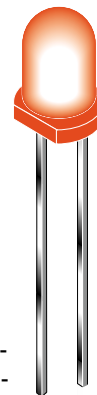
RED CLEAR	QL202HT
HER CLEAR	QL202IT
YELLOW CLEAR	QL202YT
GREEN CLEAR	QL202GT

## 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<sub>A</sub> =25°C)

Parameter	Symbol	Red	Her	Green	Yellow	Units
Power Dissipation	P <sub>D</sub>	100	100	100	100	mW
Peak Forward Current (at f = 1.0 KHz, Duty factor = 1/10)	I <sub>FM</sub>	50	100	100	100	mA
Reversed Voltage	V <sub>R</sub>	5	5	5	5	V
Continuous DC Forward Current	I <sub>F</sub>	15	20	20	20	mA
Lead Soldering Time at 260° C	T <sub>SOL</sub>	5	5	5	5	sec
Operating Temperature	T <sub>OPR</sub>	-40 to +100	-40 to +100	-40 to +100	-40 to +100	°C
Storage Temperature	T <sub>STG</sub>	-40 to +100	-40 to +100	-40 to +100	-40 to +100	°C

**ELECTRICAL / OPTICAL CHARACTERISTICS** (T<sub>A</sub> =25°C)

Part Number	Symbol	QL202HD	QL202ID	QL202GD	QL202YD	Condition
Luminous Intensity (mcd)						I <sub>F</sub> = 10mA
Minimum	I <sub>V</sub>	0.5	1.1	1.1	1.1	
Typical		1.6	6.0	6.0	4.5	
Forward Voltage (V)						I <sub>F</sub> = 10mA
Typical	V <sub>F</sub>	1.7	1.7	1.7	1.7	
Maximum		2.1	2.0	2.1	2.0	
Spectral Line Half Width (nm)	Δλ	90	45	30	35	I <sub>F</sub> = 10mA
Peak Wavelength (nm)	λ <sub>p</sub>	697	635	565	585	I <sub>F</sub> = 10mA
Viewing Angle (Total) (°)	2θ 1/2	70	70	70	70	I <sub>F</sub> = 10mA

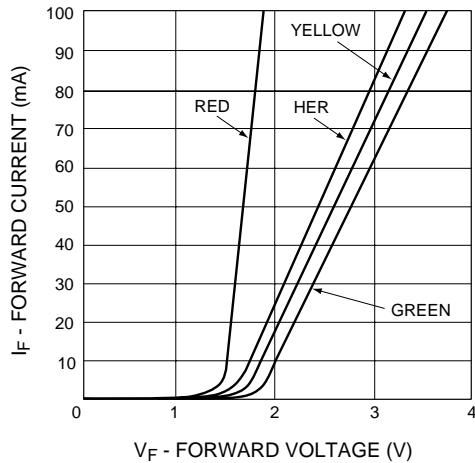
**ELECTRICAL / OPTICAL CHARACTERISTICS** (T<sub>A</sub> =25°C)

Part Number	Symbol	QL202HT	QL202IT	QL202GT	QL202YT	Condition
Luminous Intensity (mcd)						I <sub>F</sub> = 10mA
Minimum	I <sub>V</sub>	2.5	3.5	3.0	3.5	
Typical		10.0	17.0	15.0	15.0	
Forward Voltage (V)						I <sub>F</sub> = 10mA
Typical	V <sub>F</sub>	1.7	1.7	1.7	1.7	
Maximum		2.1	2.0	2.1	2.0	
Spectral Line Half Width (nm)	Δλ	90	45	30	35	I <sub>F</sub> = 10mA
Peak Wavelength (nm)	λ <sub>p</sub>	697	635	565	585	I <sub>F</sub> = 10mA
Viewing Angle (Total) (°)	2θ 1/2	32	32	32	32	I <sub>F</sub> = 10mA

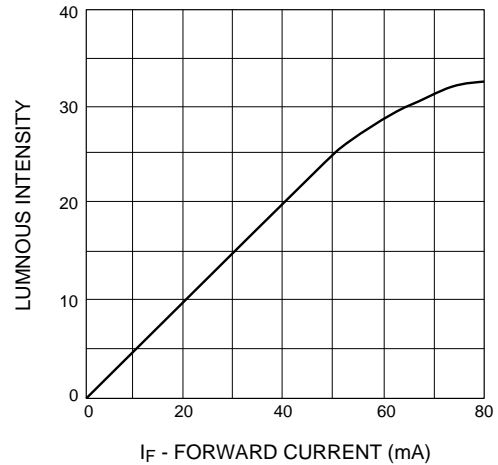
1. The leads of the device were immersed in molten solder at 260°C, to a point 1/16 inch (1.6 mm) from the body of the device per MIL-S-750, with a dwell time of 5 seconds.

**TYPICAL PERFORMANCE CURVES** ( $T_A = 25^\circ\text{C}$ )

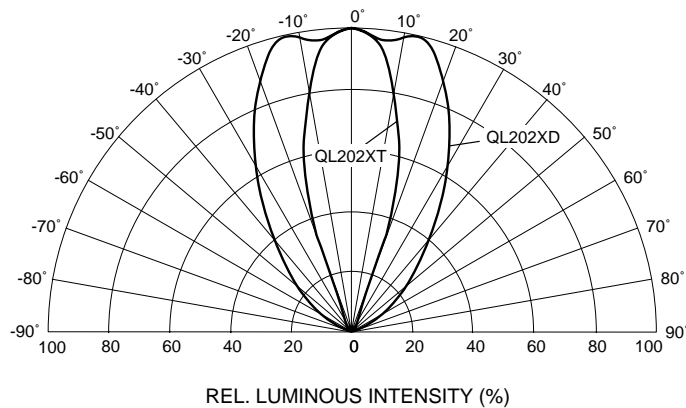
**Fig. 1 Forward Current vs. Forward Voltage**



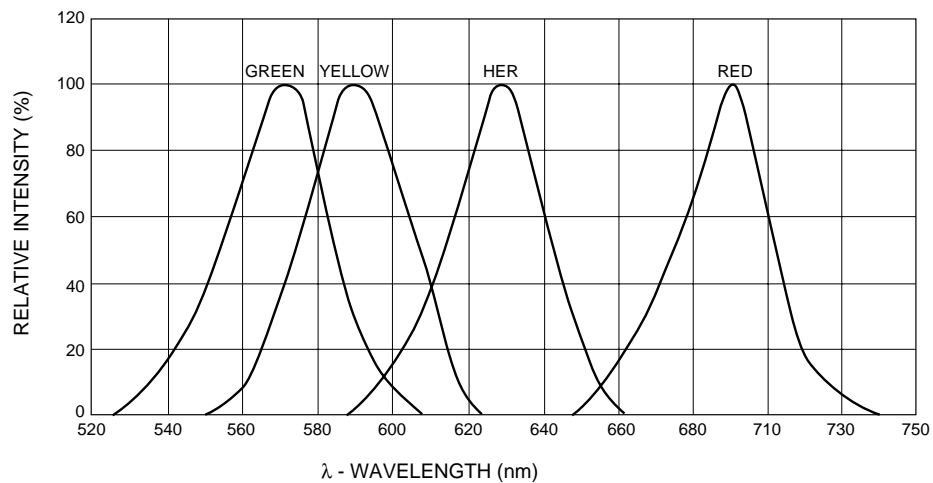
**Fig. 2 Luminous Intensity vs. Forward Current**



**Fig. 3 Spatial Distribution**



**Fig. 4 Relative Intensity vs. Peak Wavelength**



**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in labeling, can be reasonably expected to result in a significant injury of the user.
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.