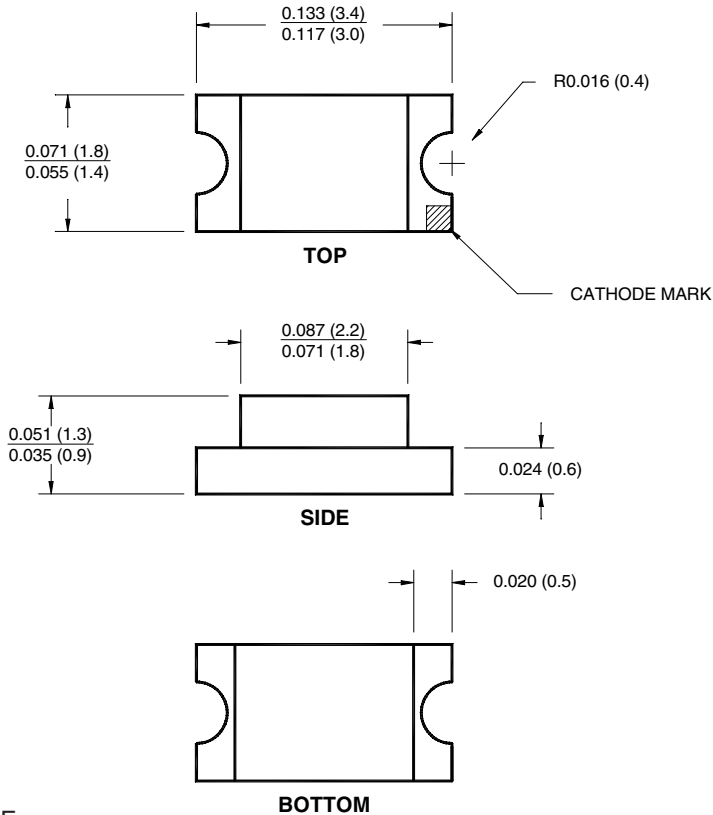


PACKAGE DIMENSIONS



NOTE:

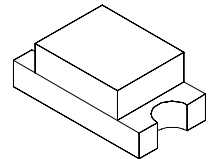
Dimensions for all drawings are in inches (mm).

HER
YELLOW
GREEN
AlGaAs RED

QTLP650D-2
QTLP650D-3
QTLP650D-4
QTLP650D-7

FEATURES

- Ultra-miniature
- Extremely low profile
- Industrial standard footprint
- Wide viewing angle of 160°
- Diffused optics
- Moisture-proof packaging



DESCRIPTION

These surface mount lamps are designed to fit industry standard profile and footprint for ultra-miniature chip type 1206. The low profile and 160° viewing angle make this chip type LED ideal for panel illumination, push-button backlighting and membrane switch applications.

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

Parameter	HER QTLP650D-2	Yellow QTLP650D-3	Green QTLP650D-4	AlGaAs Red QTLP650D-7	Units
Continuous Forward Current - I _F	30	20	30	30	mA
Peak Forward Current - I _F (f = 1.0 KHz, Duty Factor = 1/10)	160	160	160	160	mA
Reverse Voltage - V _R (I _R = 10 μA)	5	5	5	5	V
Power Dissipation - P _D	100	85	100	100	mW
Operating Temperature - T _{OPR}	-40 to +85				°C
Storage Temperature - T _{STG}	-40 to +100				°C
Lead Soldering Time - T _{SOL} Reflow	240 for 5 sec				°C

HER	QTLP650D-2
YELLOW	QTLP650D-3
GREEN	QTLP650D-4
AlGaAs RED	QTLP650D-7

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	HER QTLP650D-2	Yellow QTLP650D-3	Green QTLP650D-4	AlGaAs Red QTLP650D-7	Condition
Luminous Intensity (mcd)					I _F = 20mA
Minimum	2.4	2.4	4.0	4.0	
Typical	4.0	4.0	6.5	7.0	
Forward Voltage (V)					I _F = 20mA
Maximum	2.8	2.8	2.8	2.4	
Typical	2.0	2.0	2.1	1.9	
Peak Wavelength (nm)	635	585	565	660	I _F = 20mA
Spectral Line Half Width (nm)	45	35	30	20	I _F = 20mA
Viewing Angle (°)	160	160	160	160	I _F = 20mA

TYPICAL PERFORMANCE CURVES

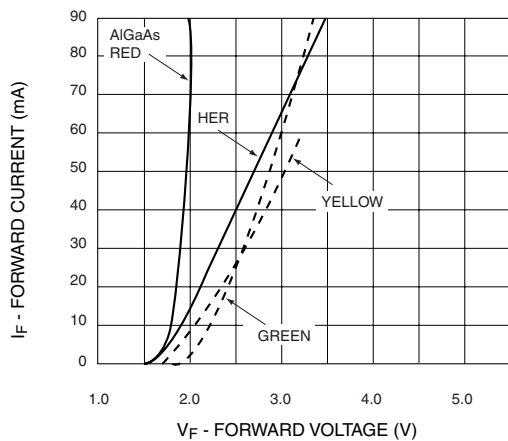


Fig. 1 Forward Current vs. Forward Voltage

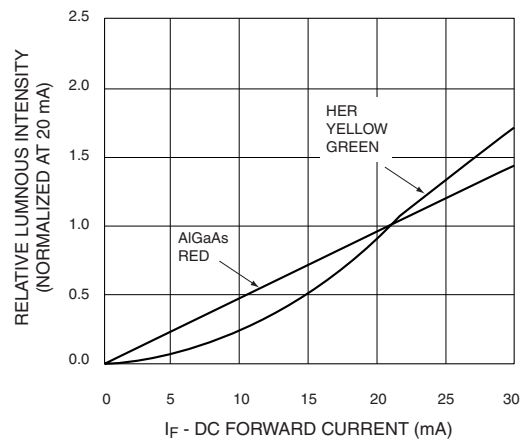


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

HER	QTLP650D-2
YELLOW	QTLP650D-3
GREEN	QTLP650D-4
AlGaAs RED	QTLP650D-7

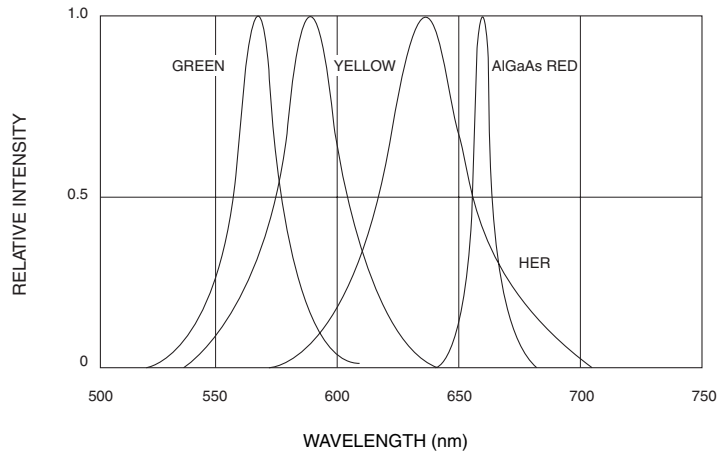


Fig. 3 Relative Intensity vs. Peak Wavelength

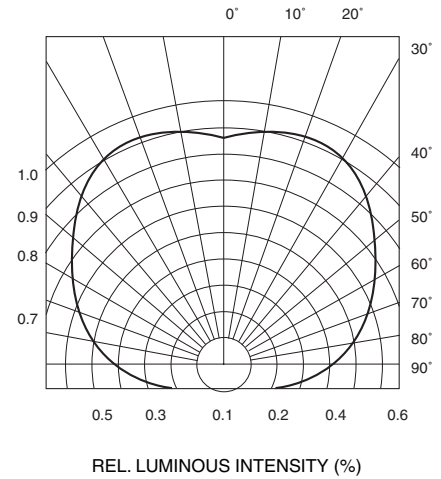


Fig. 4 Radiation Diagram

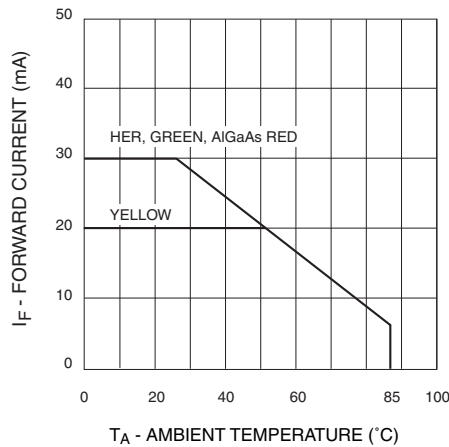


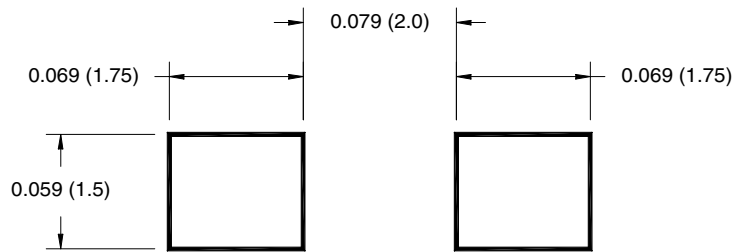
Fig. 5 Current Derating Curve

SURFACE MOUNT LED LAMP

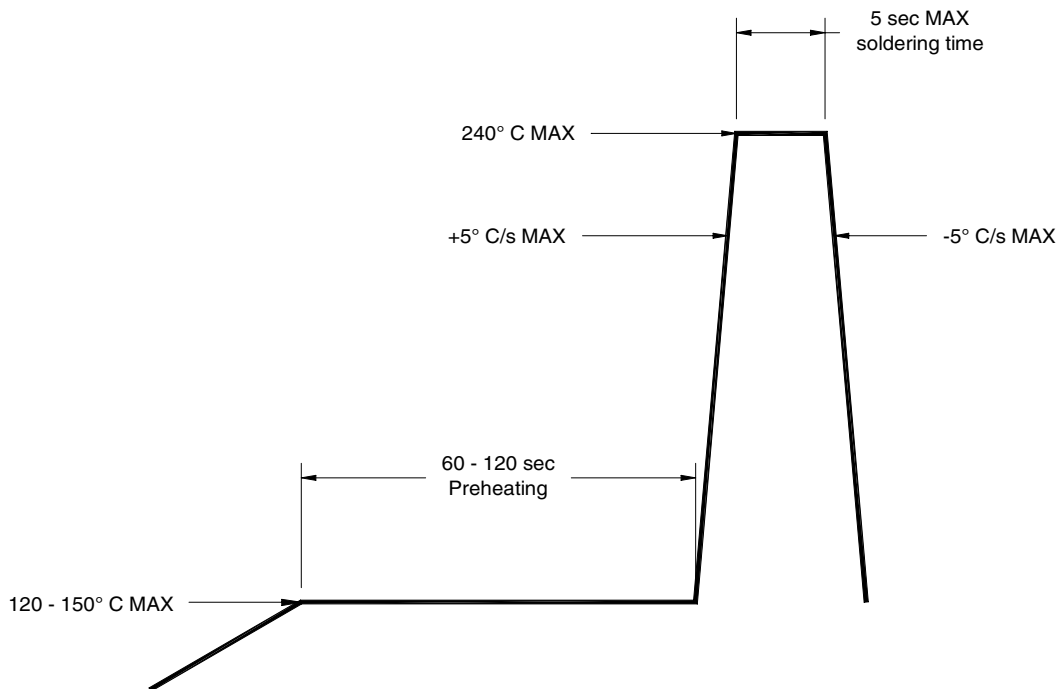
1206 CHIP TYPE - Water Clear

HER	QTLP650D-2
YELLOW	QTLP650D-3
GREEN	QTLP650D-4
AlGaAs RED	QTLP650D-7

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



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