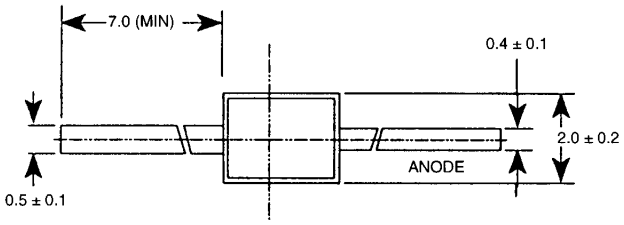
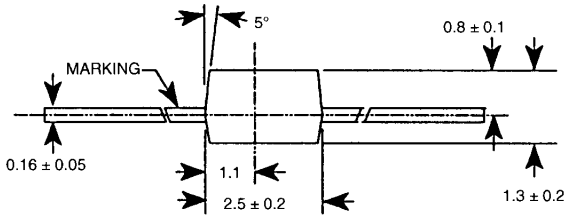
FAIRCHILD
SEMICONDUCTOR™

SURFACE MOUNT LED LAMP
FLAT TYPE

RED QTLP282-2 CLEAR
YELLOW QTLP282-3 CLEAR
GREEN QTLP282-4 CLEAR
AlGaAs/RED QTLP282-7 CLEAR

PACKAGE DIMENSIONS





ST1709

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS
2. LEAD SPACING IS MEASURED WHERE THE LEADS EMERGE FROM THE PACKAGE
3. PROTRUDED RESIN UNDER THE FLANGE IS 1.5 mm (0.059") MAXIMUM

DESCRIPTION

These subminiature LED lamps are intended for high volume, low cost status indication on PCBs, and for backlighting keyboards and switches. They are compatible with vapor phase reflow or wave solder surface mount equipment. Available in "Gull-Wing" lead bend configuration. They have clear, flat lenses. Tape and reel options are also available.

FEATURE

- Subminiature package
- Flat package profile
- Wide viewing angle
- Lead bend options for surface mounting

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

PART NUMBER QTLP-	282-2	282-3	282-4	282-7
DC forward current (I_f)	30 mA	20 mA	30 mA	40 mA
Operating temperature range		−40°C to +85°C		
Storage temperature range		−40°C to +100°C		
Lead soldering time (at 1/16 inch (1.6 mm) from the bottom of lamp)		5 seconds @ 260°C		
Peak forward current (at f=1.0 KHz, Duty factor=1/10)	160 mA	160 mA	160 mA	200 mA
Power dissipation (P_d)	100 mW	85 mW	100 mW	110 mA
Recommended operating current (I_f Rec)		20 mA		

FAIRCHILD
SEMICONDUCTOR™

SURFACE MOUNT LED LAMP
FLAT TYPE

ELECTRO-OPTICAL CHARACTERISTICS (T_A=25°C Unless Otherwise Specified)

PART NUMBER	282-2	282-3	282-4	282-7	TEST CONDITIONS
Luminous intensity (mcd)					I_F=20 mA
minimum	1.5	3.5	1.0	11	
typical	5.6	6.0	5.6	17	
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)	640	585	565	660	I_F=20 mA
Spectral line half width (nm)	45	35	30	20	I_F=20 mA
Reverse breakdown voltage (V_R)	5	5	5	5	I_R=10 μA
Viewing angle (°)	150	150	150	150	I_F=20 mA

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

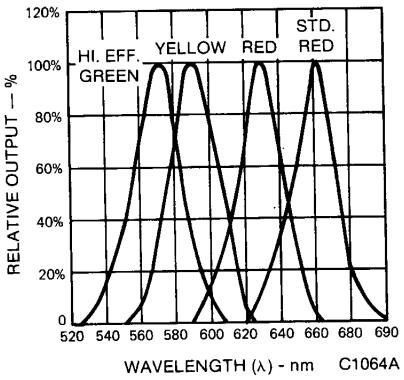


Fig. 1. Relative Intensity vs. Wavelength

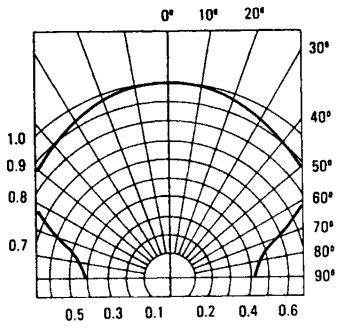


Fig. 2. Relative Luminous Intensity vs. Angular Displacement

FAIRCHILD
SEMICONDUCTOR™

SURFACE MOUNT LED LAMP
FLAT TYPE

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

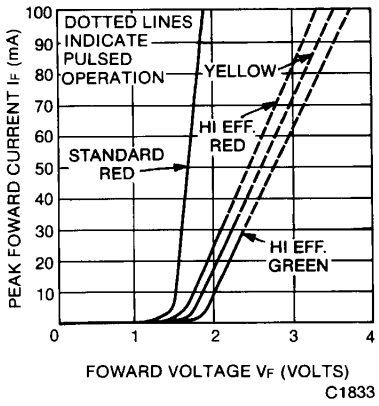


Fig. 3. Forward Current vs. Forward Voltage

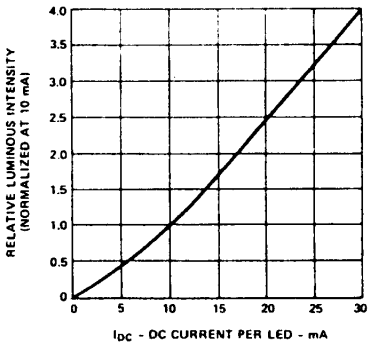


Fig. 4. Relative Luminous Intensity vs. DC Forward Current

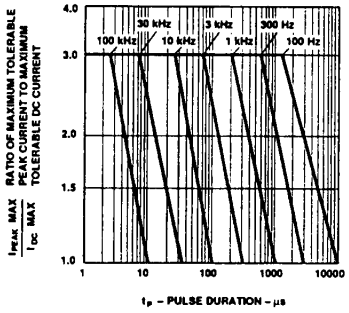


Fig. 5. Maximum Peak Current vs. Pulse Duration

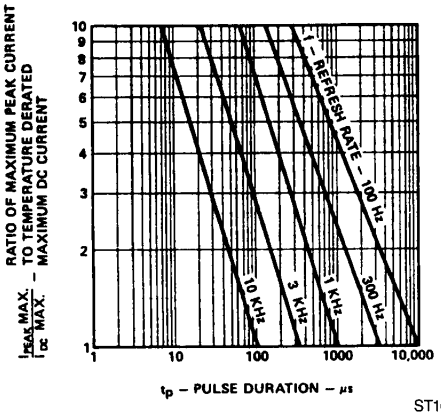
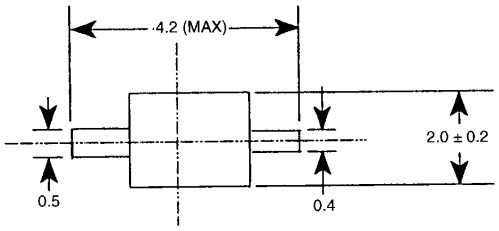


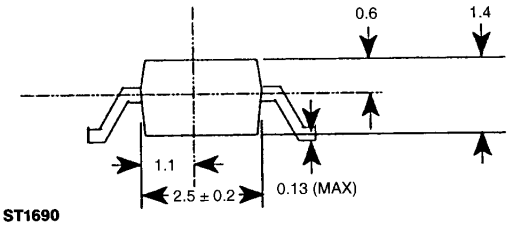
Fig. 6. Maximum Peak Current Vs. Pulse Duration (AlGaAs Red)

FAIRCHILD
SEMICONDUCTOR™

SURFACE MOUNT OPTION FOR QTLP282-X FLAT TYPE LED LAMP GULL WING LEAD CONFIGURATION

LEAD BEND OPTIONS





ST1690

DESCRIPTION

These flat package LED lamps are encapsulated in an axial lead package with a clear lens. Automatic placement equipment can be used to mouont these LEDs on PC boards. The lamps can be mounted using either batch or in line vapor phase reflow solder processes. Subminature lamps are availabe in red, high efficiency red, yellow, and green.

FEATURES

- Gull Wing lead configuration for surface mount application
- Compatible with automatic placement equipment
- Compatible with vapor phase reflow solder processes.
- Supplied on tape and reel or in bulk packaging

ABSOLUTE MAXIMUM RATING (T_A = 25°C Unless Otherwise Specified)

Wave soldering temperature (1.6 mm (0.063") from body)	260° for 3 seconds
Surface Mount Reflow Soldering:	
Convective IR	235°C for 90 seconds
Vapor phase	215°C for 3 minutes

ABSOLUTE MAXIMUM SOLDER RATINGS AND ELECTRICAL/OPTICAL CHARACTERISTICS

The absolute maximum ratings and electrical/optical specifications are identical to the basic catalogue device, except for the vapor phase soldering rating as specified above.

FAIRCHILD
SEMICONDUCTOR™

SURFACE MOUNT LED LAMP
FLAT TYPE

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES 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 the 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.