Is Now Part of

ON Semiconductor®

To learn more about ON Semiconductor, please visit our website at
www.onsemi.com

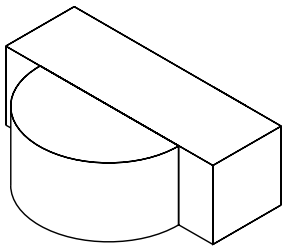
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

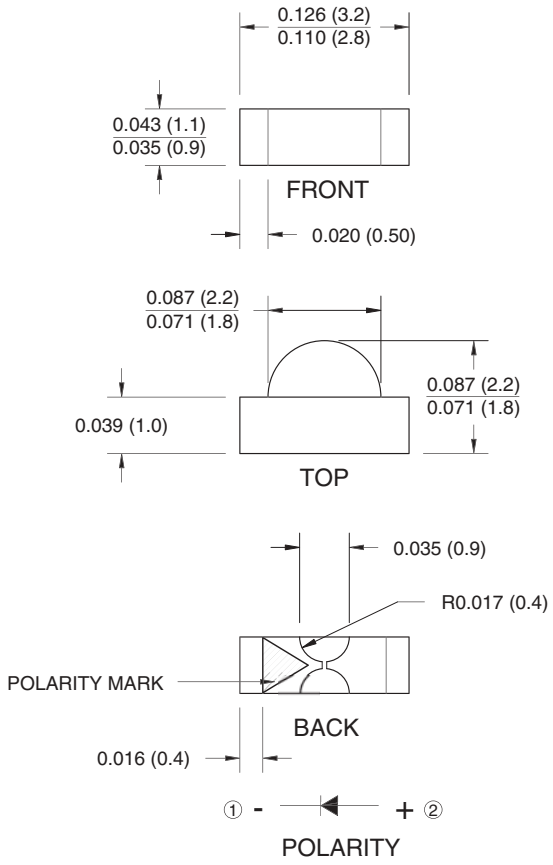
FAIRCHILD
SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

PACKAGE DIMENSIONS





NOTE:
1. Cathode
2. Anode
3. Dimensions for all drawings are in inches (mm).

FEATURES

- Right Angle Surface Mount Package
- Available in 0.315” (8mm) width tape on 7” (178mm) diameter reel; 2,000 units per reel
- Wide Viewing Angle 160°
- Wavelength = 940 nm, GaAs
- Water Clear Lens
- Matched Photosensor: QTLP610CPD

FAIRCHILD
SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)			
Parameter	**Symbol**	**Rating**	**Unit**
Operating Temperature	T_{OPR}	-40 to +85	°C
Storage Temperature	T_{STG}	-40 to +90	°C
Soldering Temperature (Iron)(1,2,3)	T_{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow)(1,2)	T_{SOL-F}	260 for 10 sec	°C
Continuous Forward Current	I_F	65	mA
Reverse Voltage	V_R	5	V
Power Dissipation(4)	P_D	100	mW
Peak Forward Current (Pulse width = 100µs, Duty Cycle=1%)	I_{FD}	1.0	A

Notes:
1. RMA flux is recommended.
2. Methanol or isopropyl alcohols are recommended as cleaning agents.
3. Soldering iron tip at 1/16" (1.6mm) from housing
4. At 25°C or below

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)						
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNITS**
Peak Emission Wavelength	I_F = 20 mA	λP	—	940	—	nm
Emission Angle	I_F = 20 mA	Θ	—	±80	—	Deg.
Forward Voltage	I_F = 20 mA	V_F	—	1.2	1.5	V
	I_F = 100 mA, t_P = 100 µs, Duty Cycle = 0.01		—	1.4	1.85	
	I_F = 1 A, t_P = 100 µs, Duty Cycle = 0.01		—	2.6	4.0	
Reverse Current	V_R = 5 V	I_R	—	—	10	µA
Radiant Intensity	I_F = 20 mA	Ee	0.5	0.8	—	mW/sr
	I_F = 100 mA, t_P = 100 µs, Duty Cycle = 0.01		—	4.0	—	
	I_F = 1 A, t_P = 100 µs, Duty Cycle = 0.01		—	40	—	
Rise Time	I_F = 100 mA	t_r	—	1	—	µs
Fall Time	t_P = 20 ms	t_f	—	1	—	µs

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Ambient Temperature

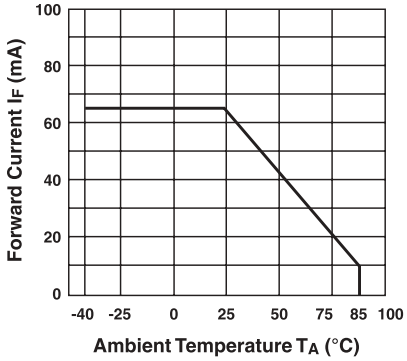


Fig. 2 Relative Radiant Intensity vs. Wavelength

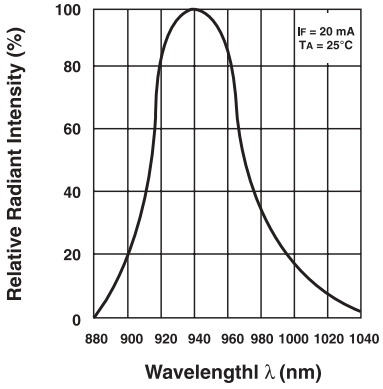


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

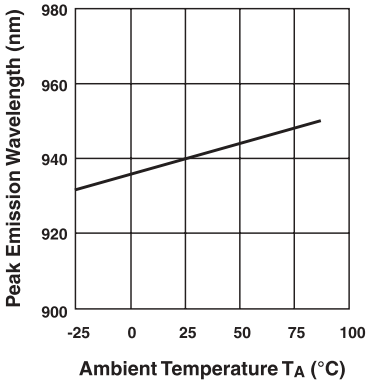


Fig. 4 Forward Current vs. Forward Voltage

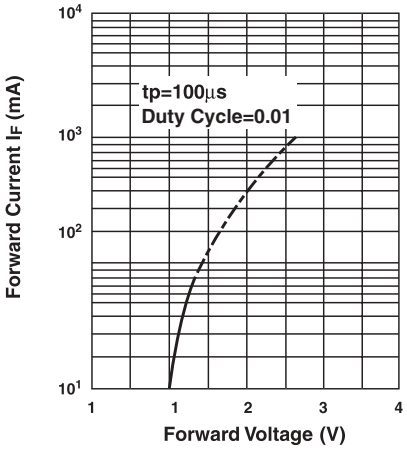


Fig. 5 Relative Intensity vs. Ambient Temperature (°C)

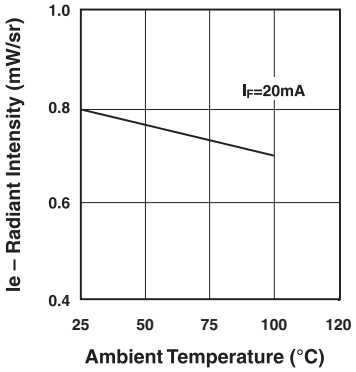
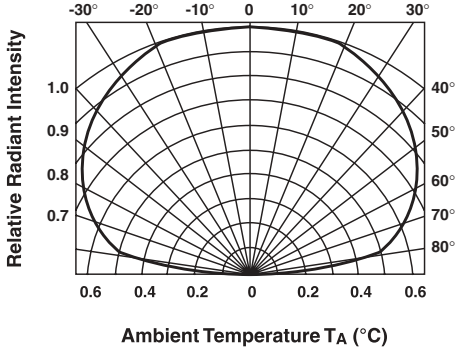


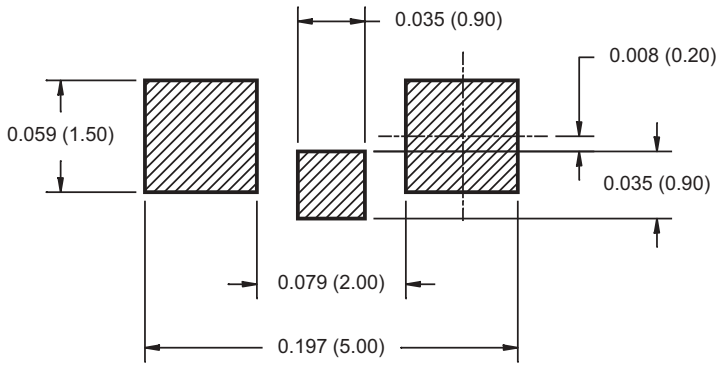
Fig. 6 Relative Radiant Intensity vs. Angular Displacement

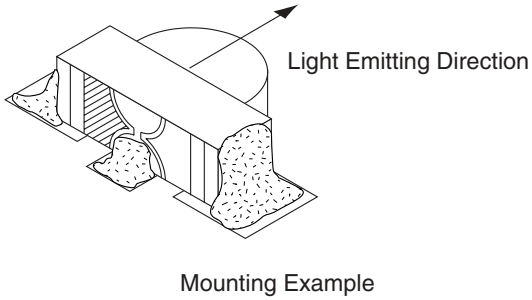


RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

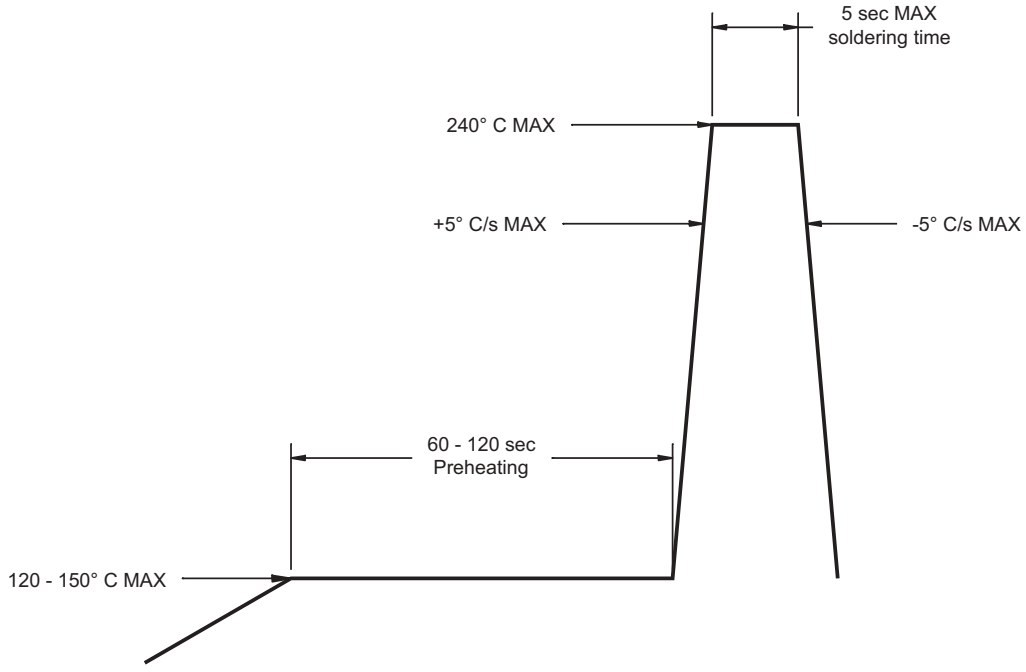
RECOMMENDED PRINTED CIRCUIT BOARD PATTERN





Mounting Example

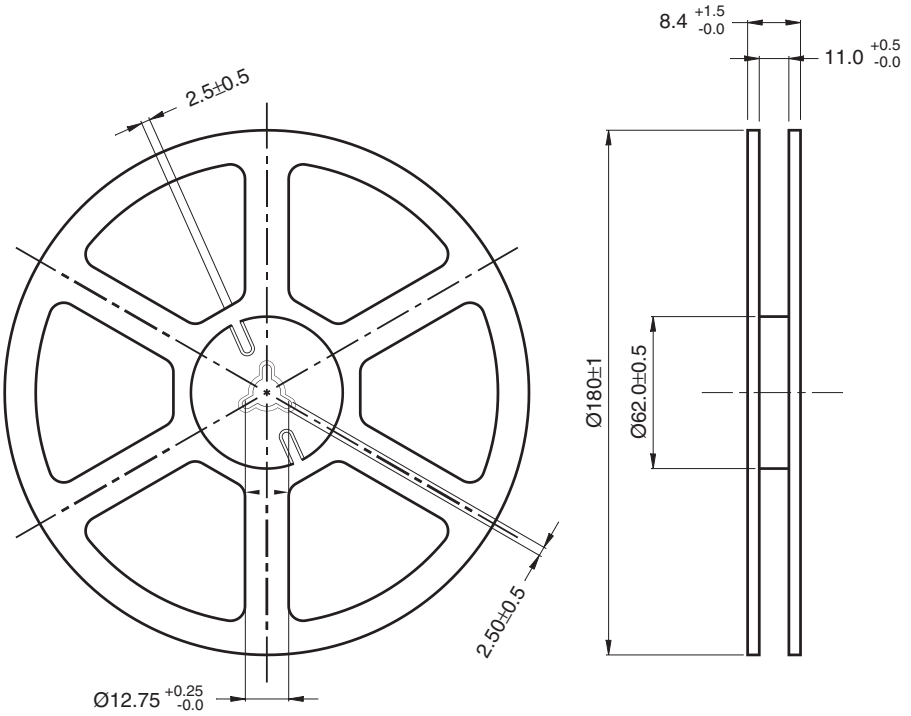
RECOMMENDED IR REFLOW SOLDERING PROFILE

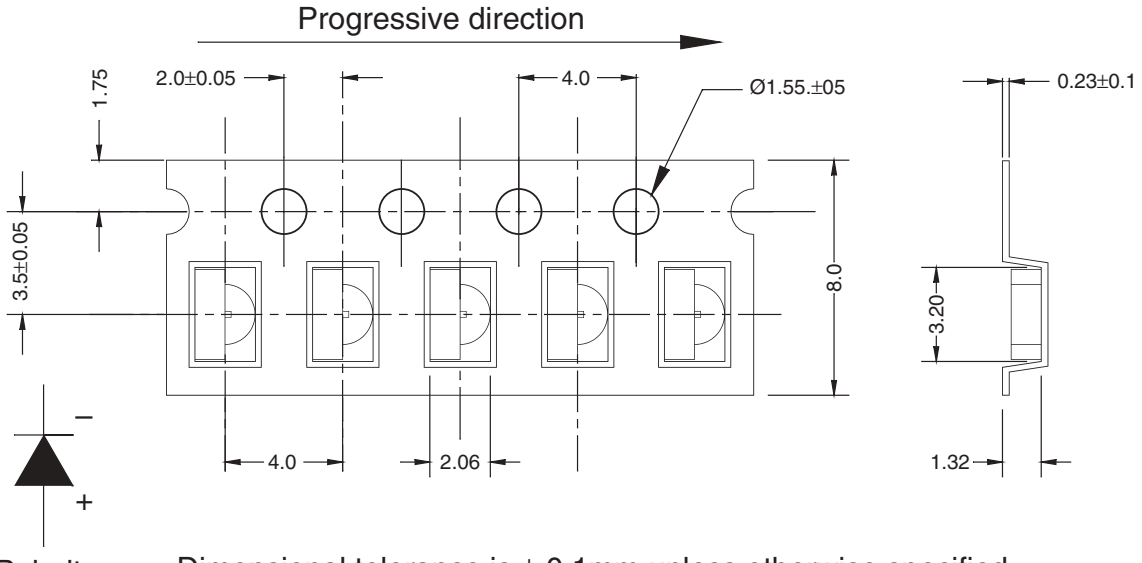


RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

TAPE AND REEL DIMENSIONS





Polarity

Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

FAIRCHILD
SEMICONDUCTOR®

RIGHT ANGLE SURFACE MOUNT INFRARED EMITTING DIODE

QTLP610CIR

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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800−282−9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81−3−5817−1050

ON Semiconductor Website: **www.onsemi.com**

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative