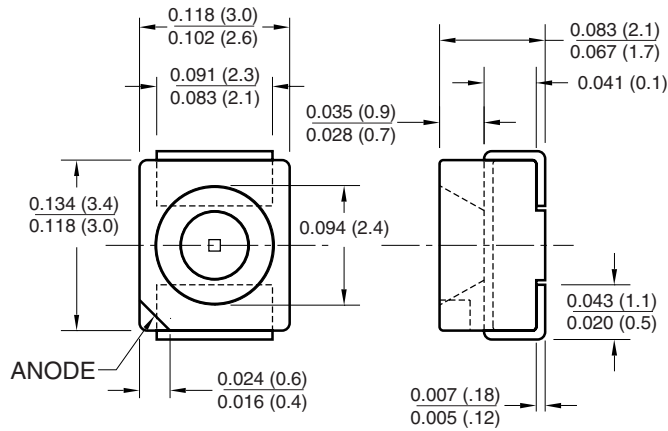
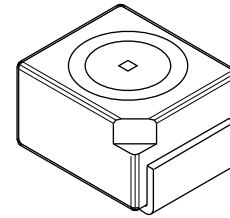


**PACKAGE DIMENSIONS**



**NOTES:**

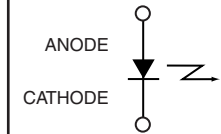
1. Dimensions are in inches (mm)
2. Tolerance of  $\pm .010$  (.25) on all non nominal dimensions unless otherwise specified.



**FEATURES**

- Wavelength = 880 nm, AlGaAs
- Wide Emission Angle, 120°
- Surface Mount PLCC-2 Package
- High Power

**SCHEMATIC**



**ABSOLUTE MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	$T_{opr}$	-55 to +100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +100	$^\circ\text{C}$
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{sol}$	260 for 10 sec	$^\circ\text{C}$
Continuous Forward Current	$I_F$	100	mA
Reverse Voltage	$V_R$	5	V
Peak Forward Current <sup>(4)</sup>	$I_{FM}$	1.75	A
Power Dissipation <sup>(1)</sup>	$P_D$	180	mW

**NOTES**

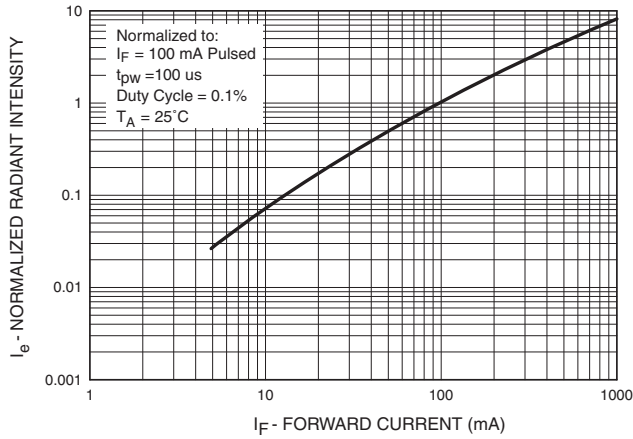
1. Derate power dissipation linearly 2.4 mW/ $^\circ\text{C}$  above 25 $^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions;  $t_p = 100 \mu\text{s}$ ,  $T = 10 \text{ ms}$ .

**ELECTRICAL / OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

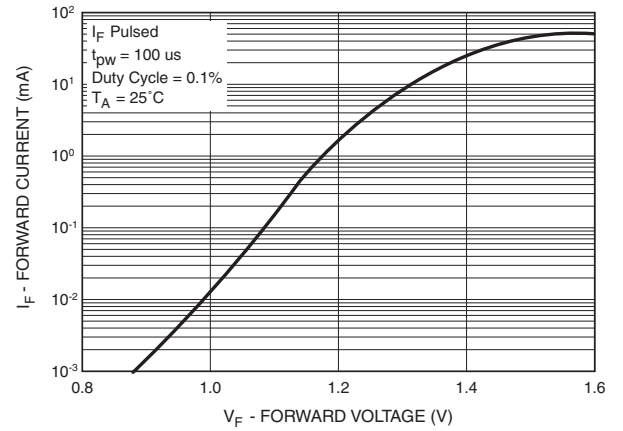
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNITS
Peak Emission Wavelength	$I_F = 100 \text{ mA}$	$\lambda_P$	—	880	—	nm
Spectral Bandwidth	$I_F = 100 \text{ mA}$	$\Delta\lambda$	—	80	—	nm
Emission Angle	$I_F = 100 \text{ mA}$	$\theta$	—	120	—	Deg.
Forward Voltage	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$V_F$	—	1.5	1.8	V
	$I_F = 1 \text{ A}$ , $t_p = 100 \mu\text{s}$		—	3.0	3.8	
Reverse Current	$V_R = 5 \text{ V}$	$I_R$	—	—	1	$\mu\text{A}$
Radiant Intensity	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$I_e$	4	—	8	mW/sr
	$I_F = 1 \text{ A}$ , $t_p = 100 \mu\text{s}$		—	48	—	
Radiant Flux	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$\phi_e$	—	10	—	mW
Temp. Coeff. of $I_E$	$I_F = 100 \text{ mA}$	$T_{CI}$	—	-0.5	—	%/K
Temp. Coeff. of $V_F$	$I_F = 100 \text{ mA}$	$T_{CV}$	—	-4	—	mV/K
Temp. Coeff. of $\lambda$	$I_F = 100 \text{ mA}$	$T_{C\lambda}$	—	0.25	—	nm/K
Rise Time	$I_F = 100 \text{ mA}$	$t_r$	—	—	1	$\mu\text{s}$
Fall Time	$I_F = 100 \text{ mA}$	$t_f$	—	—	1	$\mu\text{s}$

**TYPICAL PERFORMANCE CURVES**

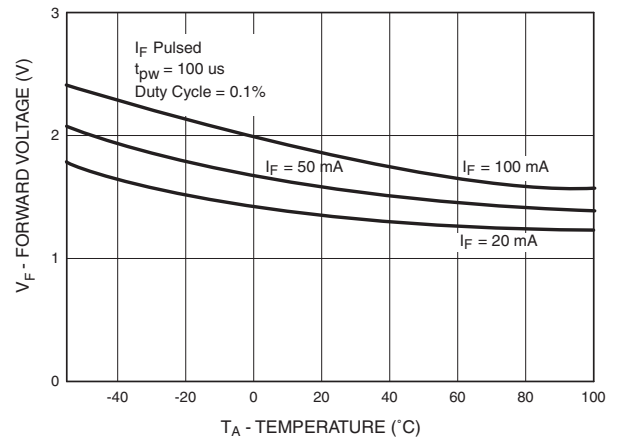
**Fig. 1 Normalized Radiant Intensity vs. Forward Current**



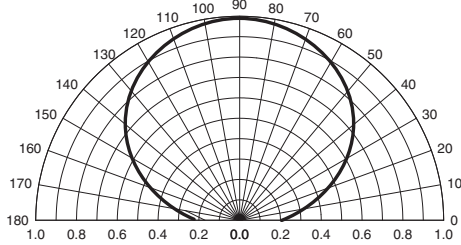
**Fig. 2 Forward Current vs. Forward Voltage**



**Fig. 4 Forward Voltage vs. Ambient Temperature**



**Fig.3 Radiation Diagram**



**Fig. 5 Spectral Response (TBD)**

### **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 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.