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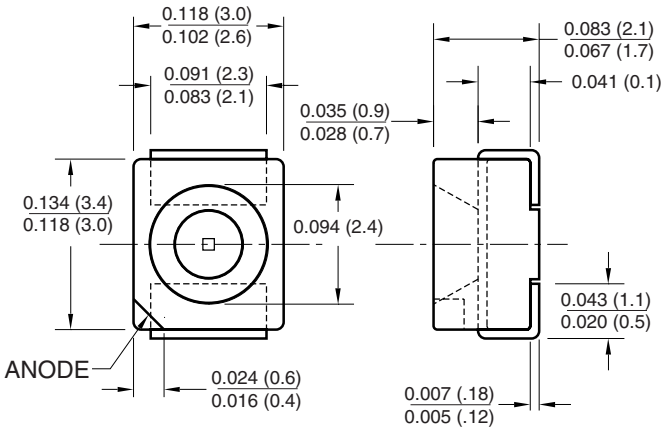
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes 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™

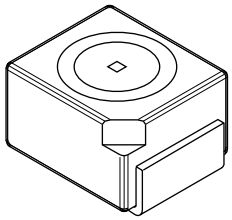
QEB421

SURFACE MOUNT INFRARED LIGHT EMITTING DIODE

PACKAGE DIMENSIONS



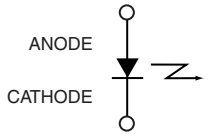
NOTES:
1. Dimensions are in inches (mm)
2. Tolerance of ± .010 (.25) on all non nominal dimensions unless otherwise specified.



FEATURES

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

SCHEMATIC



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

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

NOTES

1. Derate power dissipation linearly 2.4 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Pulse conditions; tp = 100 μs, T = 10 ms.

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

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

TYPICAL PERFORMANCE CURVES

Fig. 1 Normalized Radiant Intensity vs. Forward Current

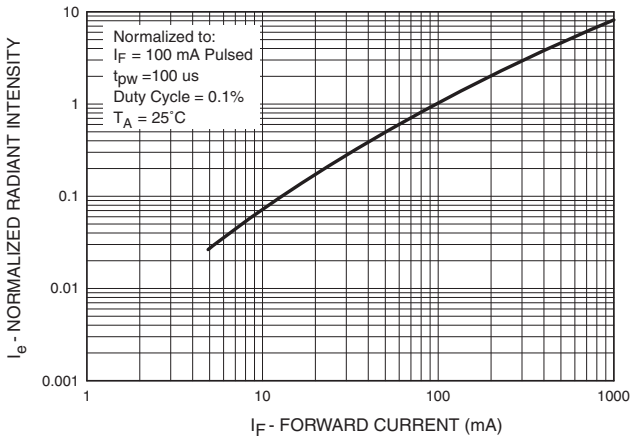


Fig. 2 Forward Current vs. Forward Voltage

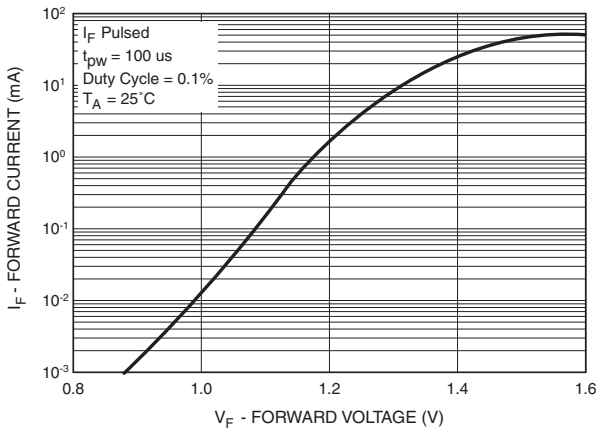


Fig.3 Radiation Diagram

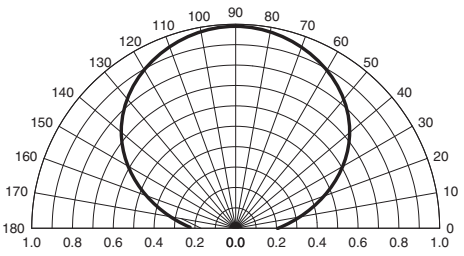


Fig. 4 Forward Voltage vs. Ambient Temperature

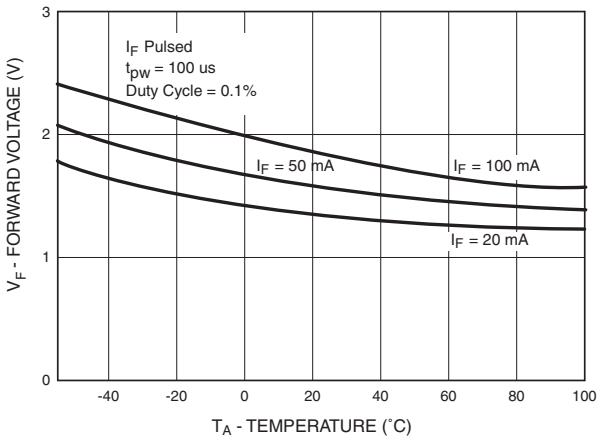


Fig. 5 Spectral Response (TBD)

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