

# Subminiature Plastic Infrared Emitting Diode

## QEB363

### Features

- T-3/4 (2 mm) Surface Mount Package
- Lead Form Options: Gullwing, Yoke, Z-Bend
- Narrow Emission Angle, 24°
- Wavelength = 940 nm, GaAs
- Clear Water Lens
- Matched Photosensor: QSB363
- High Radiant Intensity
- This is a Pb-Free and Halide Free Device

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
T <sub>OPR</sub>	Operating Temperature	-40 to +100	°C
T <sub>STG</sub>	Storage Temperature	-40 to +100	°C
T <sub>SOL-I</sub>	Soldering Temperature (Iron) (Notes 2, 3, 4)	240 for 5 s	°C
T <sub>SOL-F</sub>	Soldering Temperature (Flow) (Notes 2, 3)	260 for 10 s	°C
I <sub>F</sub>	Continuous Forward Current	50	mA
V <sub>R</sub>	Reverse Voltage	5	V
P <sub>D</sub>	Power Dissipation (Note 1)	100	mW

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

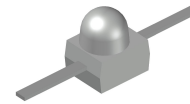
#### NOTES:

1. Derate power dissipation linearly 1.33 mW/°C above 25°C.
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6 mm) minimum from housing.

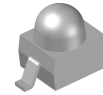
### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
λ <sub>P</sub>	Peak Emission Wavelength	I <sub>F</sub> = 100 mA	-	940	-	nm
Θ	Emission Angle	I <sub>F</sub> = 100 mA	-	±12	-	°
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 100 mA, t <sub>p</sub> = 20 ms	-	-	1.6	V
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = 5 V	-	-	100	μA
I <sub>e</sub>	Radiant Intensity	I <sub>F</sub> = 100 mA, t <sub>p</sub> = 20 ms	8	-	-	mW/sr
t <sub>r</sub>	Rise Time	I <sub>F</sub> = 100 mA	-	1	-	μs
t <sub>f</sub>	Fall Time	t <sub>p</sub> = 20 ms	-	1	-	μs

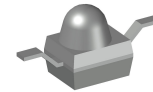
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



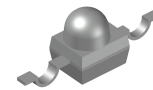
T-3/4, 2.50 × 2.00  
CASE 100CA



T-3/4, 2.50 × 2.00  
CASE 100CV

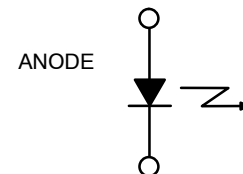


T-3/4, 2.50 × 2.00  
CASE 100CW



T-3/4 2.50 × 2.00  
CASE 100ED

### SCHEMATIC



### ORDERING INFORMATION

See detailed ordering and shipping information on page 3 of this data sheet.

TYPICAL PERFORMANCE CURVES

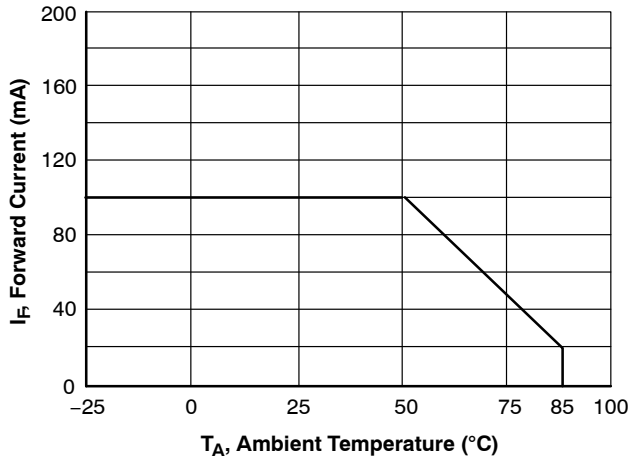


Figure 1. Maximum Forward Current vs. Temperature

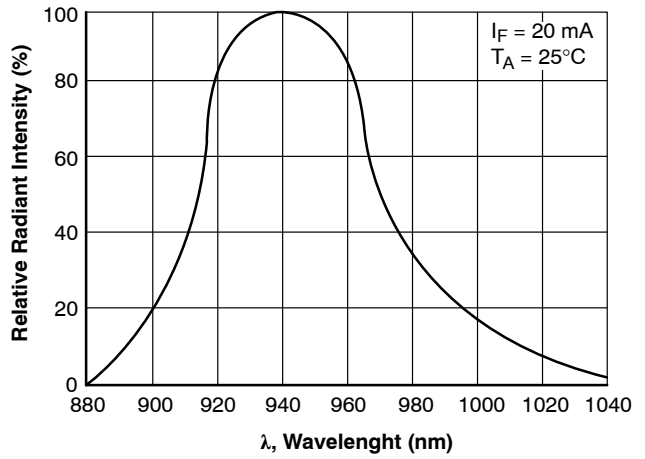


Figure 2. Relative Radiant Intensity vs. Wavelength

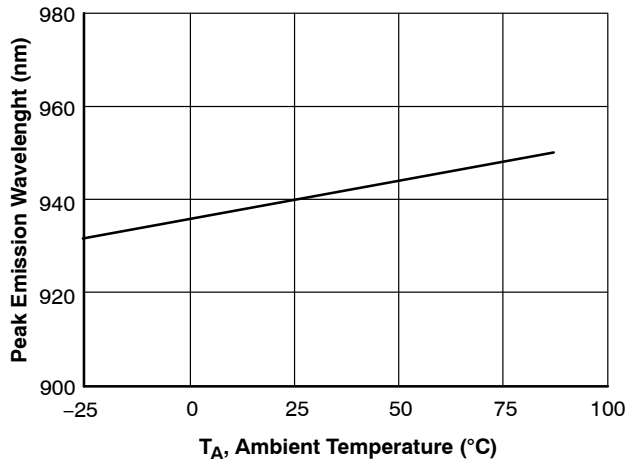


Figure 3. Peak Emission Wavelength vs. Ambient Temperature

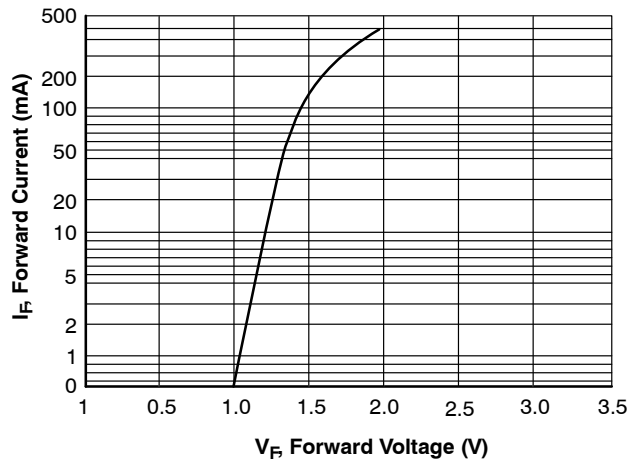


Figure 4. Forward Current vs. Forward Voltage

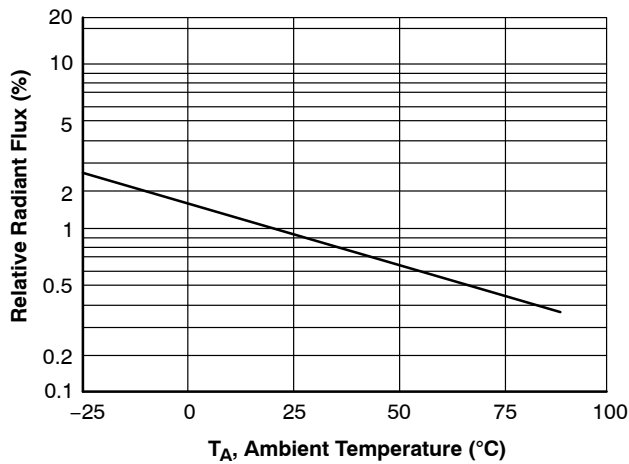


Figure 5. Transfer Characteristics

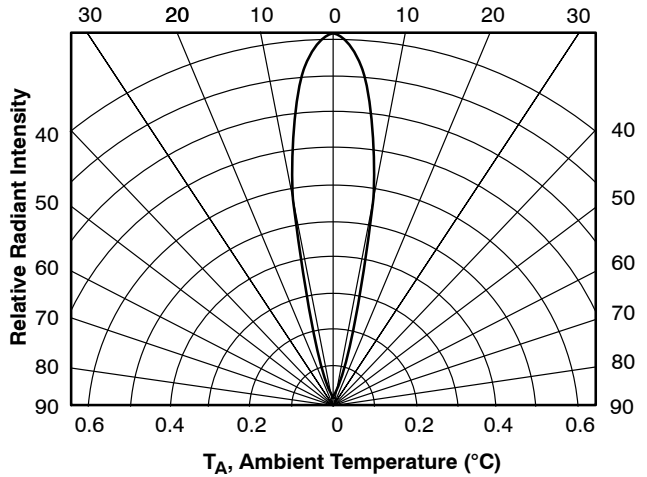


Figure 6. Relative Radiant Intensity vs. Angular Displacement

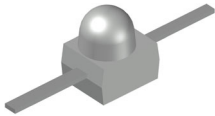
# QEB363

## ORDERING INFORMATION

Part Number	Package	Shipping <sup>†</sup>
QEB363	T-3/4, 2.50 × 2.00 (Case 100CA) (Pb-Free)	1000 Units / Bulk
QEB363GR	T-3/4, 2.50 × 2.00 (Case 100CV) (Pb-Free)	1000 / Tape & Reel
QEB363YR	T-3/4, 2.50 × 2.00 (Case 100ED) (Pb-Free)	1000 / Tape & Reel
QEB363ZR	T-3/4, 2.50 × 2.00 (Case 100CW) (Pb-Free)	1000 / Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](#).

**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

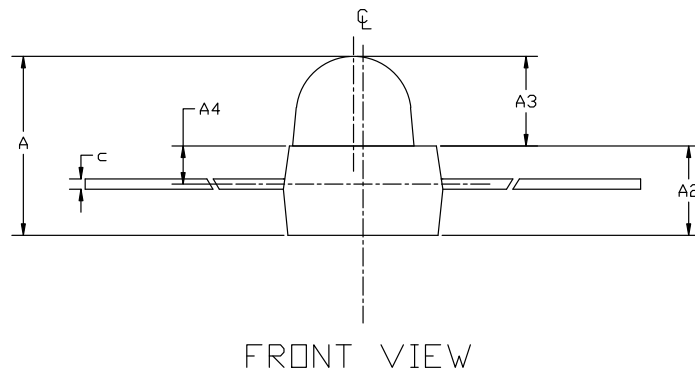
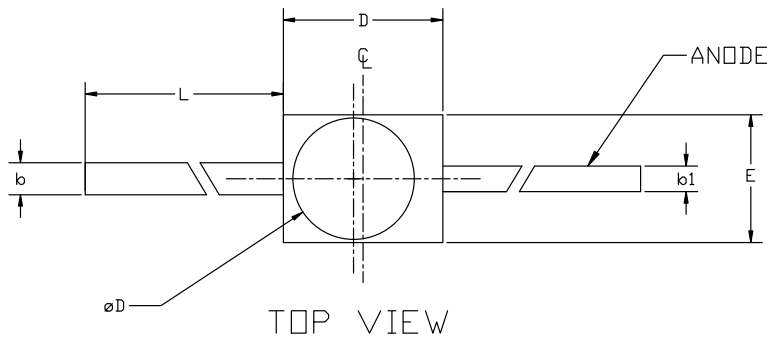


**T-3/4 2.50x2.00**  
**CASE 100CA**  
**ISSUE A**

DATE 14 SEP 2023

NOTES:

1. CONTROLLING DIMENSIONS: MILLIMETERS
2. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS.
3. 2MM LED



DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	2.50	2.70	2.90
A2	1.30	1.40	1.50
A3	1.30	1.40	1.50
A4	0.60 REF		
b	0.45	0.55	0.65
b1	0.35	0.45	0.55
c	0.10	0.15	0.25
D	2.30	2.50	2.70
E	1.80	2.00	2.20
L	7.00	---	---
$\phi D$	1.70	1.90	2.10

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# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

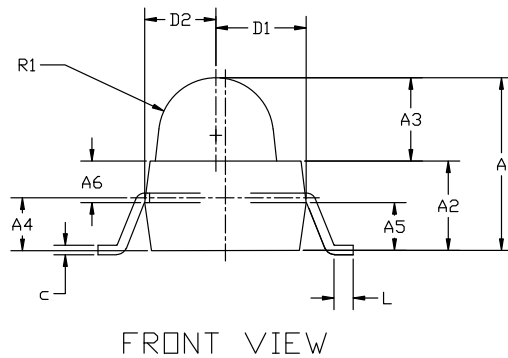
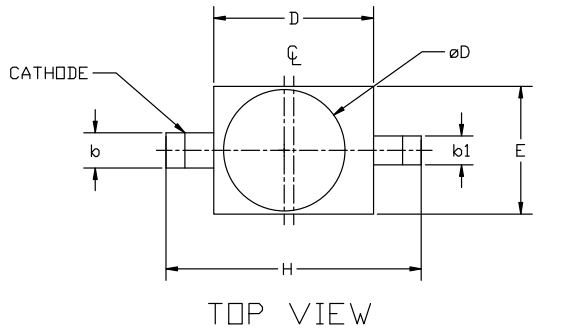


T-3/4, 2.50x2.00  
CASE 100CV  
ISSUE A

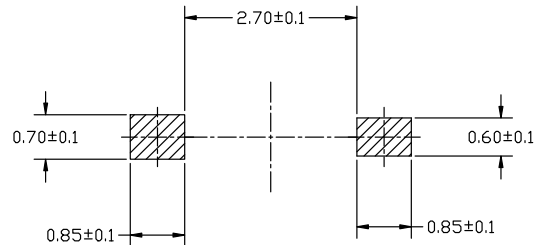
DATE 14 SEP 2023

NOTES:

1. CONTROLLING DIMENSIONS: MILLIMETERS
2. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS.
3. 2MM GULLWING LED



DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	2.50	2.70	2.90
A2	1.30	1.40	1.50
A3	1.20	1.30	1.40
A4	0.75	0.85	0.95
A5	0.65	0.75	0.85
A6	0.55	0.65	0.75
b	0.45	0.55	0.65
b1	0.35	0.45	0.55
c	0.10	0.15	0.20
D	2.30	2.50	2.70
D1	1.20	1.40	1.60
D2	0.90	1.10	1.30
E	1.80	2.00	2.20
H	3.80	4.00	4.20
L	0.20	0.30	0.40
∅D	1.70	1.90	2.10
R1	0.70	0.80	0.90



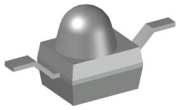
\* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

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# MECHANICAL CASE OUTLINE

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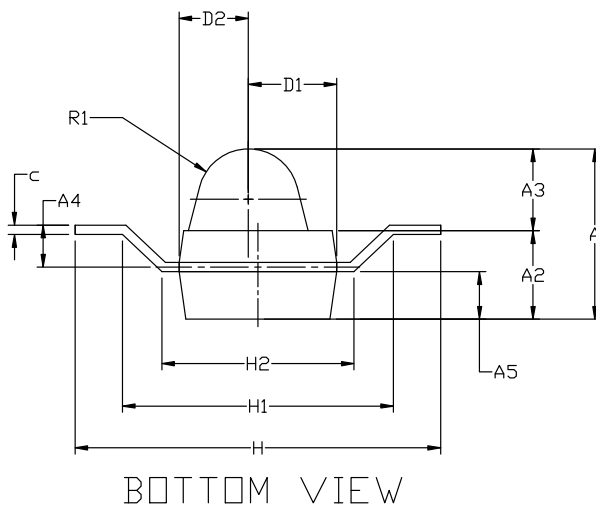
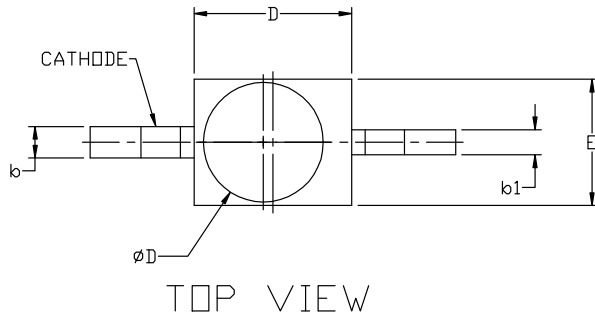


**T-3/4, 2.50x2.00**  
**CASE 100CW**  
**ISSUE A**

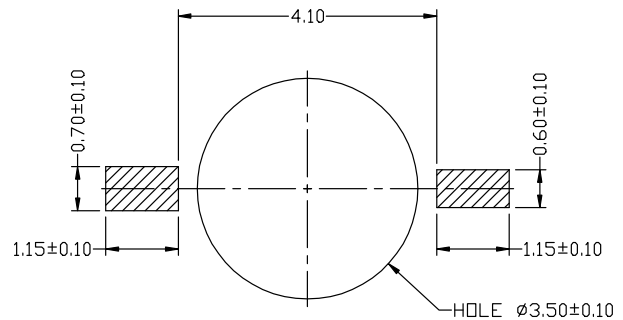
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**NOTES:**

1. CONTROLLING DIMENSIONS: MILLIMETERS
2. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS.
3. 2MM ZBEND LED.



DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	2.500	2.700	2.900
A2	1.300	1.400	1.500
A3	1.200	1.300	1.400
A4	0.550	0.650	0.750
A5	0.650	0.750	0.850
b	0.450	0.550	0.650
b1	0.350	0.450	0.550
c	0.100	0.150	0.200
D	2.300	2.500	2.700
D1	1.200	1.400	1.600
D2	0.900	1.100	1.300
E	1.800	2.000	2.200
H	5.600	5.800	6.000
H1	4.100	4.300	4.500
H2	2.850	3.050	3.250
∅D	1.700	1.900	2.100
R1	0.700	0.800	0.900



\*FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

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# MECHANICAL CASE OUTLINE

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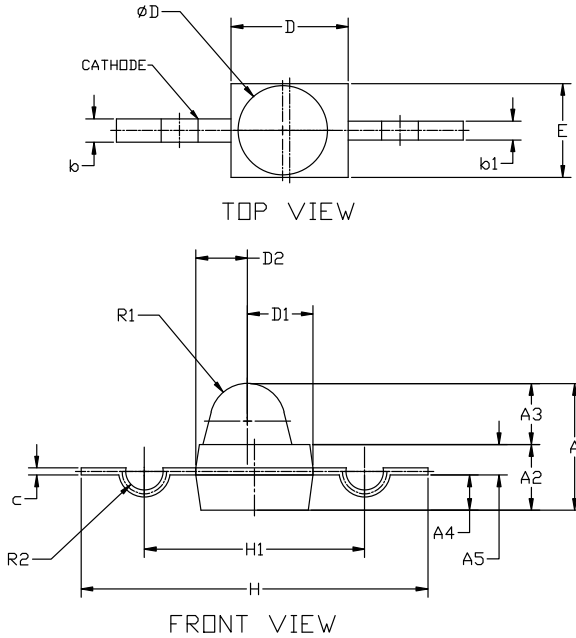


**T-3/4 2.50x2.00**  
**CASE 100ED**  
**ISSUE O**

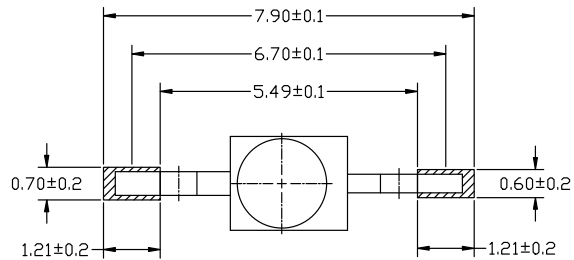
DATE 14 SEP 2023

**NOTES:**

1. CONTROLLING DIMENSIONS: MILLIMETERS
2. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS.
3. 2MM YOKE LED



DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	2.50	2.70	2.90
A2	1.30	1.40	1.50
A3	1.20	1.30	1.40
A4	0.65	0.75	0.85
b	0.45	0.55	0.65
b1	0.35	0.45	0.55
c	0.10	0.15	0.20
D	2.30	2.50	2.70
D1	1.20	1.40	1.60
D2	0.90	1.10	1.30
E	1.80	2.00	2.20
H	7.20	7.40	7.60
H1	4.50	4.70	4.90
$\phi D$	1.70	1.90	2.10
R1	0.70	0.80	0.90
R2	0.30	0.40	0.50



**RECOMMENDED MOUNTING FOOTPRINT**

\* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

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