

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

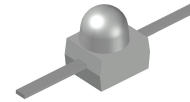
MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
T_{OPR}	Operating Temperature	-40 to +100	$^\circ\text{C}$
T_{STG}	Storage Temperature	-40 to +100	$^\circ\text{C}$
T_{SOL-I}	Soldering Temperature (Iron) (Notes 2, 3, 4)	240 for 5 s	$^\circ\text{C}$
T_{SOL-F}	Soldering Temperature (Flow) (Notes 2, 3)	260 for 10 s	$^\circ\text{C}$
I_F	Continuous Forward Current	50	mA
V_R	Reverse Voltage	5	V
P_D	Power Dissipation (Note 1)	100	mW

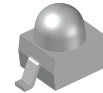
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

NOTES:

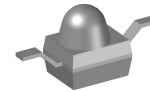
1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$ above 25°C .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6 mm) minimum from housing.



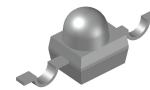
T-3/4, 2.50 × 2.00
CASE 100CA



T-3/4, 2.50 × 2.00
CASE 100CV

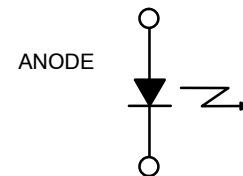


T-3/4, 2.50 × 2.00
CASE 100CW



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.

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

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
λ_P	Peak Emission Wavelength	$I_F = 100 \text{ mA}$	–	940	–	nm
Θ	Emission Angle	$I_F = 100 \text{ mA}$	–	± 12	–	$^\circ$
V_F	Forward Voltage	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	–	–	1.6	V
I_R	Reverse Current	$V_R = 5 \text{ V}$	–	–	100	μA
I_e	Radiant Intensity	$I_F = 100 \text{ mA}$, $t_p = 20 \text{ ms}$	8	–	–	mW/sr
t_r	Rise Time	$I_F = 100 \text{ mA}$	–	1	–	μs
t_f	Fall Time	$t_p = 20 \text{ ms}$	–	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.

TYPICAL PERFORMANCE CURVES

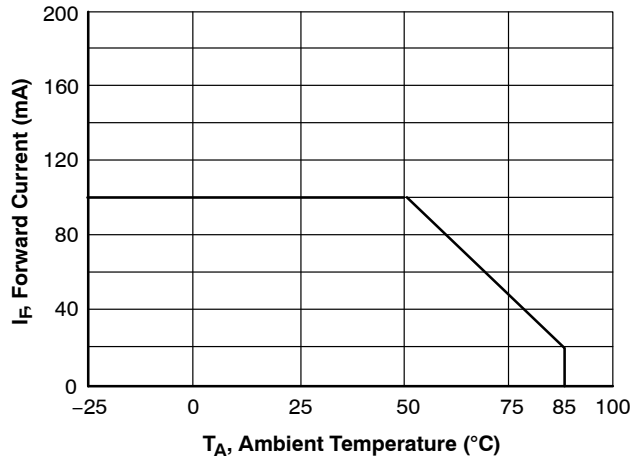


Figure 1. Maximum Forward Current vs. Temperature

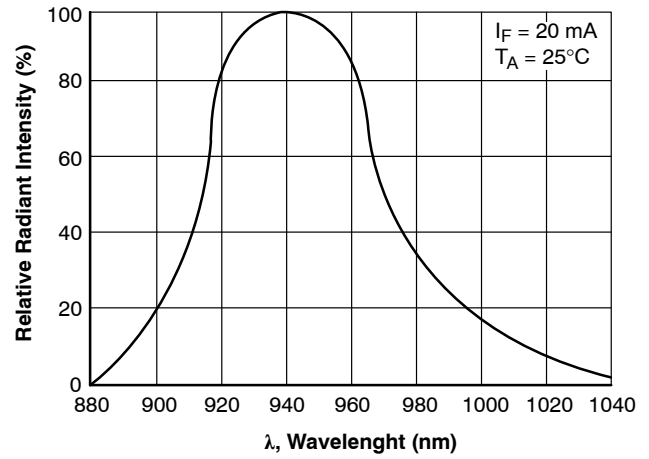


Figure 2. Relative Radiant Intensity vs. Wavelength

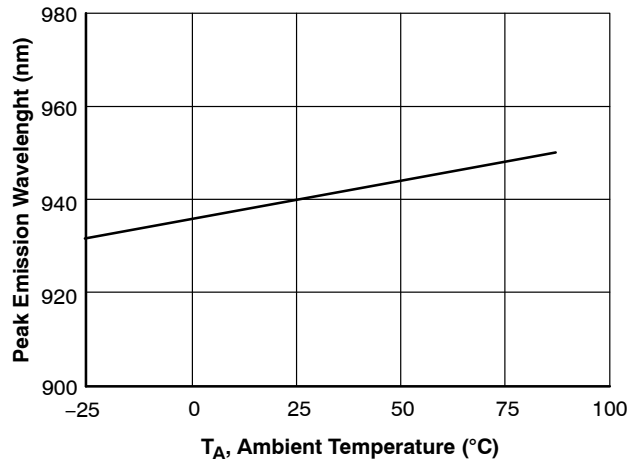


Figure 3. Peak Emission Wavelength vs. Ambient Temperature

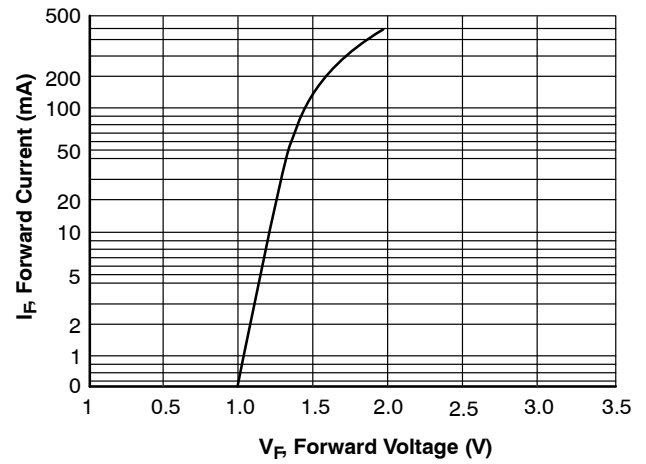


Figure 4. Forward Current vs. Forward Voltage

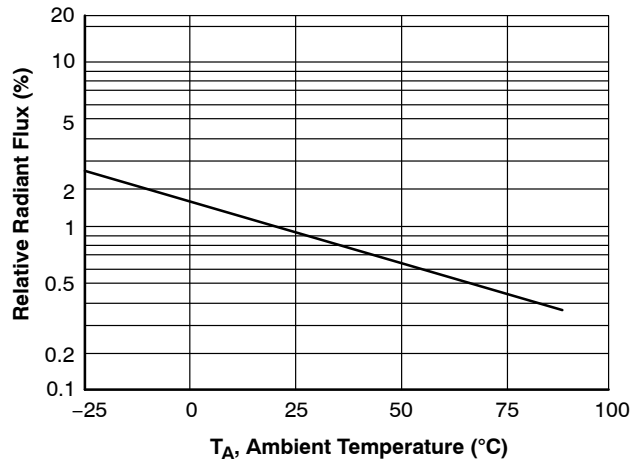


Figure 5. Transfer Characteristics

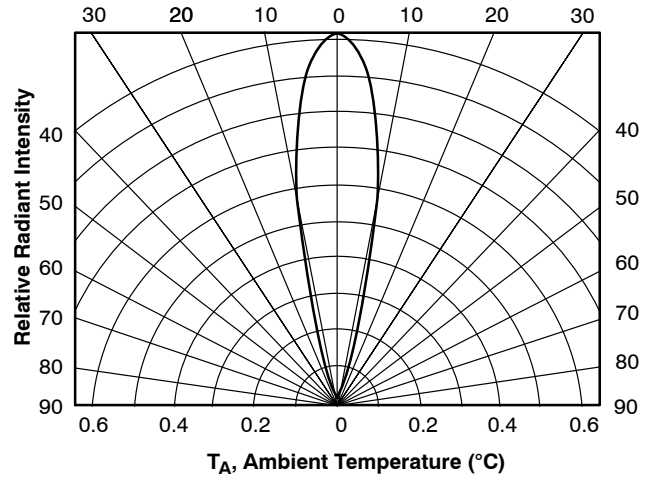


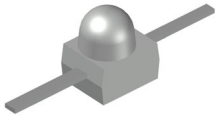
Figure 6. Relative Radiant Intensity vs. Angular Displacement

QEB363

ORDERING INFORMATION

Part Number	Package	Shipping [†]
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

[†]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](#).

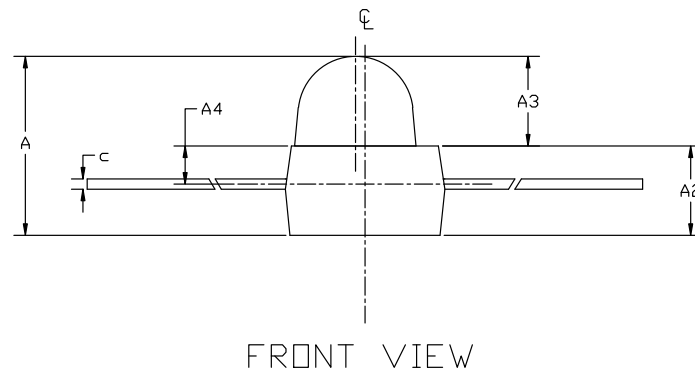
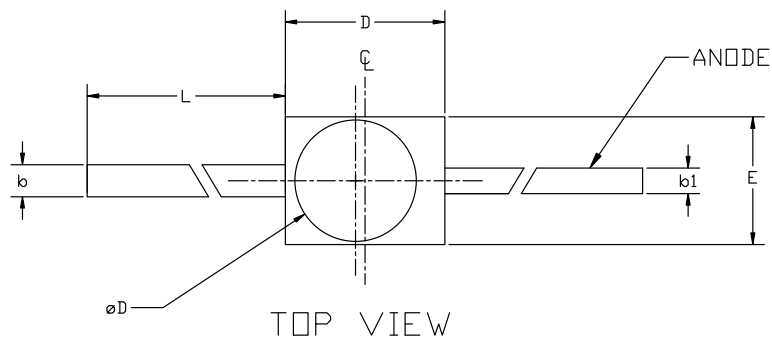


T-3/4 2.50x2.00
CASE 100CA
ISSUE A

DATE 14 SEP 2023

NOTES:

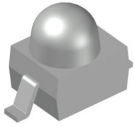
1. CONTROLLING DIMENSIONS: MILLIMETERS
2. DIMENSIONS DO NOT INCLUDE MOLD FLASH OR BURRS.
3. 2MM LED



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	---	---
øD	1.70	1.90	2.10

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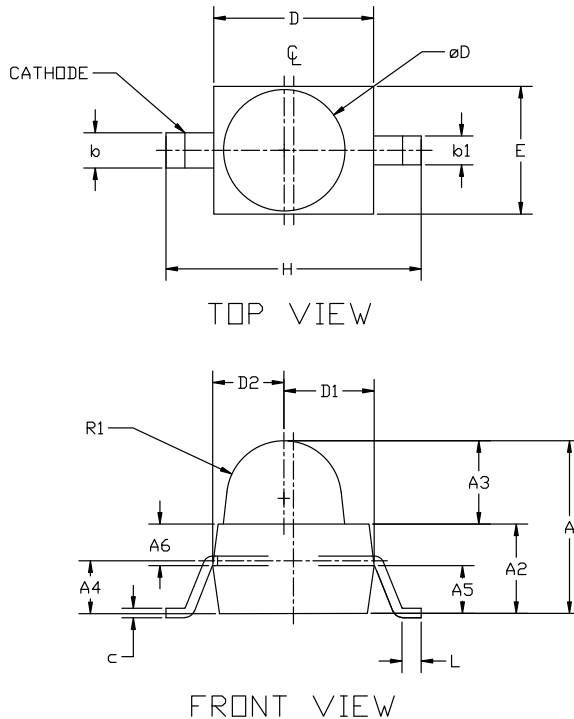


T-3/4, 2.50x2.00
CASE 100CV
ISSUE A

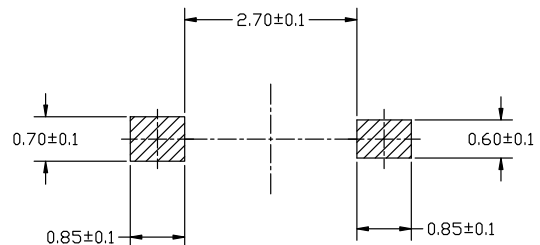
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NOTES:

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
ØD	1.70	1.90	2.10
R1	0.70	0.80	0.90

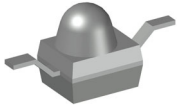


LAND PATTERN
RECOMMENDATION

* 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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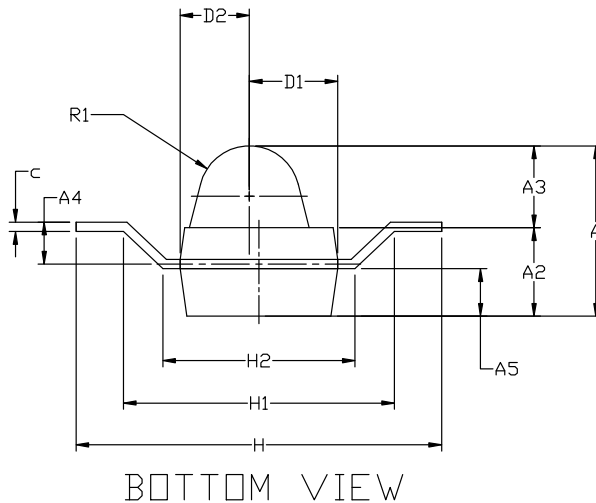
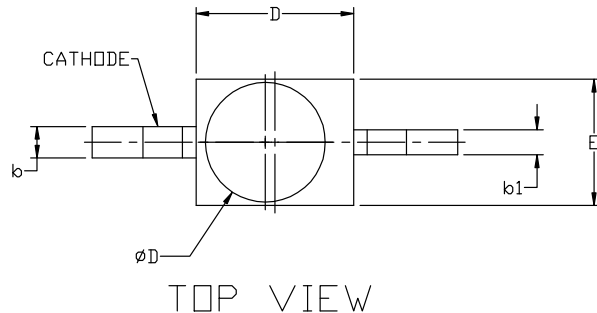


T-3/4, 2.50x2.00
CASE 100CW
ISSUE A

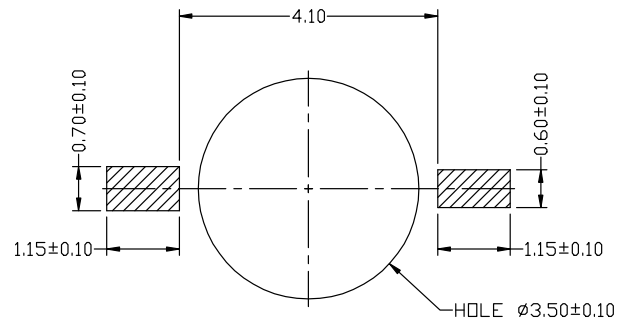
DATE 14 SEP 2023

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
ØD	1.700	1.900	2.100
R1	0.700	0.800	0.900

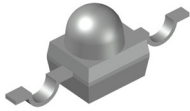


RECOMMENDED MOUNTING FOOTPRINT*

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

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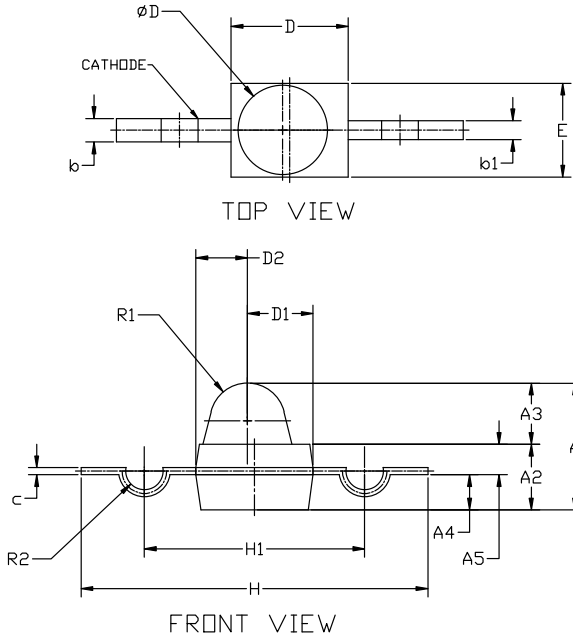


T-3/4 2.50x2.00
CASE 100ED
ISSUE O

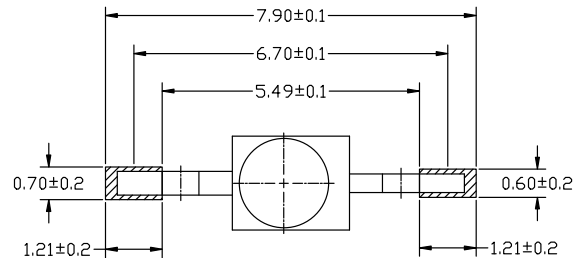
DATE 14 SEP 2023

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
ØD	1.70	1.90	2.10
R1	0.70	0.80	0.90
R2	0.30	0.40	0.50



RECOMMENDED
MOUNTING FOOTPRINT

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