

Plastic Silicon Photodiode QSD2030F

Features

- PIN Photodiode
- Package Type: T-1 3/4 (5 mm Lens Diameter)
- Wide Reception Angle, 40°
- Daylight Filter
- Package Material and Color: Black Epoxy
- High Sensitivity
- Peak Sensitivity $\lambda = 880 \text{ nm}$
- Radiant Sensitive Area: 1.245 mm x 1.245 mm
- This is a Pb-Free Device

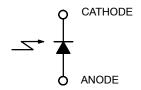
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
T _{OPR}	Operating Temperature	-40 to +100	°C
T _{STG}	Storage Temperature	-40 to +100	°C
T _{SOL-I}	Soldering Temperature (Iron) (Note 1), (Note 2), (Note 3)	240 for 5 s	ô
T _{SOL-F}	Soldering Temperature (Flow) (Note 1), (Note 2)	260 for 10 s	°C
V_{BR}	Reverse Breakdown Voltage	50	V
P_{D}	Power Dissipation (Note 4)	150	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.

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

SCHEMATIC





T-1 3/4, 5MM PHOTODIODE CASE 100CF

ORDERING INFORMATION

Device	Package	Shipping
QSD2030F	T-1 3/4, 5MM PHOTODIODE (Pb-Free)	250 / Bulk Bag

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Symbol	Parameter	Test Conditions	Min	Тур	Max	Unit
λ_{PS}	Peak Sensitivity Wavelength		_	880	-	nm
λ_{SR}	Wavelength Sensitivity Range		700	_	1100	nm
Θ	Reception Angle		_	±20	_	٥
V _F	Forward Voltage	I _F = 80 mA	_	1.3	_	V
I _D	Reverse Dark Current	V _R = 10 V, Ee = 0	_	_	10	nA
ΙL	Reverse Light Current	Ee = 0.5 mW/cm ² , V_R = 5 V, λ = 950 nm	15	25	_	μΑ
Vo	Open Circuit Voltage	Ee = 0.5 mW/cm ² , λ = 880 nm	_	420	_	mV
TC _V	Temperature Coefficient of V _O		_	+0.6	_	mV / K
I _{SC}	Short Circuit Current	Ee = 0.5 mW/cm ² , λ = 880 nm	_	50	-	μΑ
TCI	Temperature Coefficient of I _{SC}		_	+0.3	_	% / K
С	Capacitance	V _R = 0, f = 1 MHz, Ee = 0	_	15	_	pF
t _r	Rise Time	$V_R = 5 \text{ V}, R_L = 50 \Omega, \lambda = 950 \text{ nm}$	-	5	-	ns
t _f	Fall Time		_	5	_	1

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.

QSD2030F

TYPICAL PERFORMANCE CHARACTERISTICS

ID, DARK CURENT (nA)

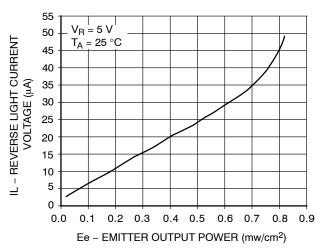


Figure 1. Reverse Light Current vs. Emitter
Output Power

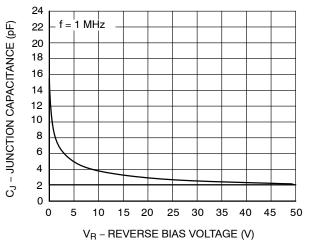


Figure 3. Capacitance vs. Reverse Voltage

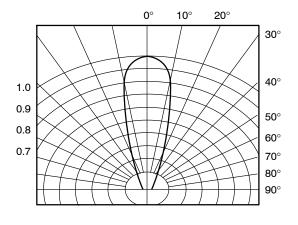


Figure 2. Angular Response

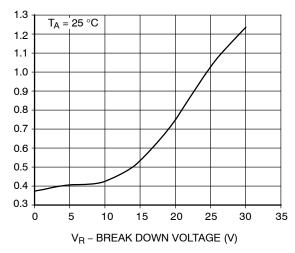
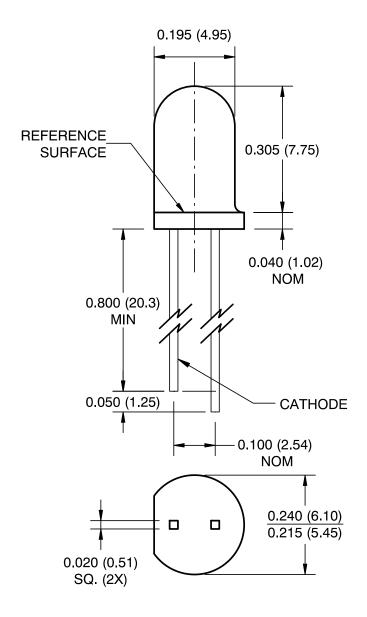


Figure 4. Dark Current vs. Reverse Voltage

T-1 3/4, 5MM PHOTODIODE CASE 100CF ISSUE O

DATE 30 NOV 2016



Notes:

- 1. Dimensions for all drawings are in inches (mm).
- 2. Tolerance of ±0.010 (0.25) on all non-nominal dimensions unless otherwise specified.

DOCUMENT NUMBER:	98AON13431G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.		
DESCRIPTION:	T-1 3/4, 5MM PHOTODIODE		PAGE 1 OF 1	

ON Semiconductor and a retrademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, Onsemi, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "onsemi" or its affiliates and/or subsidiaries in the United States and/or other countries. onsemi owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of onsemi's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. Onsemi reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and onsemi makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using onsemi products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by onsemi. "Typical" parameters which may be provided in onsemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. onsemi does not convey any license under any of its intellectual property rights nor the rights of others. onsemi products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA class 3 medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

 $\textbf{Technical Library:} \ \underline{www.onsemi.com/design/resources/technical-documentation}$

onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales