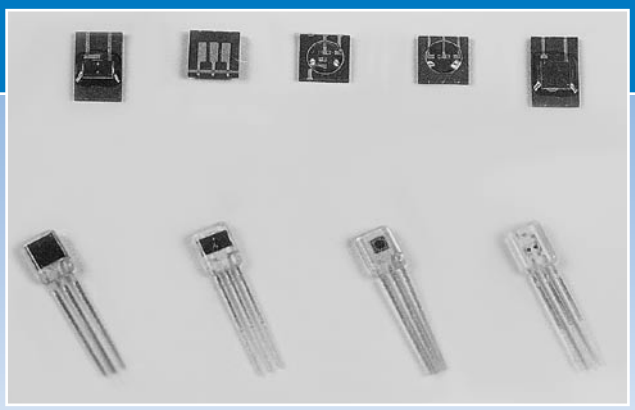
Dual Emitter / Matching Photodector Series

Molded Lead Frame and Leadless Ceramic Substrate

The Dual LED series consists of a 660nm (red) LED and a companion IR LED such as 880/ 895, 905, or 940nm. They are widely used for ratiometeric measurements such as medical analytical and monitoring devices. They can also be used in applications requiring a low cost Bi-Wavelength light source. Two types of pin configurations are available: 1.) three leads with one common anode or cathode, or 2.) two leads parallel back-to-back connection. They are available in two types of packaging. Clear lead frame molded side looker, and leadless ceramic substrate.

The matching photodectors' responses are optimized for maximum responsivity at 660nm as well as near IR wavelengths. They exhibit low capacitance and low dark currents and are available in three different active area sizes in the same two types of packaging as the dual emitters: Clear lead frame molded side looker and leadless ceramic substrate.



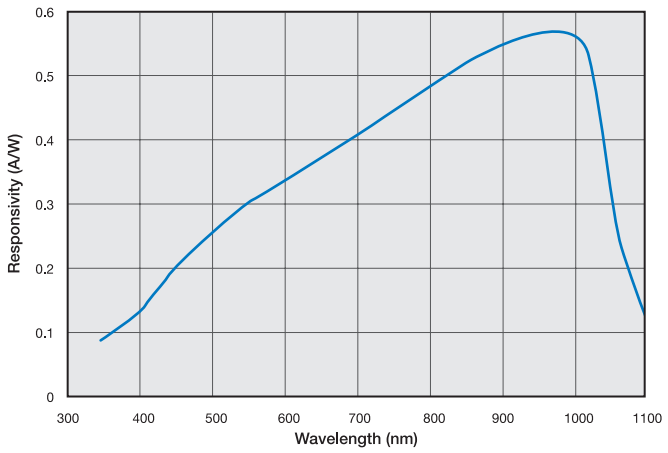
APPLICATIONS

- SpO2
- Blood analysis
- Medical Instrumentation
- Ratiometric Instruments

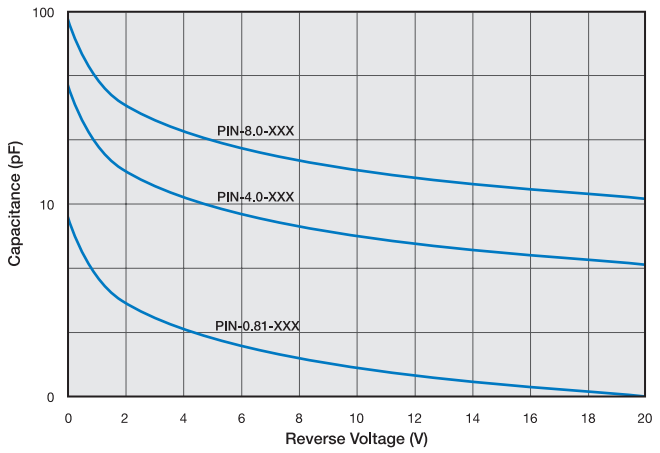
FEATURES

- Leadless ceramic Substrate
- Lead Frame Molded Packages
- Two and Three Lead Designs
- Bi-Wavelengths LEDs
- Matching Detector Response

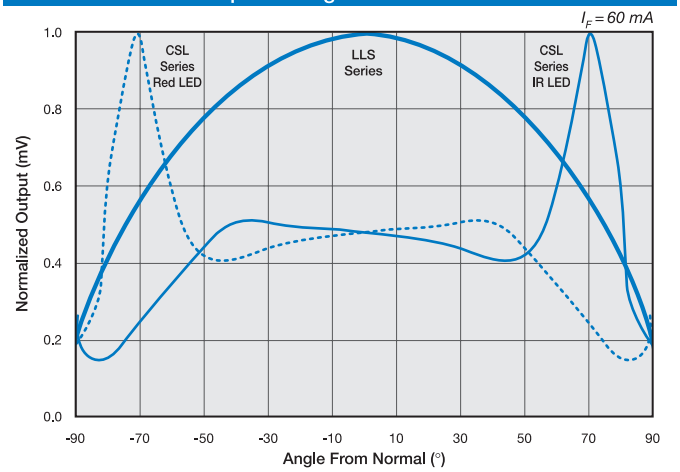
Typical Spectral Response



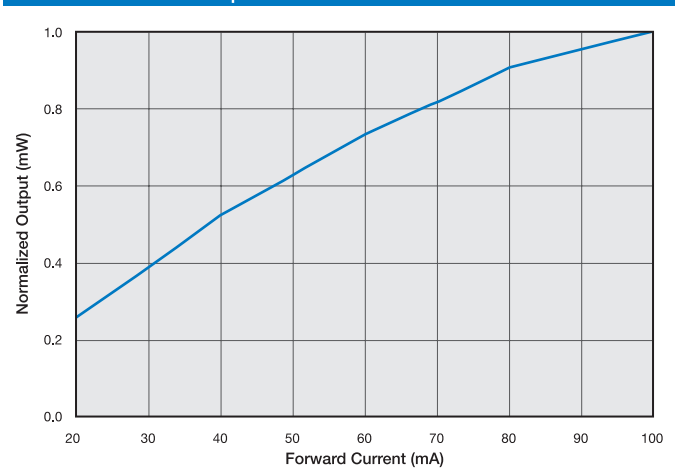
Typical Capacitance vs Reverse Voltage



Normalized LED Output vs Angular Distribution



Normalized LED Output vs Forward Current



Dual Emitter / Matching Photodector Series

Molded Lead Frame and Leadless Ceramic Substrate

Model Number	Active Area		Spectral Range	Responsivity		Capacitance	Dark Current (nA)	Max. Reverse Voltage	Operating Temp.	Storage Temp.	Package Style
	Area mm^2	Dimensions mm	nm	A/ W		pF	-10 V	V	℃	℃	
				660nm	900nm	-10V	typ.	10µA			
Photodiode Characteristics											
PIN-0.81-LLS	0.81	1.02ϕ	350 - 1100	0.33	0.55	2.0	2	20	-25 ~ +85	-40 ~ +100C	62 / Leadless Cermic
PIN-0.81-CSL											60 / Molded Lead Frame
PIN-4.0-LLS	3.9	2.31 x 1.68				10	5				62 / Leadless Cermic
PIN-4.0-CSL											60 / Molded Lead Frame
PIN-8.0-LLS	8.4	2.9 Sq.				25	10				62 / Leadless Cermic
PIN-8.0-CSL											60 / Molded Lead Frame

For mechanical drawings and pin locations, please refer to pages 58 to 69.

Model Number	LED's Used		Package Style ¶	Pin Configuration	Operating Temperature	Storage Teperature
	nm				˚C	˚C
Dual Emitter Combinations						
DLED-660/880-LLS-2	660	880	64 / Leadless Ceramic	2 Leads / Back to Back*	-25 ~ +85	-40 ~ +80
DLED-660/895-LLS-2		895				
DLED-660/905-LLS-2		905				
DLED-660/905-LLS-3		905		3 Leads / Common Anode		
DLED-660/940-LLS-3		940				
DLED-660/880-CSL-2		880	63 / Side Locker Plastic	2 Leads / Back to Back*		
DLED-660/895-CSL-2		895				
DLED-660/905-CSL-2		905				
DLED-660/905-CSL-3		905		3 Leads / Common Anode		
DLED-660/940-CSL-3		940				

* In Back-to-Back configuration, the LED's are connected in parallel.

LED	Peak Wavelength	Radiant Flux	Spectral Bandwidth	Forward Voltage	Reverse Voltage
	nm	mW	nm	V	V
	i_f=20mA	i_f=20mA	i_f=20mA FWHM	i_f=20mA	i_f=-20mA
	typ.	typ.	typ.	max.	max.
LED Characteristics					
660nm	660	1.8	25	2.4	5
880nm	880	1.5	80	2.0	
895nm	895	2.0	50	1.7	
905nm	905				
935nm	935	1.5		1.5	
940nm	940				

For mechanical drawings, please refer to pages 58 thru 69.

Mechanical Drawings

Mechanical Specifications and Die Topography

1. Parameter Definitions:

A = Distance from top of chip to top of glass.
a = Photodiode Anode.
B = Distance from top of glass to bottom of case.
c = Photodiode Cathode
(Note: cathode is common to case in metal package products unless otherwise noted).
W = Window Diameter.
F.O.V. = Filed of View (see definition below).

2. Dimensions are in inches (1 inch = 25.4 mm).

3. Pin diameters are 0.018 ± 0.002" unless otherwise specified.

4. Tolerances (unless otherwise noted)

General: 0.XX ±0.01"
0.XXX ±0.005"
Chip Centering: ±0.010"
Dimension 'A': ±0.015"

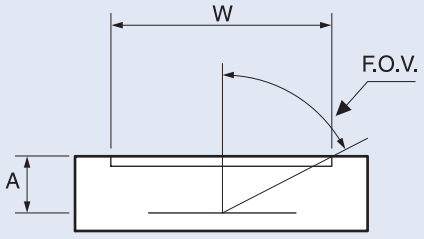
5. Windows

All **'UV'** Enhanced products are provided with QUARTZ glass windows, 0.027 ± 0.002" thick.

All **'XUV'** products are provided with removable windows.

All **'DLS'** PSD products are provided with A/R coated glass windows.

All **'FIL'** photoconductive and photovoltaic products are epoxy filled instead of glass windows.



$$F.O.V. = \tan^{-1}\left(\frac{W}{2A}\right)$$

For Further Assistance
Please Call One of Our Experienced
Sales and Applications Engineers

310-978-0516

- Or -
On the Internet at

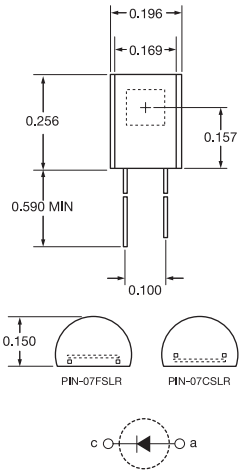
www.osioptoelectronics.com

All units in inches.

56 Lead Frame Molded

Products:

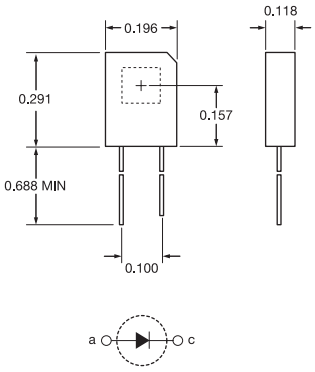
PIN-07SLR
PIN-07FSLR



57 Lead Frame Molded

Products:

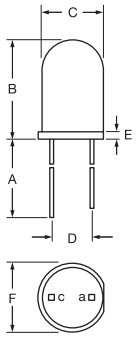
PIN-07CSL
PIN-07FSL



58 Lead Frame Molded

Products:

PIN-01CT3
PIN-01FT3
PIN-01CT5
PIN-01FT5



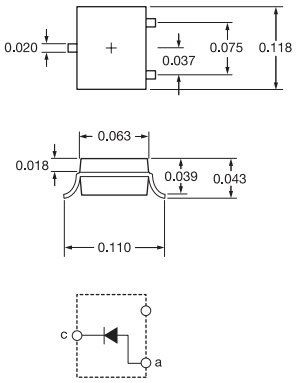
Dimensions

P/N	A	B	C	D	E	F
PIN-01CT3 PIN-01FT3	0.650	0.213	0.118	0.090	0.031	0.154
PIN-01CT5 PIN-01FT5	1.040	0.343	0.197	0.100	0.039	0.228

59 Lead Frame Molded

Products:

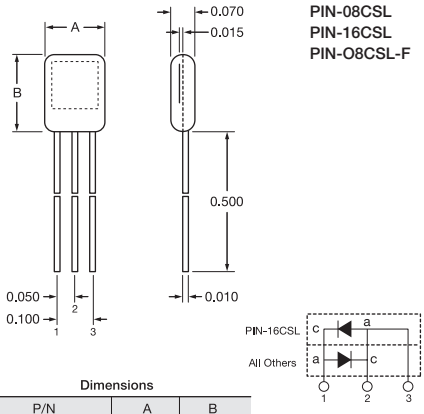
PIN-0.1CJ
PIN-01FJ



60 Lead Frame Molded

Products:

PIN-0.81CSL
PIN-4.0CSL
PIN-8.0CSL
PIN-08CSL
PIN-16CSL
PIN-O8CSL-F



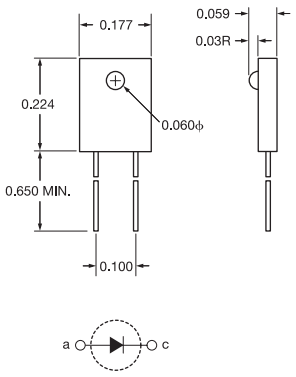
Dimensions

P/N	A	B
PIN-16CSL	0.215	0.264
All Others	0.170	0.220

61 Lead Frame Molded

Products:

PIN-01CLSL
PIN-01FLSL



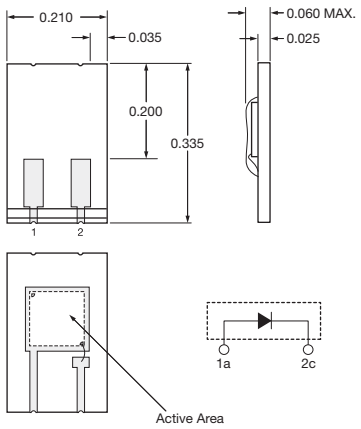
Mechanical Specifications

All units in inches.

62 Leadless Ceramic

Products:

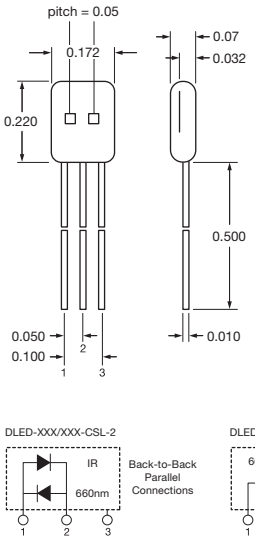
PIN-0.81-LLS
PIN-4.0-LLS
PIN-8.0-LLS



63 Lead Frame Molded

Products:

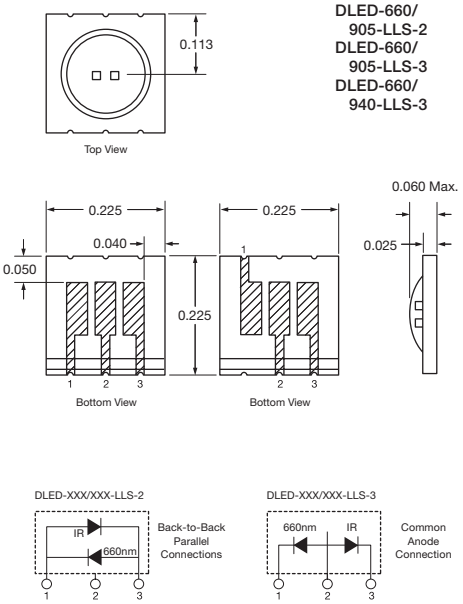
DLED-660/880-CSL-2
DLED-660/895-CSL-2
DLED-660/905-CSL-2
DLED-660/905-CSL-3
DLED-660/940-CSL-3



64 Leadless Ceramic

Products:

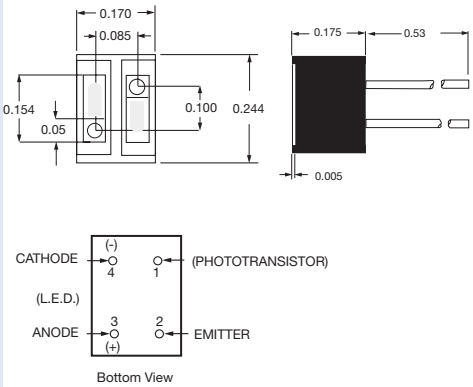
DLED-660/880-LLS-2
DLED-660/895-LLS-2
DLED-660/905-LLS-2
DLED-660/905-LLS-3
DLED-660/940-LLS-3



65 Plastic Molded

Products:

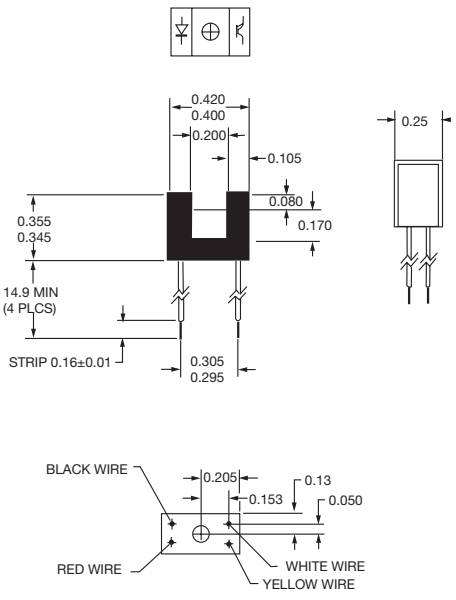
OS-P085



66 Plastic Molded

Products:

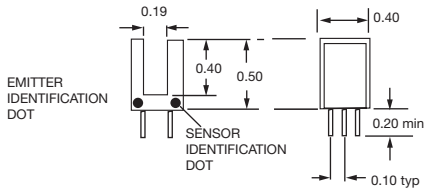
OS-W200A
OS-W200B

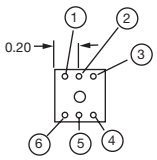


67 Plastic Molded

Products:

OS-P-190





Pinout

PIN	Description
1	Emitter Cathode
2	Emitter Anode
3	Emitter Anode
4	Phototransistor Collector
5	Phototransistor Emitter
6	Phototransistor Emitter