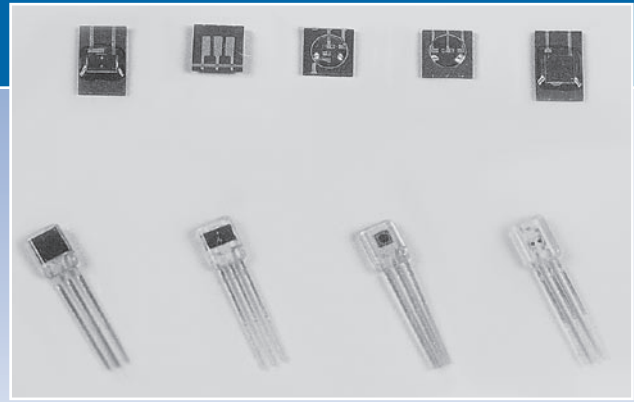


■ Dual Emitter / Matching Photodiode Series

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 ratiometric 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 photodiodes' 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.



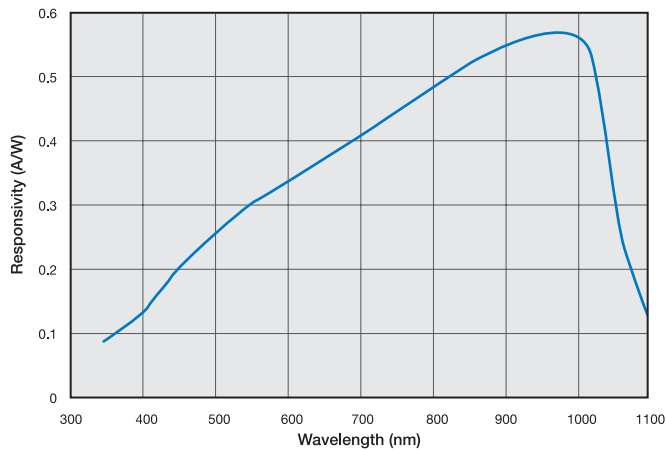
■ APPLICATIONS

- SpO2
- Blood analysis
- Medical Instrumentation
- Ratiometric Instruments

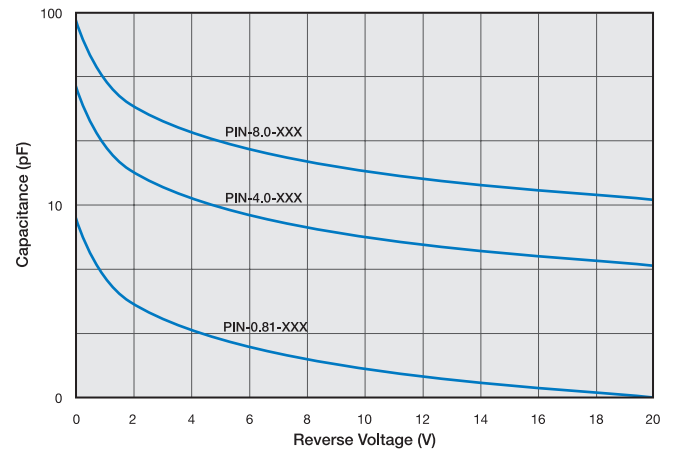
■ FEATURES

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

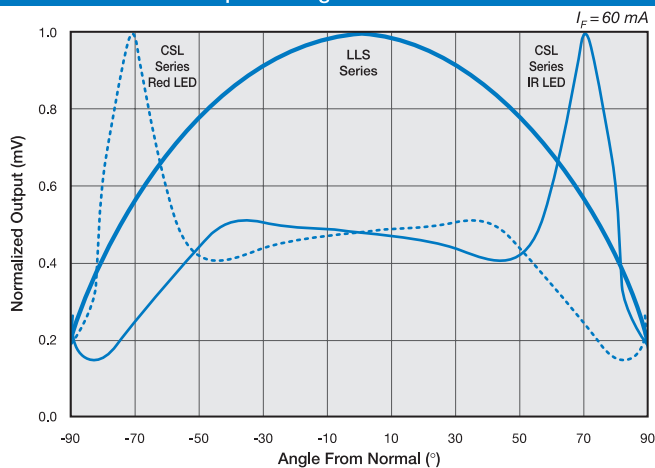
■ Typical Spectral Response



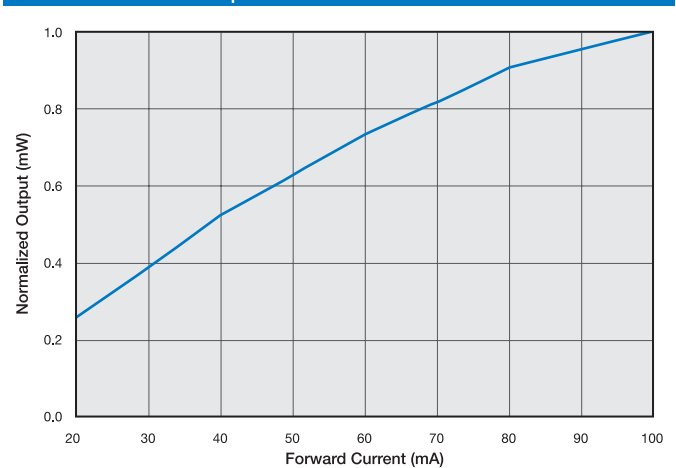
■ Typical Capacitance vs Reverse Voltage



■ Normalized LED Output vs Angular Distribution



■ Normalized LED Output vs Forward Current



■ Dual Emitter / Matching Photodiode 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	°C	°C							
				660nm	900nm	-10V	min.	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 Ceramic						
PIN-0.81-CSL											60 / Molded Lead Frame						
PIN-4.0-LLS	3.9	2.31 x 1.68				10	5				20	5	10	20	-25 ~ +85	-40 ~ +100C	62 / Leadless Ceramic
PIN-4.0-CSL																	60 / Molded Lead Frame
PIN-8.0-LLS	8.4	2.9 Sq.				350 - 1100	0.33				0.55	25	10	20	-25 ~ +85	-40 ~ +100C	62 / Leadless Ceramic
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 Temperature
	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		2 Leads / Common Anode		
DLED-660/940-LLS-3		940	63 / Side Locker Plastic	2 Leads / Back to Back*		
DLED-660/880-CSL-2		880				
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 _r =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.