

SMPX600 Series of Hybrid Emitters

The SMPX600 series is a range of LED emitters incorporating an internal monitor photodiode providing a controlled and stabilised light source.

Features

The photodiode is close coupled to an internal transimpedance amplifier giving a voltage output that increases proportionately with LED light output. This can be used with a variety of external circuit configurations, allowing current to the LED to be controlled and adjusted as required. A variety of LED wavelengths are available to suit different applications. Custom wavelengths are available on request. The device operates from a single rail supply of +4 to +18V.

Applications

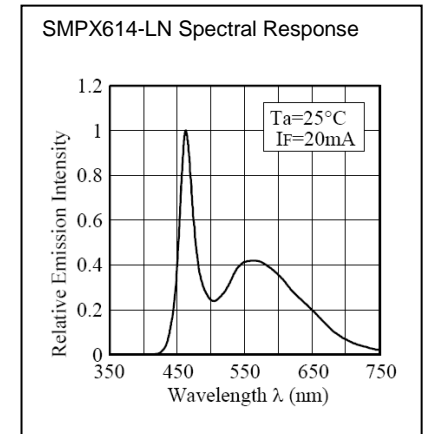
These devices are especially suited to applications where a highly consistent light output is required:

- Medical instruments
- Document verification
- Process control
- Position and proximity detectors
- Pollution/environmental monitoring
- Smoke/Gas detectors
- Complements SMPX500 range of Detectors
- Custom Wavelengths available

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Emitters		Units	Green	Orange	IR (880nm)	White	IR (953nm)
			SMPX611-LN	SMPX612-LN	SMPX613-LN	SMPX614-LN	SMPX616-LN
Parameter							
DC Supply Voltage (Single Rail)		V	+4 to +18	+4 to +18	+4 to +18	+4 to +18	+4 to +18
Quiescent Current		mA	4	4	4	4	4
DC Forward Current		mA	40	50	30	30	30
Peak LED Current (10% Duty cycle, 1kHz)		mA	100	100	100	100	100
Spectral Half Width		nm	15	16	50		
Luminous Intensity (bare chip)	Min	mcd	50	350		310	
	Typical	mcd	55		0.7mW	370	1.3mW
LED Forward Voltage (@20mA)	Typical	V	2.1	2.1	1.3	3.6	1.2
	Max	V	2.2	2.5	1.5	4	1.3
Dominant Wavelength	Min	nm	567	620	-	See plot of spectrum	-
	Average	nm	569		-		-
	Max	nm	570	625	-		-
Peak Wavelength	Min	nm					
	Average	nm	571	630	880		953
	Max	nm					
Monitor Output Voltage @20mA		V	1.0	2.6	1.1	3.5	1.2
Monitor Frequency Response (-3db point)		kHz	240	800	>1MHz	360	>1MHz
Monitor Output Current	Sink	mA	1	1	1	1	1
	Source	mA	10	10	10	10	10
Temperature Limits	Operating	°C	-20 to +80	-20 to +80	-20 to +80	-20 to +80	-20 to +80
	Storage	°C	-30 to +100	-30 to +100	-30 to +100	-30 to +100	-30 to +100
Pin Configuration - Circuit Diagram *			1	1	2	1	1

Typical Characteristics at 25°C
Other Wavelength's available

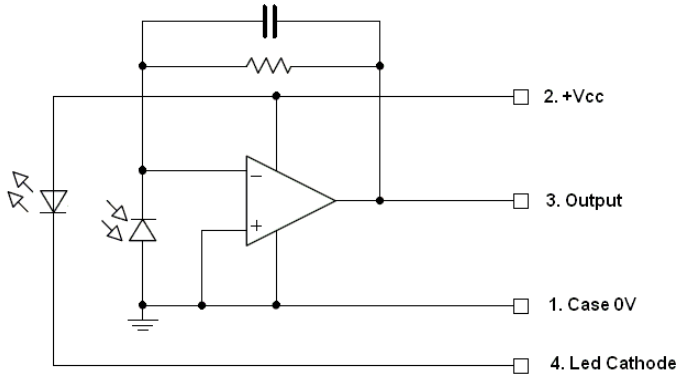


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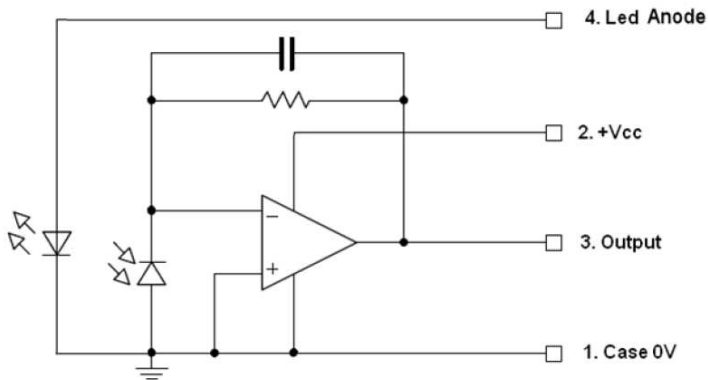
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Circuit Diagram 1 - SMPX611-LN, SMPX612-LN, SMPX614-LN & SMPX616-LN

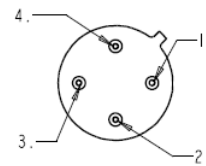
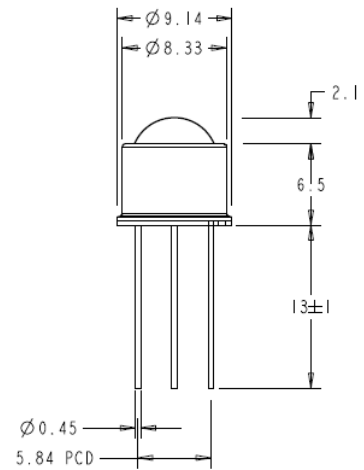


Circuit Diagram 2 – SMPX613-LN



Mechanical

All dimensions in mm



Bottom View