

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

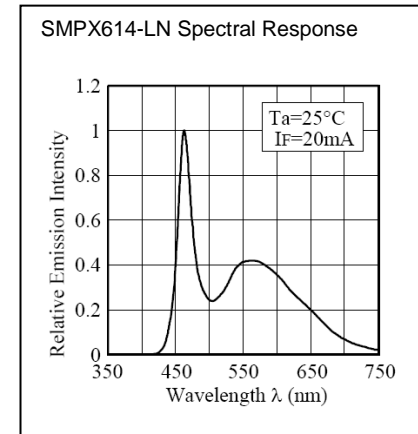
These devices are especially suited to applications where a highly consistent light output is required:

- 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			Orange	IR (880nm)	White	IR (953nm)	Green
			SMPX612-LN	SMPX613-LN	SMPX614-LN	SMPX616-LN	SMPX617-LN
Parameter	Units						
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		50	30	30	30	30
Peak LED Current (10% Duty cycle, 1kHz)	mA		100	100	100	100	100
Spectral Half Width	nm		16	50			13
Luminous Intensity (bare chip)	Min	mcd	350		310		35
	Typical	mcd		0.7mW	370	1.3mW	
LED Forward Voltage (@20mA)	Typical	V	2.1	1.3	3.6	1.2	2.0
	Max	V	2.5	1.5	4	1.3	2.3
Dominant Wavelength	Min	nm	620	-	See plot of spectrum	-	558
	Typical	nm		-		-	
	Max	nm	625	-		-	565
Peak Wavelength	Min	nm				953	
	Typical	nm	630	880			560
	Max	nm					
Monitor Output Voltage @20mA	V		2.6	1.1	3.5	1.2	0.5
Monitor Frequency Response (-3db point)	kHz		800	>1MHz	360	>1MHz	240
Monitor Output Current	Sink	mA	1.0	1.0	1.0	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	2	1	1	1

Typical Characteristics at 25°C
Other Wavelength's available

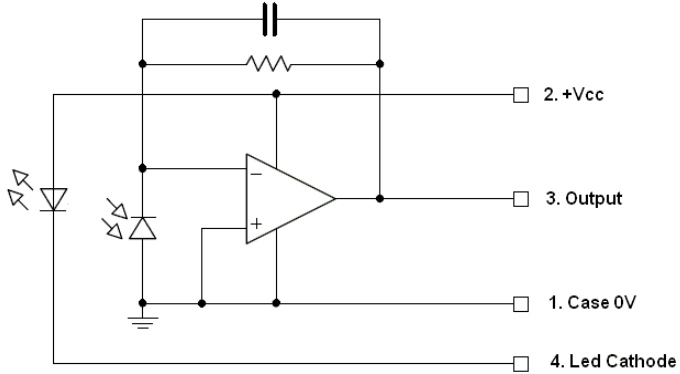


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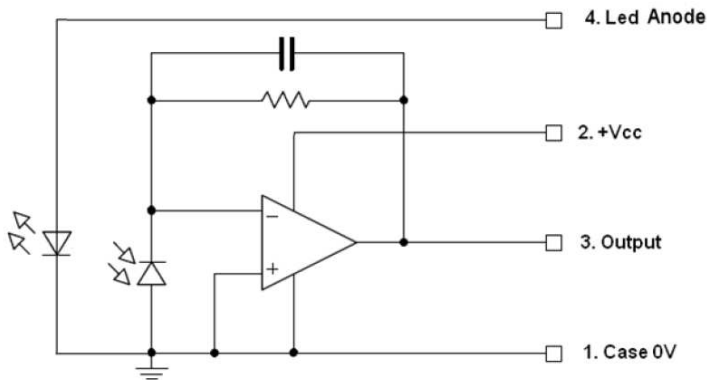
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Circuit Diagram 1 - SMPX617-LN, SMPX612-LN, SMPX614-LN & SMPX616-LN

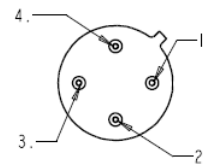
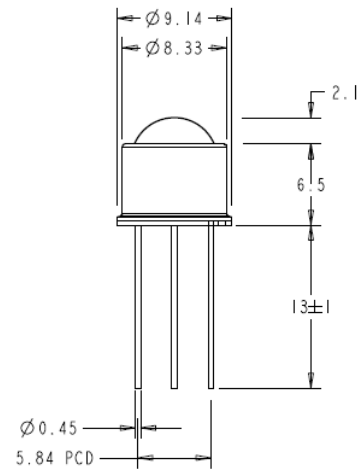


Circuit Diagram 2 – SMPX613-LN



Mechanical

All dimensions in mm



Bottom View