

NSM3914, NSM3915, NSM3916 Series End-Stackable LED Bar Graph Array with Driver

Applications

- Power meter in stereo systems
- Gauges

- VU meter in tape recorders
- Process control meters
- Replacement for edge meters

Features

- Packages are end-stackable for expanded displays. See PKG # NBB
- Can be cascaded to 10 arrays (100 bar graph element)
- Linear, logarithmic, and VU meter functions performed
- Bar or dot display mode externally selectable by user
- LED current programmable from 2 mA to 30 mA
- Stable, internal voltage reference for full-scale analog inputs from 1.2V to 12V
- Inputs operate down to ground
- Signal input withstands 35V without damage or false outputs
- Custom configurations are available.

















General Description

The NSM3914, NSM3915, NSM3916 series are functional replacements for a variety of conventional meters. Each combines a 10-element LED linear array and a monolithic integrated circuit display driver. The driver circuits, similar to the LM3914, LM3915, LM3916 series, light successive LEDs as the analog input voltage level increases past pre-scaled threshold points.

The NSM3914 provides a linear analog display as internal threshold points are linearly scaled.

A logarithmic display is provided by the NSM3915, as threshold points are set on 3 dB intervals. The NSM3916 is a variation of the logarithmic display; the VU meter function is provided by using threshold points at common VU levels.

Information regarding the internal voltage reference, LED current programming mode selection, and application hints are given in the LM3914, LM3915, LM3916 data sheets.

FORMAT	DEVICE NO.	DESCRIPTION
	NSM 3914	Linear output function
	NSM 39142	" " "
	NSM 39143	" " "
	NSM 39146	" " "
	NSM 39147	" " "
	NSM 39148	" " "
	NSM 3915	Logarithmic output function
	* NSM 39151	" " "
	NSM 39152	" " "
	NSM 39153	" " "
	NSM 39158	" " "
	NSM 3916	Vu output function
	NSM 39162	" " "
	NSM 39163	" " "
	NSM 39168	" " "
	NSM 39169	" " "

*HIGH EFFICIENCY RED LED SEGMENTS



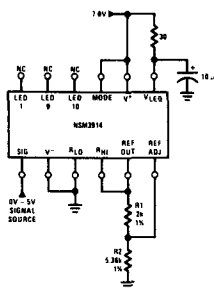
NSM3914, NSM3915, NSM3916 LED BAR GRAPH DISPLAYS

Optical and Electrical Characteristics

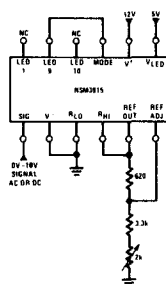
Parameter	Conditions	Min	Typ	Max	Units	
LED Segment Intensity	$V^+ = 12.0V, V_{LED} = 4.5V,$ $I_{LREF} = 1.0 mA$	0.10	0.20		mcd	
LED Intensity Matching (All Segments On)	$V_{IN} \geq 10V, V^+ = 12.0V, V_{LED} = 3.0V,$ $I_{LREF} = 1.0 mA$		± 33		%	
LED Current/Segment	$V^+ = 12.0V, V_{LED} = 4.5V,$ $I_{LREF} = 1.0 mA$		10		mA	
Peak Wavelength	RED		655		nm	
	HIGH EFFICIENCY RED		635			
	YELLOW		585			
	GREEN		565			
Voltage Reference Output	$0.10 mA \leq I_{LREF} \leq 4.0 mA,$ $V^+ = 12.0V, V_{LED} = 4.5V$	1.2	1.28	1.34	V	
Signal Input Bias Current			10	100	nA	
Supply Current (V^+ Lead)	$V^+ = 5V$ to $20V, I_{LREF} = 1.0 mA$		6	10	mA	
Absolute Accuracy At Each Threshold Point	NSM3914	Deviation from Straight Line through First and Last Threshold Point	-5		5	%
	NSM3915	$V_{IN} = -3$ to -18 dB	-1		1.5	dB
		$V_{IN} = -21$ to -27 dB	-2		2	dB
	NSM3916	$V_{IN} = -3$ to -7 dB	-1		1.5	dB
		$V_{IN} = -10$ to -20 dB	-2		2	dB

- NOTES: 1. Refer to the NSM 3914, NSM 3915, NSM 3916 and LM 3914, LM 3915, LM 3916 data sheets for technical and application information
 2. Additional color combinations, pins, connectors available upon request
 3. Refer to package outline (NBB)

Linear Bar Graph (5V Full-Scale)



Logarithmic Audio Dot Graph
(10V Full-Scale)



Block and Connection Diagram

