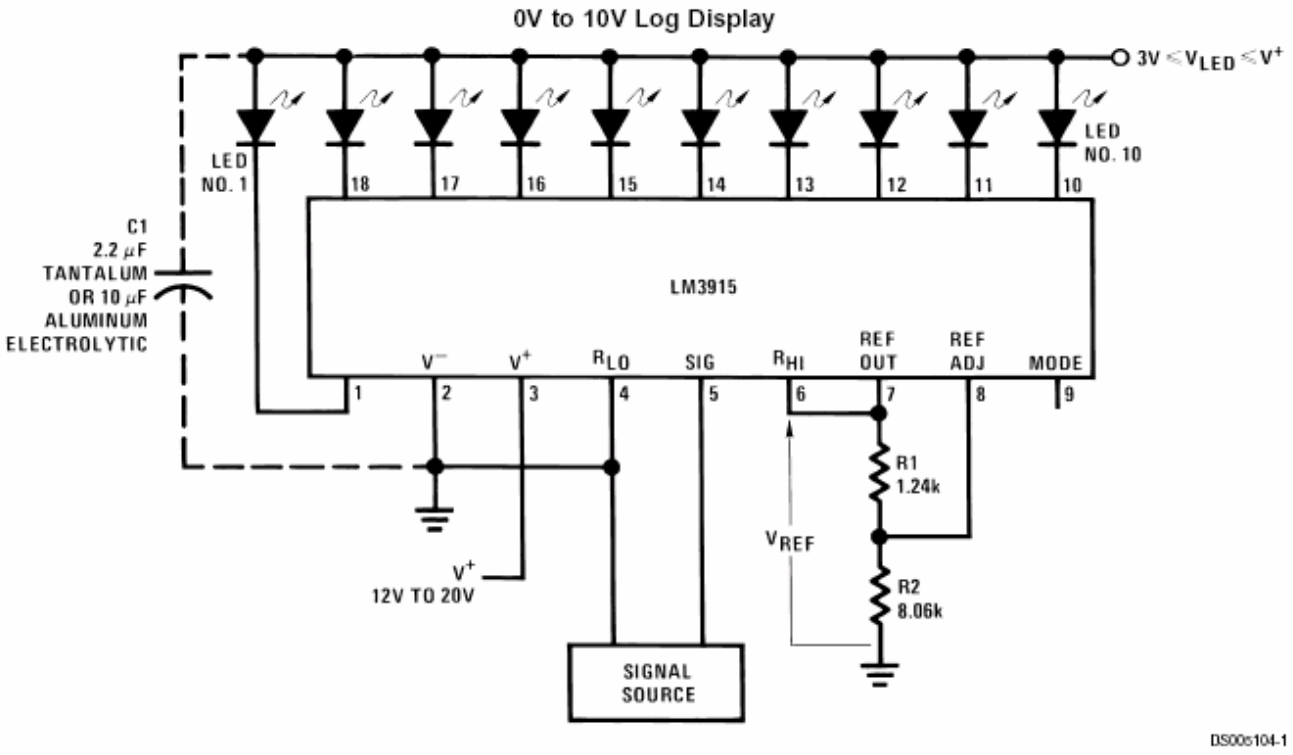
0V to 10V Log Display



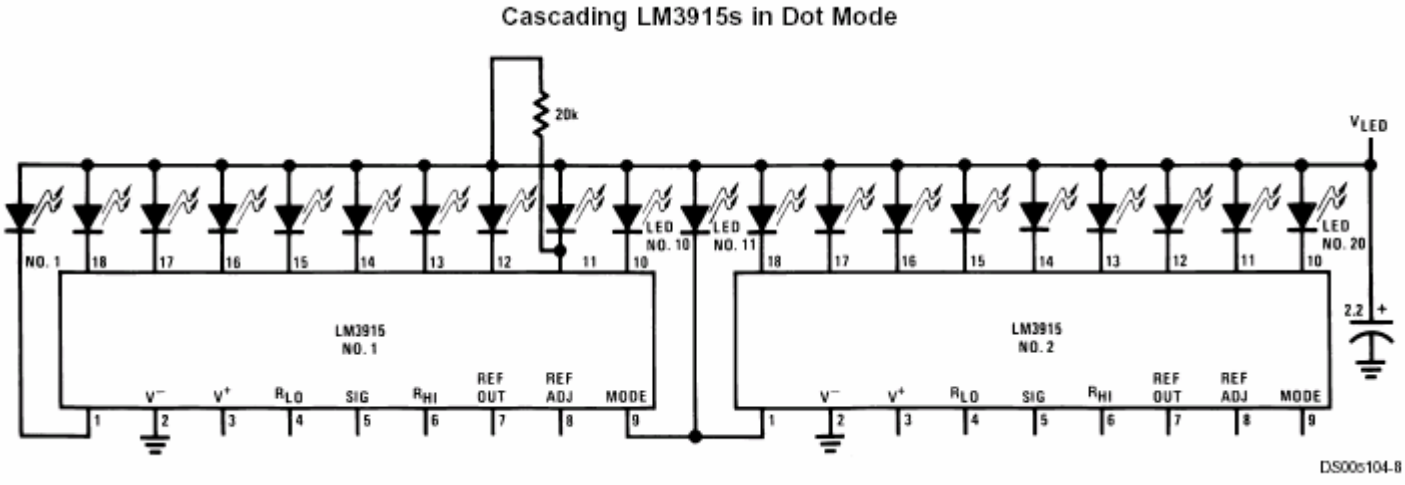
Notes: Capacitor C1 is required if leads to the LED supply are 6" or longer.

Circuit as shown is wired for dot mode. For bar mode, connect pin 9 to pin 3. V_{LED} must be kept below 7V or dropping resistor should be used to limit IC power dissipation.

$$V_{REF} = 1.25V \left(1 + \frac{R2}{R1}\right) + R2 \times 80\ \mu A$$

$$I_{LED} = \frac{12.5V}{R1} + \frac{V_{REF}}{2.2\ k\Omega}$$

Cascading LM3915s in Dot Mode



Low Cost Circuit for 60 dB Display

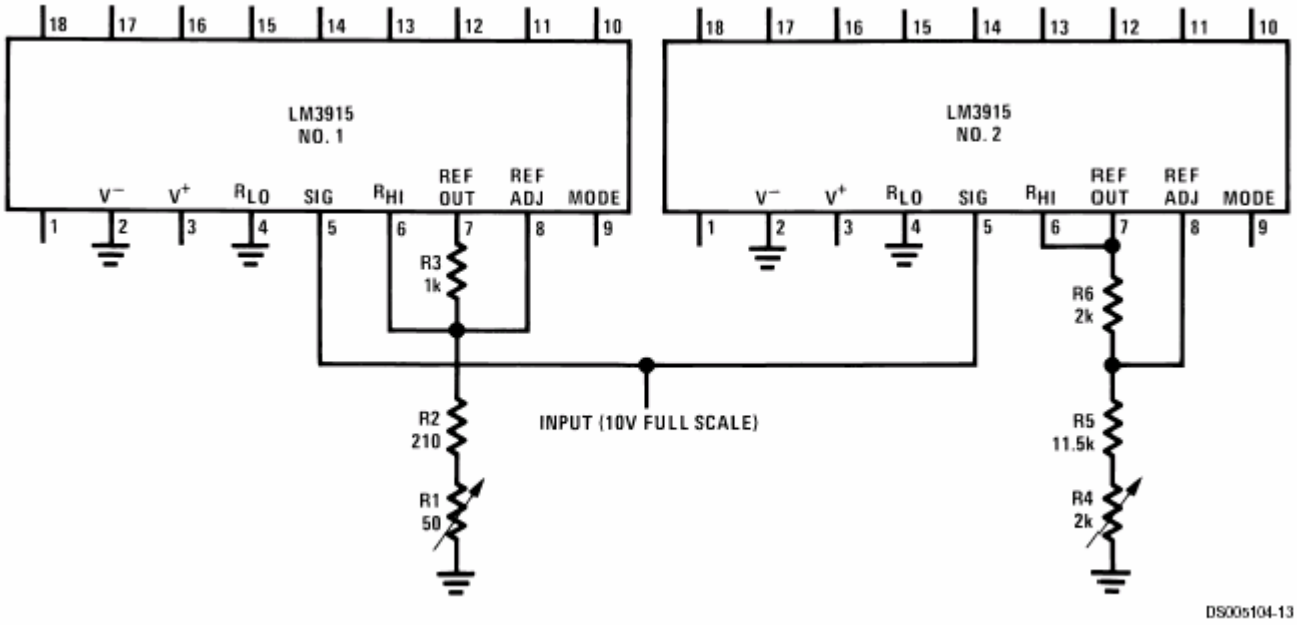


FIGURE 5. Low Cost Circuit for 60 dB Display

Improved Circuit for 60 dB Display

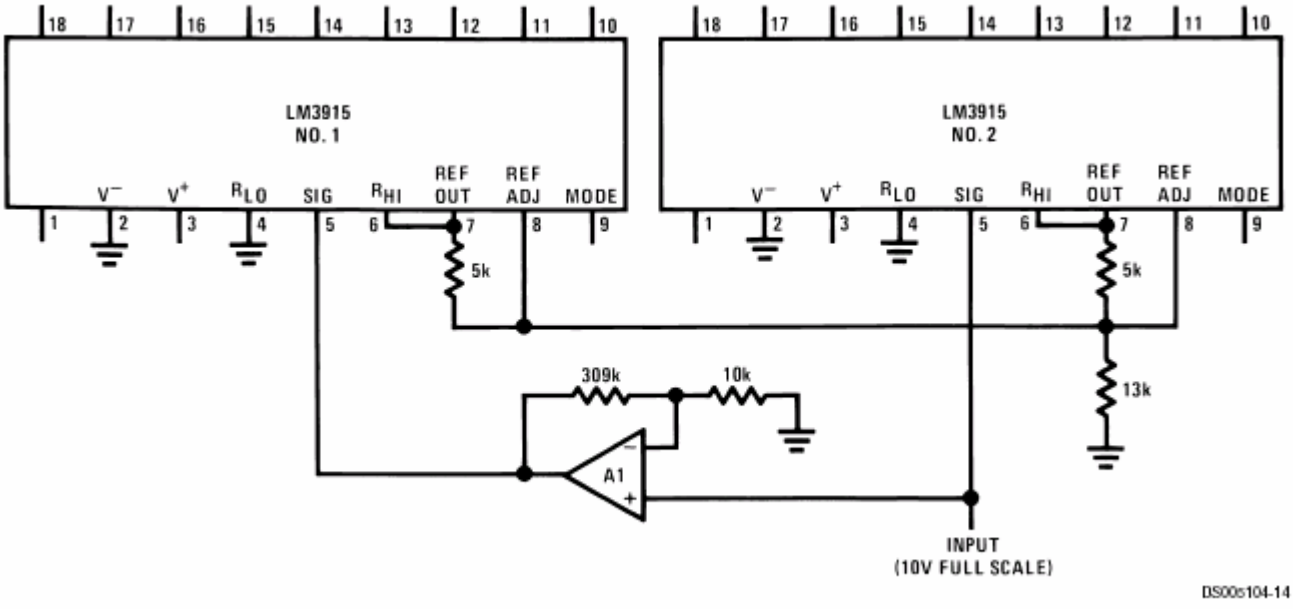
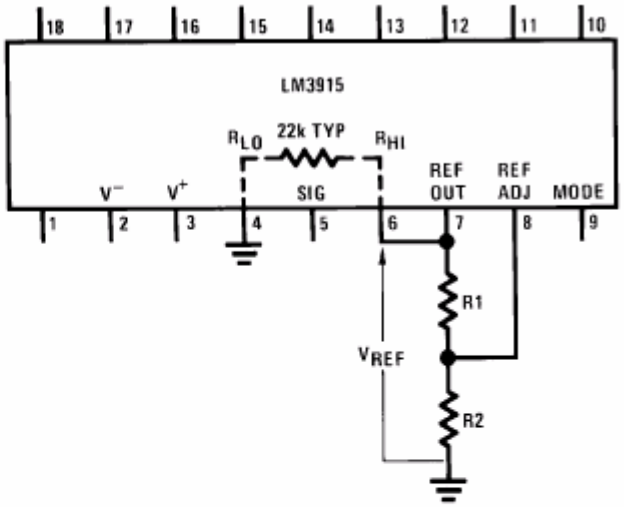


FIGURE 6. Improved Circuit for 60 dB Display

Design Equations for Fixed LED Intensity



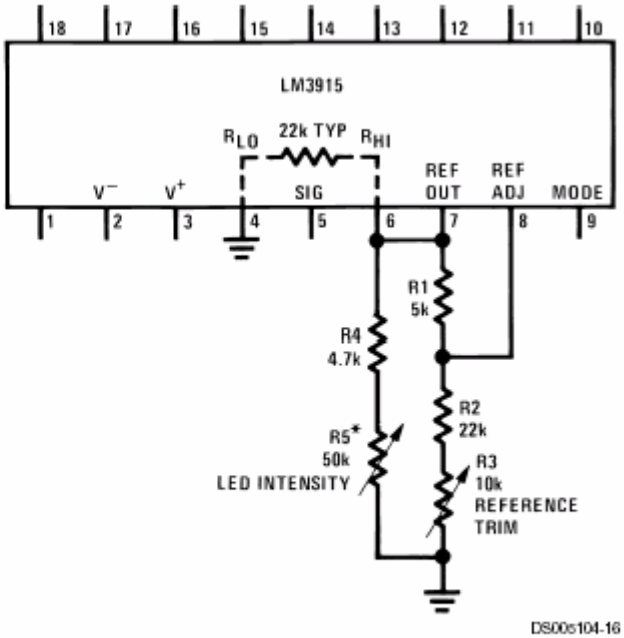
Adjust R2 to vary V_{REF}

$$\text{Pick R1} = \frac{12.5V}{I_{LED} - V_{REF}/2.2\,k\Omega}$$

$$\text{Pick R2} = \frac{(V_{REF} - 1.25V)}{1.25V/R1} + 0.08\,mA$$

FIGURE 7. Design Equations for Fixed LED Intensity

Varying LED Intensity



*9 mA < I_{LED} < 28 mA @ V_{REF} = 10V

FIGURE 8. Varying LED Intensity

Independent Adj. of Reference Voltage+Intensity for Multiple LM3915s

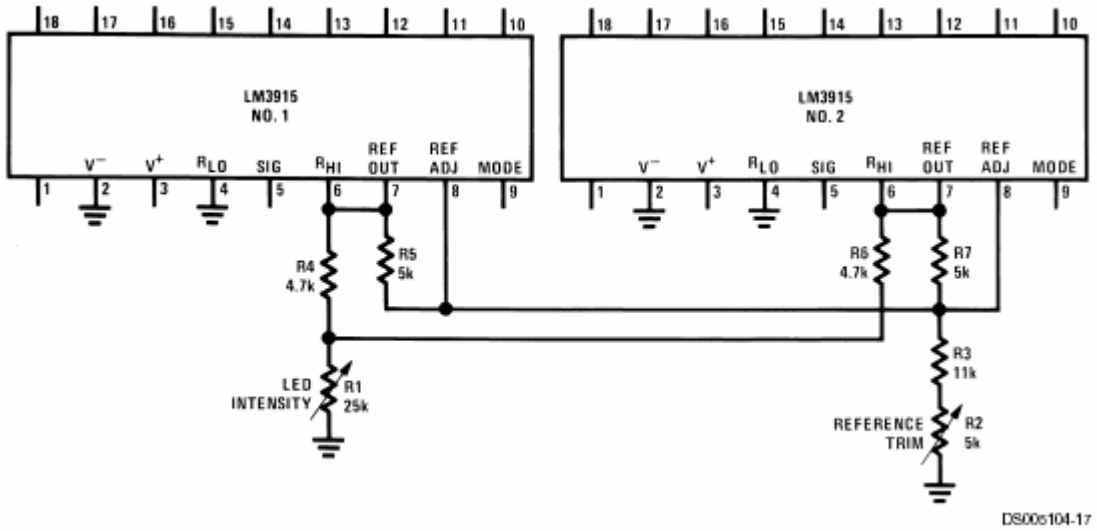
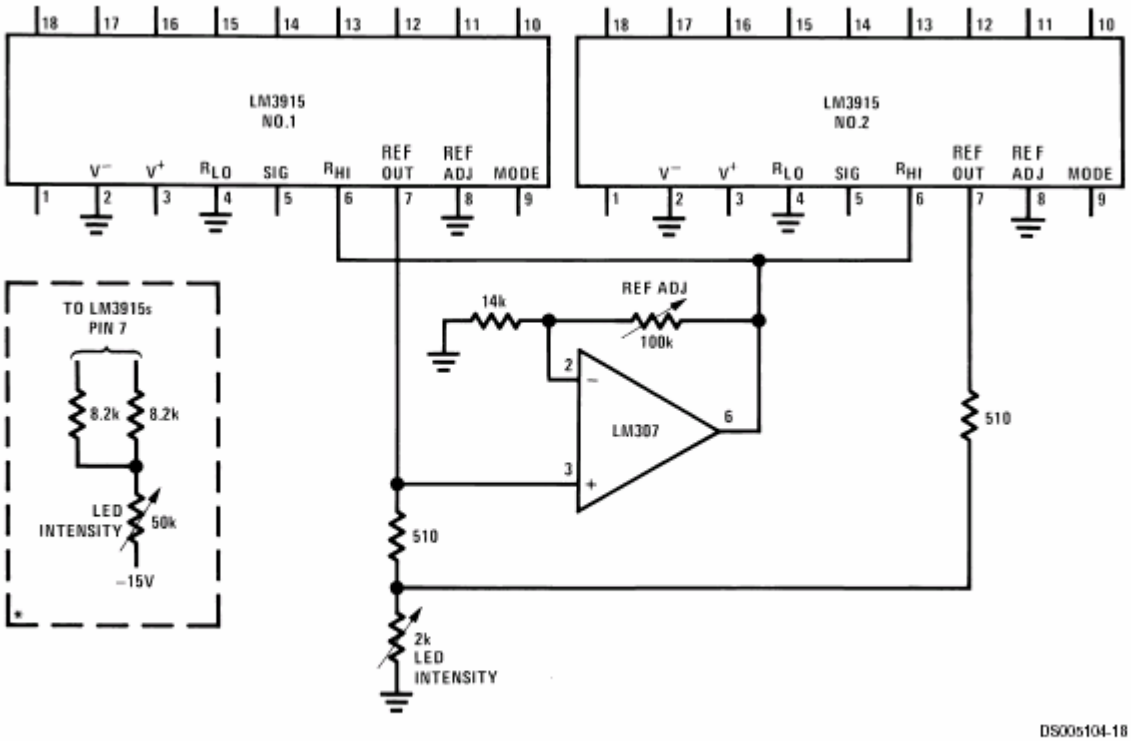


FIGURE 9. Independent Adjustment of Reference Voltage and LED Intensity for Multiple LM3915s

Wide-Range Adj. of Reference Voltage+LED Intensity for Multiple LM3915s



*Optional circuit for improved intensity matching at low currents.
See text.

FIGURE 10. Wide-Range Adjustment of Reference Voltage and LED Intensity for Multiple LM3915s

0V to 10V Log Display with Smooth Transitions

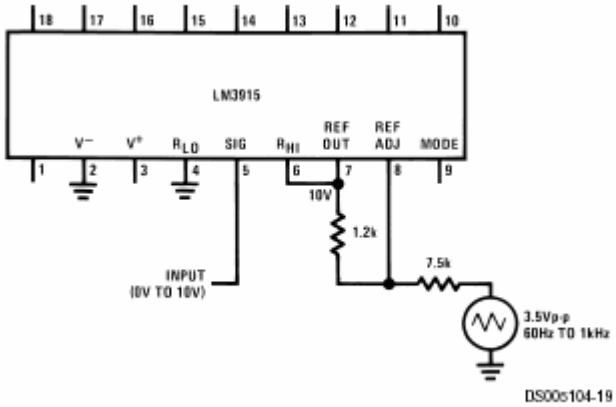
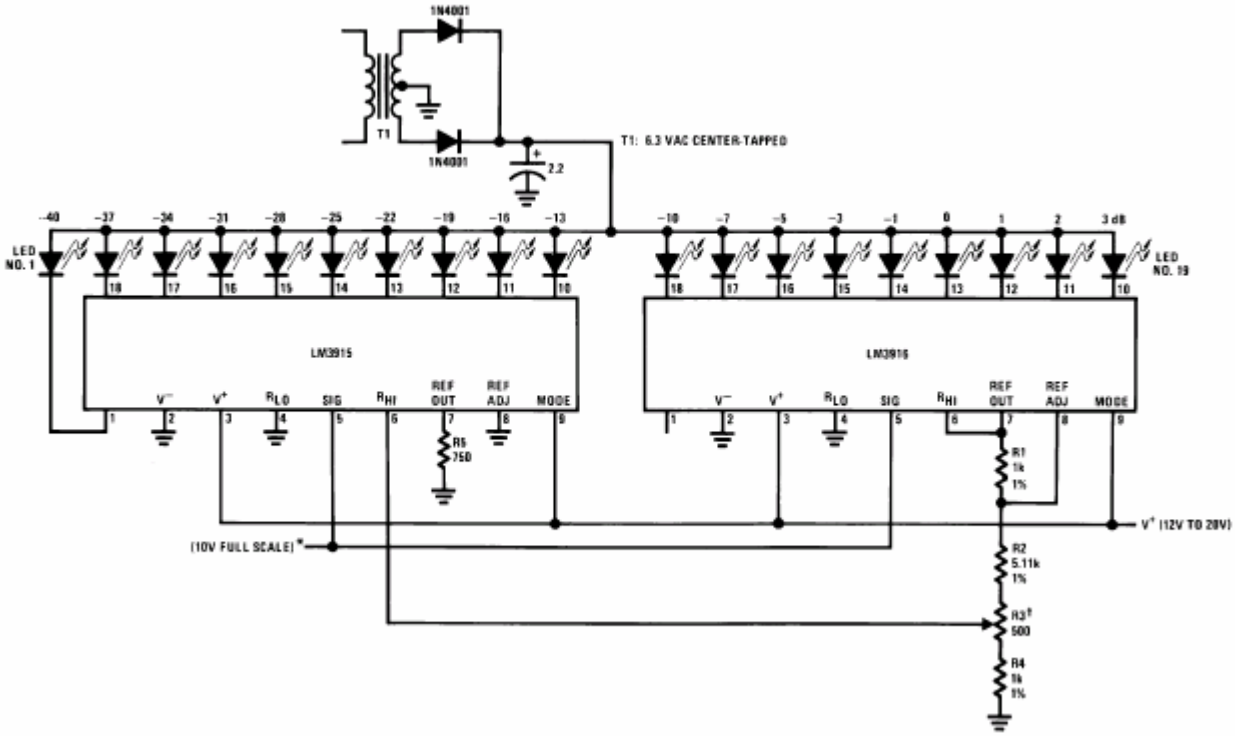


FIGURE 11. 0V to 10V Log Display with Smooth Transitions

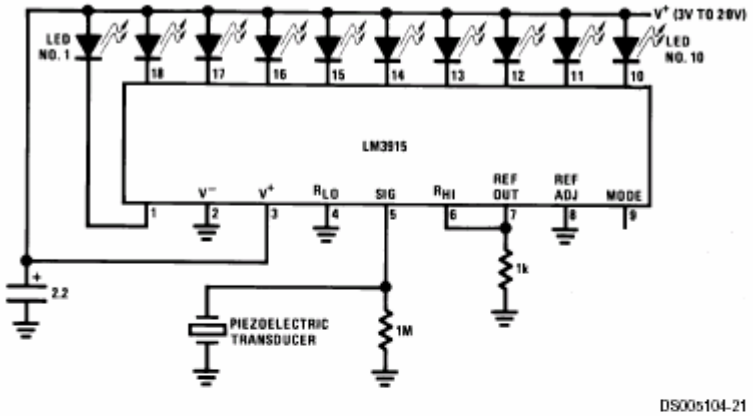
Extended Range VU Meter

Extended Range VU Meter



Vibration Meter

Vibration Meter



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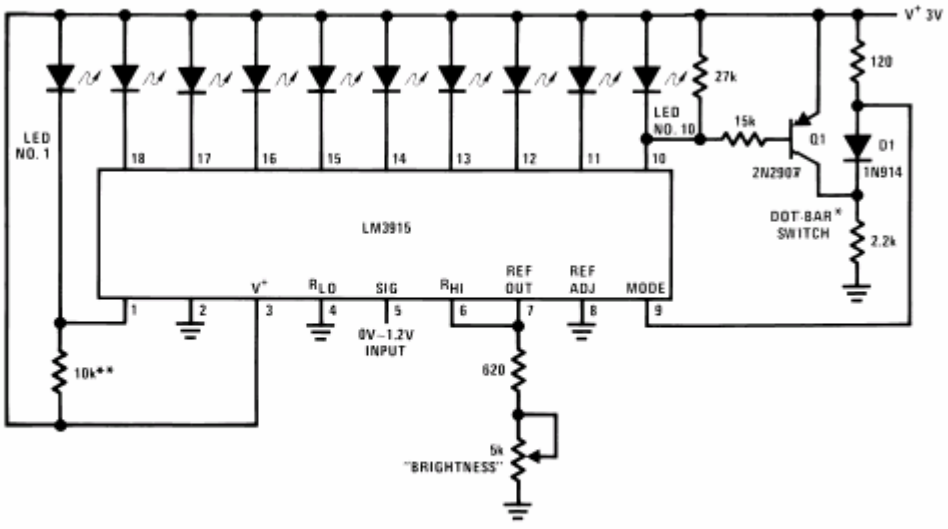
LED	Threshold
1	60 mV
2	80 mV
3	110 mV
4	160 mV
5	220 mV
6	320 mV
7	440 mV
8	630 mV
9	890 mV
10	1.25V

Indicator and Alarm, Full-Scale Changes Display from Dot to Bar

Indicator and Alarm, Full-Scale Changes Display from Dot to Bar



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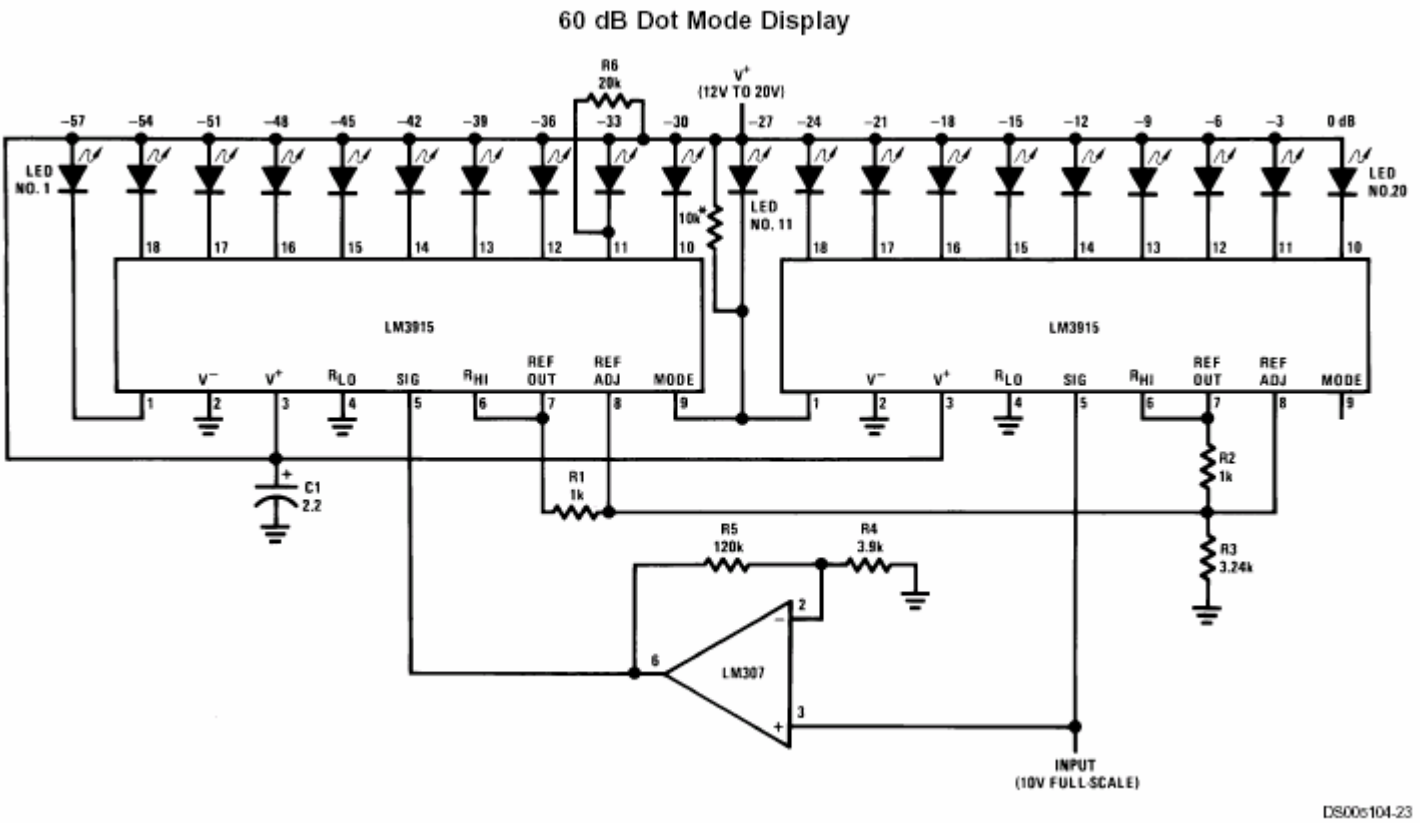
*The input to the dot bar switch may be taken from cathodes of other LEDs. Display will change to bar as soon as the LED so selected begins to light.
**Optional. Shunts 100 µA auxiliary sink current away from LED #1.

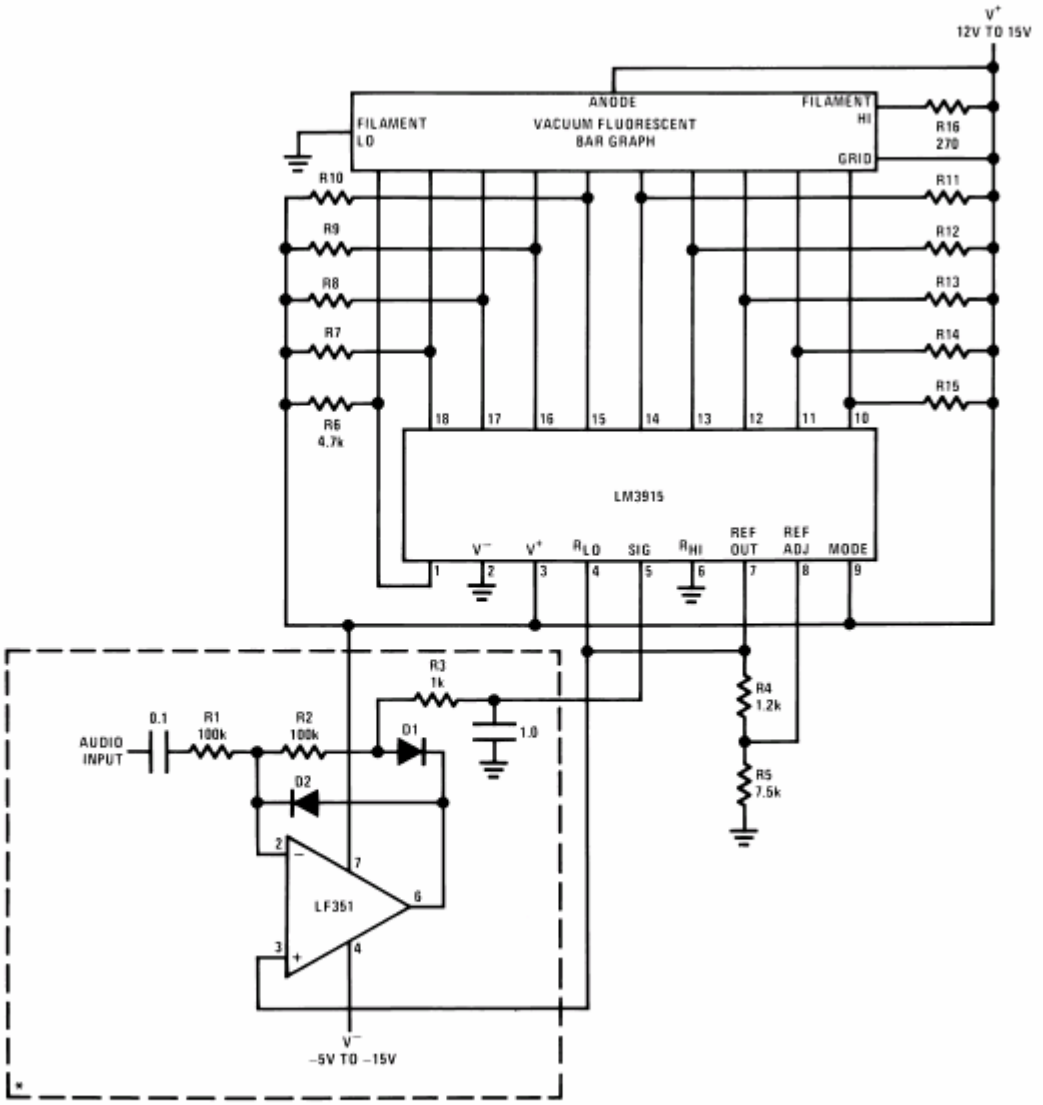
60 dB Dot Mode Display



**Optional. Shunts 100 µA auxiliary sink current away from LED #11.

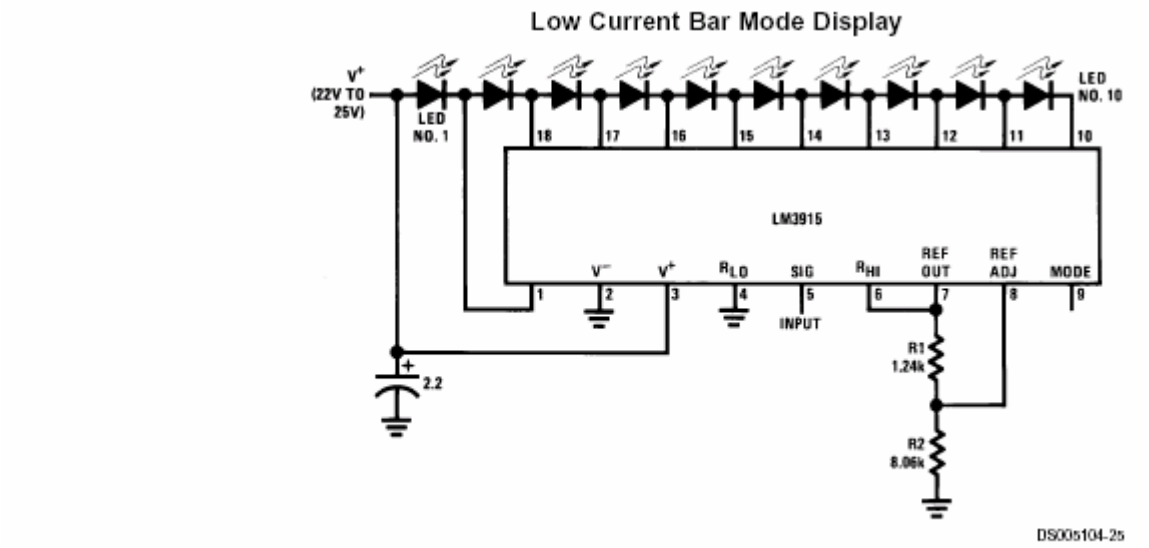
Driving Vacuum Fluorescent Display

Driving Vacuum Fluorescent Display



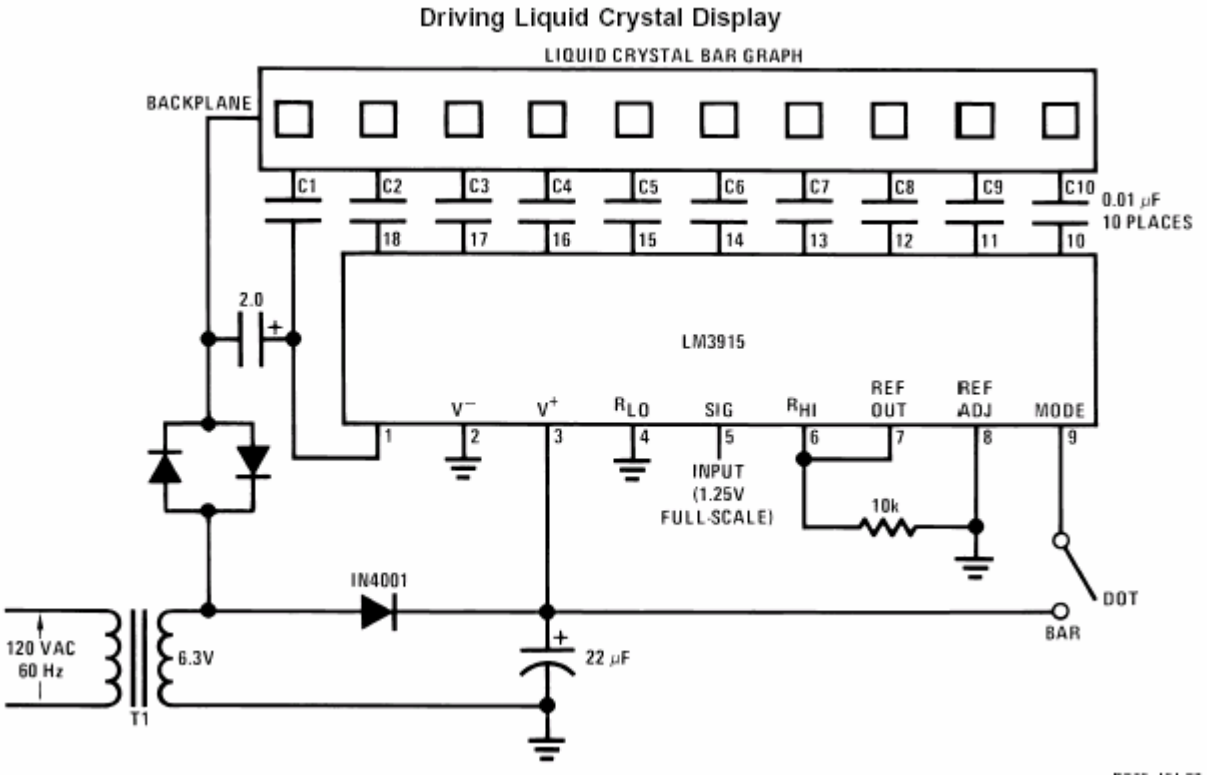
R7 thru R15: 10k ±10%
D1, D2: 1N914 or 1N4148
*Half-wave peak detector.
See Application Hints.

Low Current Bar Mode Display



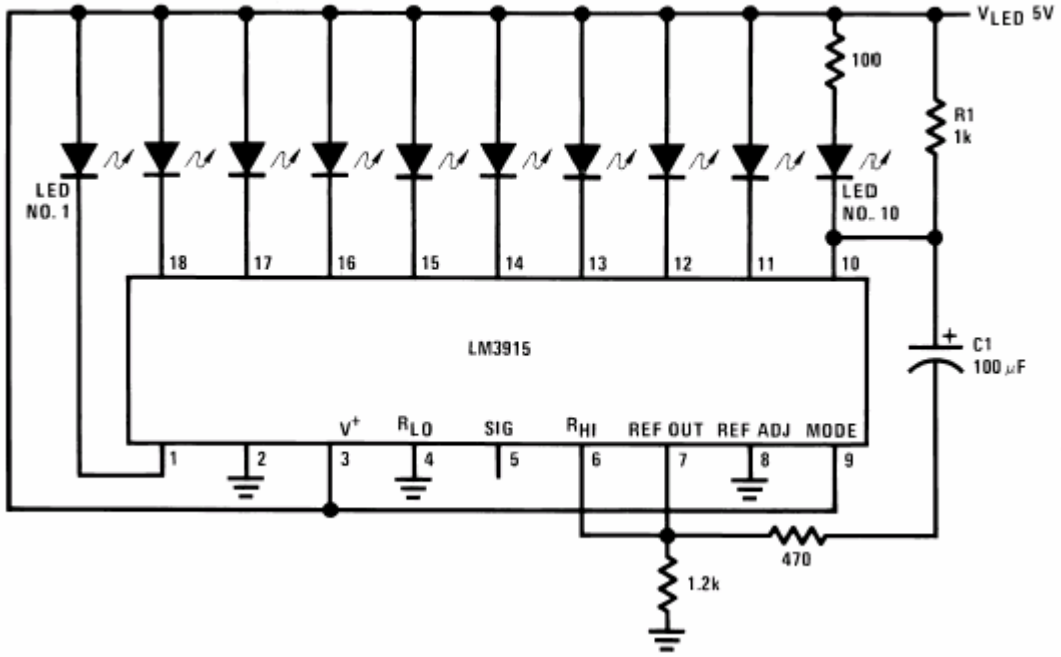
Supply current drain is only 15 mA with ten LEDs illuminated.

Driving Liquid Crystal Display



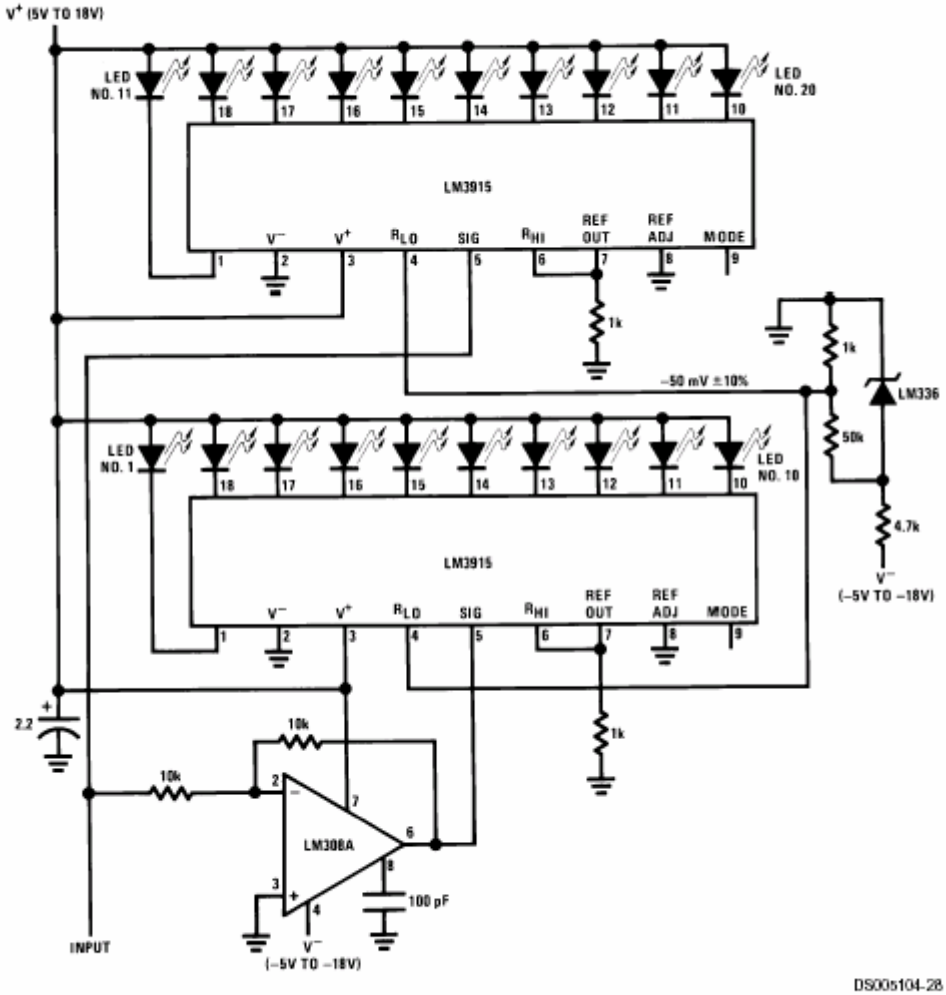
Bar Display with Alarm Flasher

Bar Display with Alarm Flasher



Precision Null Meter

Precision Null Meter

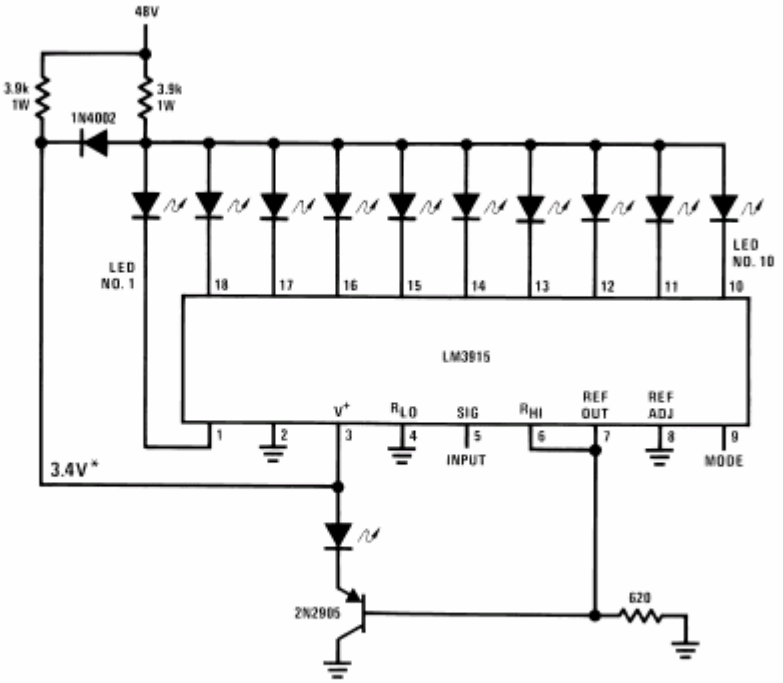


DS005104-28

Logarithmic response allows coarse and fine adjustments without changing scale.
Resolution ranges from 10 mV at V_{IN} = 0 mV to 500 mV at V_{IN} = ±1.25V.

Operating with a High Voltage Supply (Dot Mode Only)

Operating with a High Voltage Supply (Dot Mode Only)



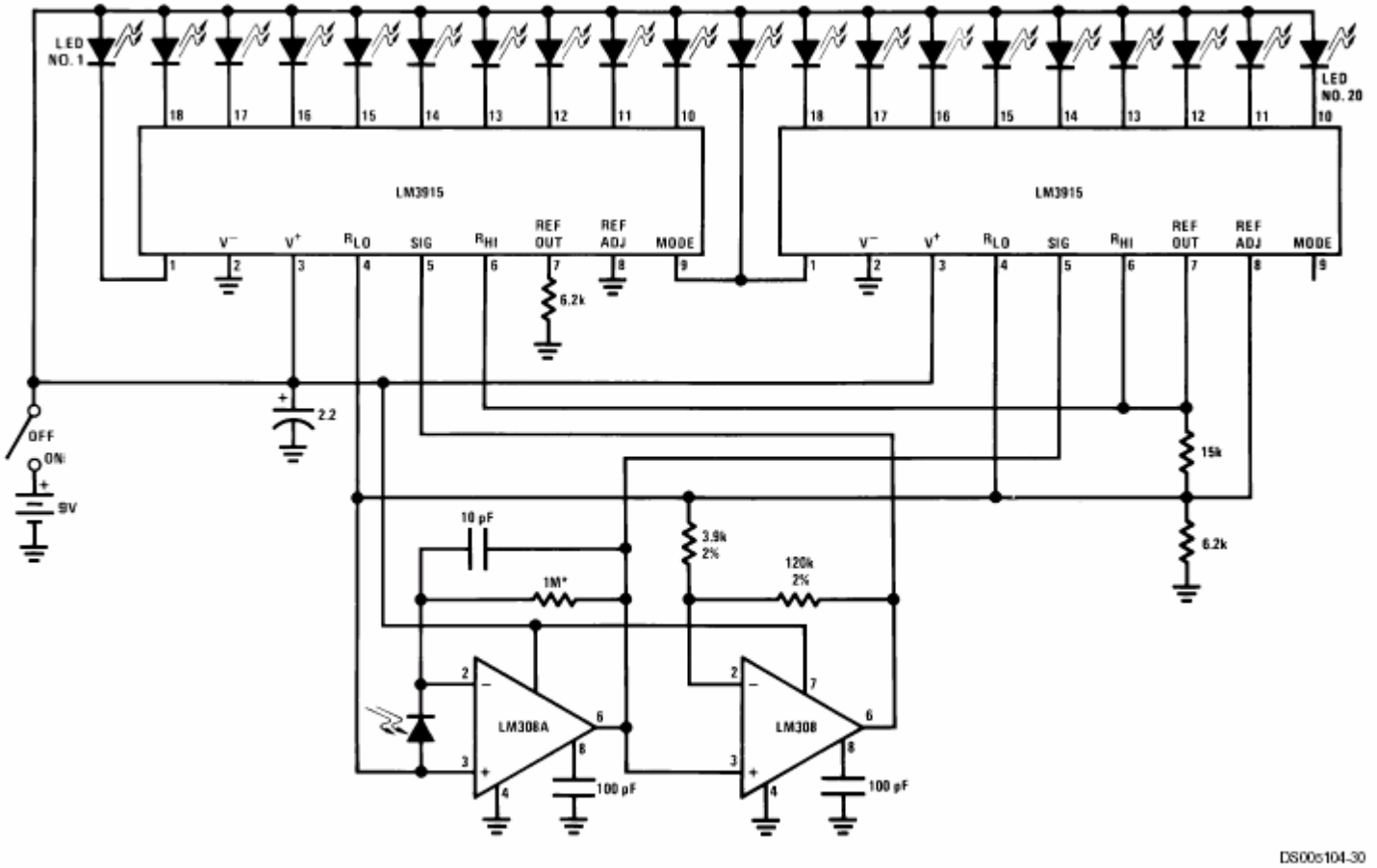
DS005104-29

The LED currents are approximately 10 mA, and the LM3915 outputs operate in saturation for minimum dissipation.

*This point is partially regulated and decreases in voltage with temperature. Voltage requirements of the LM3915 also decrease with temperature.

Light Meter

Light Meter

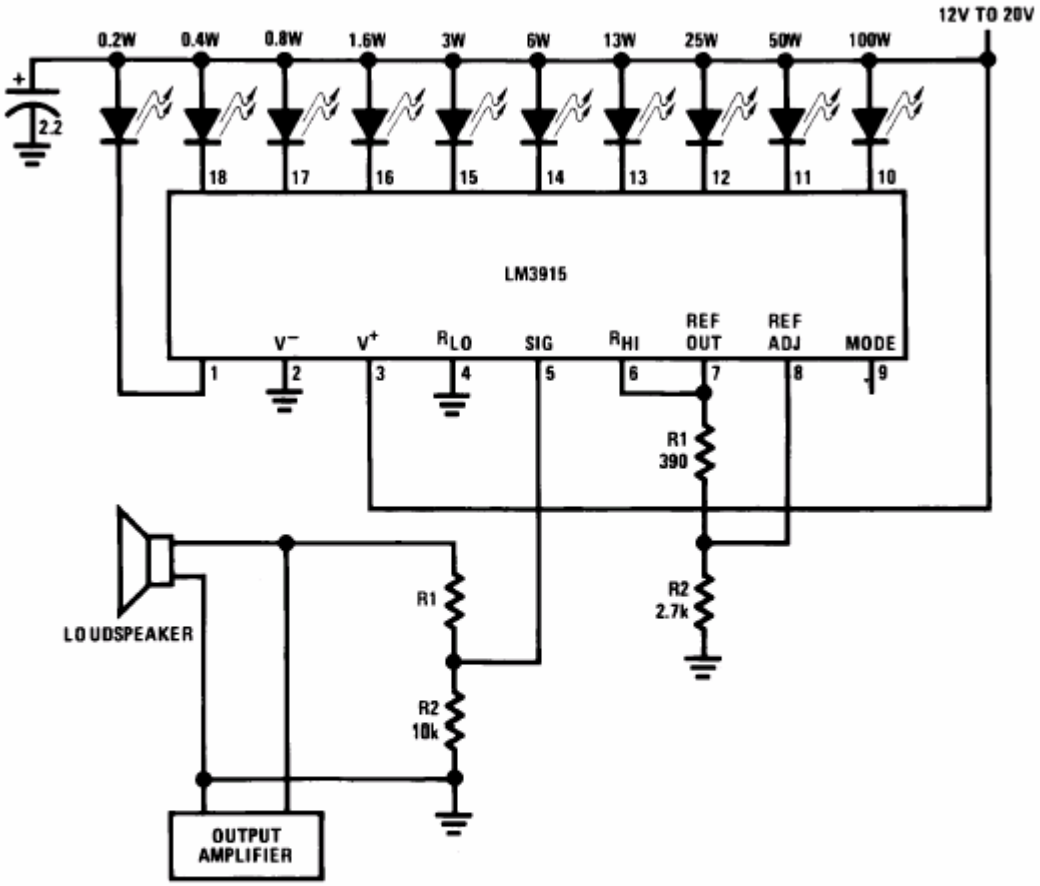


DS005104-30

*Resistor value selects exposure
1/2 f/stop resolution
Ten f/stop range (1000:1)
Typical supply current is 8 mA.

Audio Power Meter

Audio Power Meter



DS005104-31

Load Impedance	R1
4Ω	10k
8Ω	18k
16Ω	30k

See Application Hints for optional Peak or Average Detector