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NOTE **SM-EZ-101** FOR  
INFORMATION ON BASIC  
ASSEMBLY TECHNIQUES

# SURFNOTES™

BULLETIN  
**SP-102**

## PRACTICAL SURFACE MOUNT CIRCUIT APPLICATIONS USING SURFBOARDS

BUILD THIS SURFACE MOUNT

# LOGIC STATUS INDICATOR

HANDY MODULE PLUGS IN WHERE NEEDED WHEN BREADBOARDING

CIRCUIT CAN BE REPEATED ON STANDARD **SURFBOARDS** TO MONITOR UP TO 5 LINES

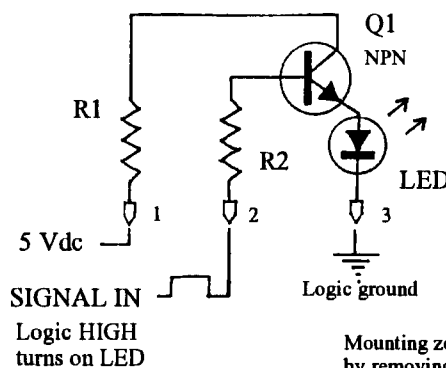
Here is a very useful circuit that is typical of one of the many excellent applications for SURFBOARDS. At one time or another almost everyone working with electronics needs to monitor the status of logic signals in a circuit. Although this can be done with a logic probe, it is often desirable to employ a more permanent indicator in the circuit, or to monitor several signals at one time. If you have such a need then this circuit is for you. The best part about this circuit is the fact that the completed modules can be used in many different circuits by simply plugging them into your breadboard and making a few simple connections. You could easily perform this function with conventional discrete components, but you won't get the advantages of small size and plug in convenience, not to mention the fact that you will spend the time and effort to build up the circuit every time you need it.

### Part list / description

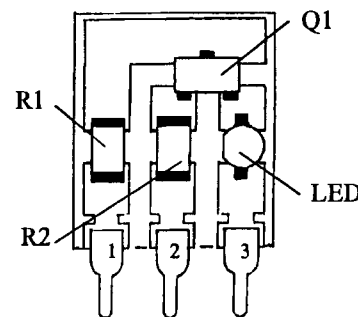
SURFBOARD 6103\*  
Q1 - 2N2222 SOT-23  
R1 - 1-K 1206  
R2 - 10-K 1206  
LED (see text)

\* Use Surfboard models 6106, 6109, 6112, or 6115 if you want to increase the number of logic indicator circuits on the same module.

### BASIC CIRCUIT



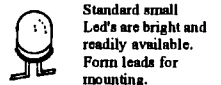
### SURFBOARD BASED CIRCUIT MODEL 6103



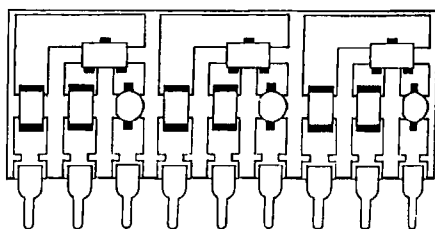
Mounting zones for R1, R2, and the LED are provided by removing small sections from the circuit foils. See our bulletin SM-EZ-101 for tips on this easy task.

### LED INFO

If surface mount LEDs are not available or not bright enough, you can use any small conventional LED's.



NOTE: You can also mount the LED's on the back side of the board by drilling two holes for the leads.



3 - LINE INDICATOR  
Built on SURFBOARD  
model 6109 by repeating  
circuit 3 times.

As you can see in the example at left, multiples of the circuit ( up to 5 on model 6115 ) can be readily built. If desired, you can jumper the power and ground connections on the Surfboard so that only one of each needs to be connected to the circuit being breadboarded. This will minimize the number of connections required to the circuit being tested.

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