

## Lightning Strobe - Dick Neubert

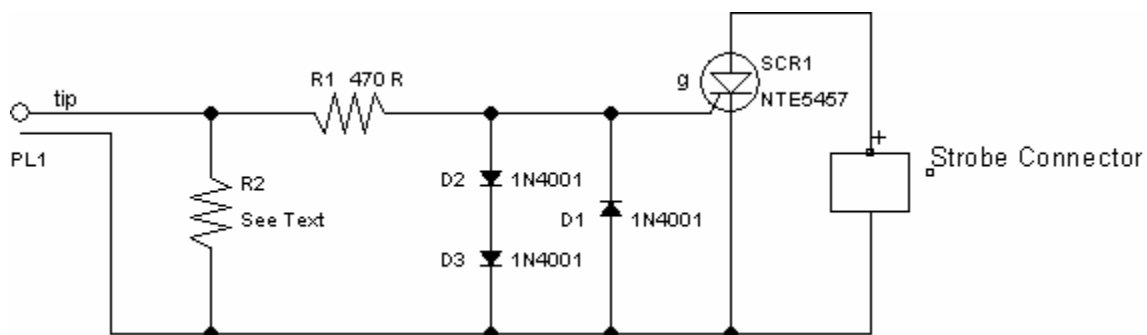
When the church needed thunder for a skit, sound man Dick found the thunder on the Internet and added “lightning” from a photoflash strobe. Since the storm was to be very close (it knocks out the lights), he used an uncommitted output from the mixing board to trigger the strobe with the sound signal via this simple interface. The board output was 600 ohms, unbalanced, at 0 dBm. R1, D1 and SCR1's gate provide a crude match to this output. D2 and D3 protect the source from SCR failure, and normally never conduct. R2 was not used – it's needed only for lower impedance sources. Dick's strobe places about 300 V across SCR1, and SCR1 must discharge this into the trigger coil to fire the tube. This is a very common strobe design. If your strobe has a low-voltage trigger input, you can substitute a 2N2222 or similar transistor for SCR1, since the SCR is then behaving like a transistor anyway and not latching ON. Also omit D2 & D3.

Resistor R2 is needed if you're substituting this device for a speaker. 10 ohms would be an adequate load in most cases, and its power rating should be chosen appropriately for the source. Even if your amplifier doesn't mind having the speaker disconnected, if it has an output blocking capacitor you'll need an R2 to prevent unintended triggering of SCR1. It doesn't take much power to trigger the SCR. In the original application, the nominal signal level was 0 dBm (1 milliwatt into 600 ohms).

### WARNING:

Strobe **MUST** be battery-powered, o/w an isolation transformer must be used! Ignoring this requirement can create a serious shock hazard or cause damage to the strobe or the audio source by creating a high-voltage ground loop. Many line-powered strobes have no isolation between the trigger terminals and the power line.

### Lightning Strobe schematic:



Strobe Connector can be a hot shoe adapter or a female PC connector, as required to connect to your strobe. Dick originally used an alligator clip and a female pin salvaged from a connector. Better-protected terminations may be found at [www.bhphotovideo.com](http://www.bhphotovideo.com) or possibly a well-stocked camera store.

Parts List:

Ref	Qty	Description	Allied p/n
D1,2,3	3	1N4001	266-0001
R1	1	470 Ohms, 1/2 W	296-5678
SCR1	1	NTE5457 (See Text)	935-6236
PL1	1	Phone Plug to match your amplifier	283-0072 (1/8"), 283-1110 (1/4"), 514-8628 (RCA)
R2	1	See Text	
Strobe Connector	1	See Text	