

Initializing a Flip-Flop on Power-up

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Hi All!

I've got a small toggle circuit that I'm using to drive a shutdown circuit on an audio power amplifier. The circuit is made from a CD4093 Schmitt trigger NAND configured as a debouncer for my mute switch input. The output of the 4093 is fed into a CD4013 to provide toggling capability. I've got S and R tied directly to ground. But, I'd like to explore the possibility of providing a predictable power-up scenario. Currently, the circuit upon power up will default to one state or the other. What are some methods that you fellas have used to achieve a known state consistently with a flip-flop like this when the power supply is from a single source. First gut instinct that I'm thinking is to make some sorta RC timing circuit on the power supply pin so that I can provide the set or reset pins with something known before the power supply pin comes up. Any thoughts? Also, I don't want to add too much additional circuitry... if I can solve this purely with passive components or a few transistors, that'd be great.

Thanks!

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