

Requirements for Speaker Protection Unit

Requirement	priority	discrete circuit	uPC1237 based
Delayed connection of speaker after power on	hard	YES	YES
Instant speaker disconnection on power off (AC loss)	hard	YES	YES (my AC is out of spec of IC)
Quick speaker disconnect in case of DC on amplifier output	hard	100ms at 90VDC, 1s at 3VDC	YES (need to do lots of math to find out)
Does not trigger with 10Hz full power output	hard	YES	TBD (need to do lots of math to find out)
Can detect simultaneous positive and negative DC	hard	YES	YES (If I build two independent ones)
Latch relays off when any fault occurred	hard	YES	YES
Can be used for my dual mono design without hard wiring ground of the two amps together	hard	YES	YES (If I build two independent ones)
Can work with up to 70VAC input	hard	NO (needs discrete series regulator)	NO (needs discrete series regulator)
Can work with 24VDC output of series regulator	hard	YES	NO (min 25V)
Can control a ASSR-621 SSR driver	hard	YES	some risk, someone did it and seemed to have success http://www.diyaudio.com/forums/solid-state/295884-speaker-protection-upc1237-mosfet.html
Has an interface for the outputs to get switched off by external trigger from other control	hard	YES	YES (use the overload detector pin with some additional circuit)
Has an auxiliary control output that switches together with the relay	hard	YES	YES (can be done somehow)
Can be built from parts I have at home or can source easily and cheap and from reputable sources	hard	YES	NO (hard to source IC)
can be safely set up without access to a lab	hard	YES (with confidence in simulation results)	NO (many unknowns)
Good documentation available	hard	YES (DIY)	NO (not from manufacturer, maybe from users)
can be simulated	hard	YES	NO (black box with interface behaviour mostly unknown)
Can be configured in a lot of ways so that others can make use of it easily	soft	YES	YES
Is component selection invariant	soft	TBD, verify with simulation	NO (hard to source IC)