TRIAC Dimmer Board Requirements

PCB layout requirements

* 2-layer board (cost)
* 1oz copper (cost)
* FR4 Dielectric (cost)
* High Voltage Traces
  + Min clearance 54mil (IPC-2221)
* Load Traces
  + Max temp rise 10°C (safety)
  + Min width of 54mil (IPC-2152)

Specifications

* Input
  + 120VRMS @60Hz (compatibility)
  + 2.5A Max (safety)

Capacitor Requirements

* 250VAC (at least 1.5 x input voltage) (safety)

Performance Requirements

* Maximum duty cycle shall be a minimum of 90%
* Minimum duty cycle shall not exceed 0%

Fusing Requirements

* Derate max current by 25% (safety)
  + 2.5A / 0.75 = 3.33A
* Slow-blow to protect from extended overcurrent (safety)
  + Relying on circuit breaker to clear short circuit fault current
* Voltage Rating 250VAC (at least 1.5 x input voltage) (safety)