

1. Scope

The following document describes how a temperature down regulation with the MLX10801 can be done.

2. General

Due to the fact that the MLX10801 can be used on a lot of LEDs, no internal down regulation is implemented as an integrated function. The down regulation is dependent on the used LED type, the assembly in the application and as well as on the application itself.

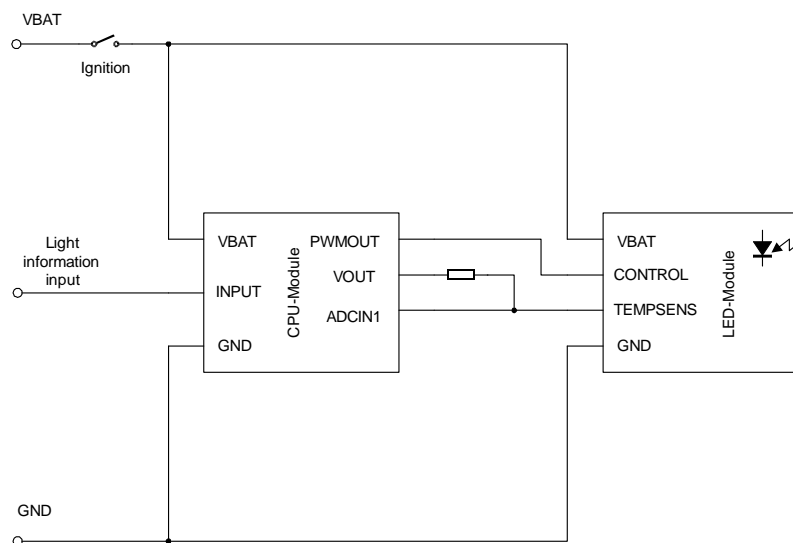
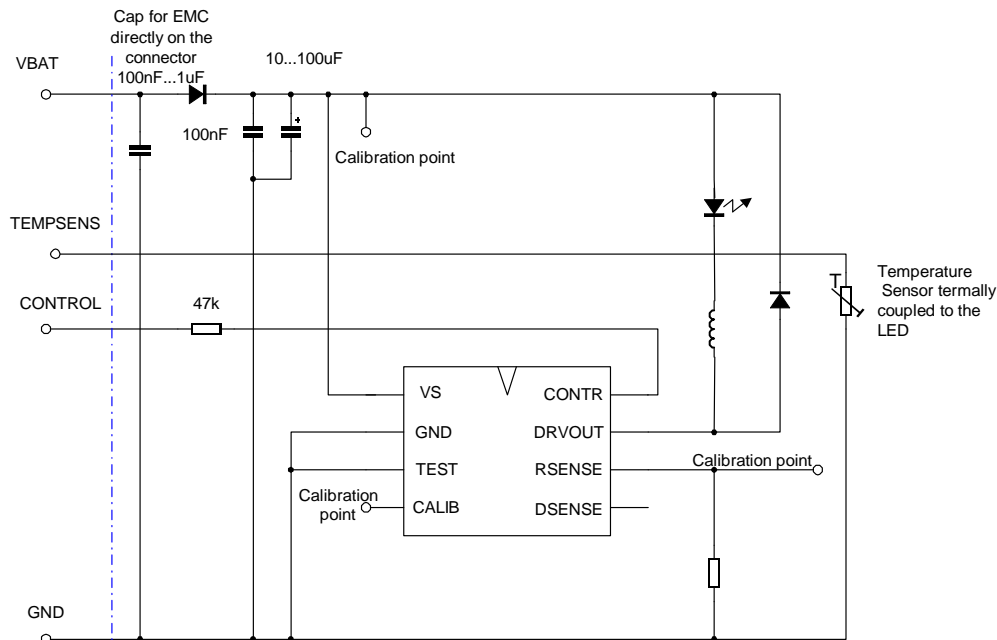
The MLX10801 built in temperature sensor should be calibrated to 150C junction temperature, which is just the thermal protection of the IC in that case. In case this junction temperature is reached, the MLX10801 switches off its load.

In order to protect the LEDs, this shut off point can be put also to lower values. Anyway, the behaviour is the same, the LED will be switched off in case the temperature threshold has been reached.

Some applications need to have the LEDs still on, but would like to have the current reduced as a temperature down regulation is doing.

3. Application diagrams

The down regulation must be done by means of an external temperature sensor under the use of a PWM on the module pin CONTROL supplied by an external system as shown in the following diagrams.



The CPU module will measure the temperature of the LED module and will regulate the light output down in dependency:

- of the light information input,
- the measured temperature
- and the used regulation algorithm.

So the function is implemented just in SW of the CPU and realised via a PWM on the LED module pin CONTROL.

3.1. Conclusion

Temperature down regulation can be done under the use of an external system having all the needed flexibility.

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