TSAL

This board controls some LEDs (3x5) in three possible ways:
- Directly
- By MOSFET switches
- By an Oscillator

The input pins are 5:
+VDC (typical 20~25V but max 28V)
TSAL_<COLOR> (typical 0~5V but max 28V)
GND

This single board can have various uses: TSAL light, Brakelight and, thanks to the various jumpers, even a sort of RGB light

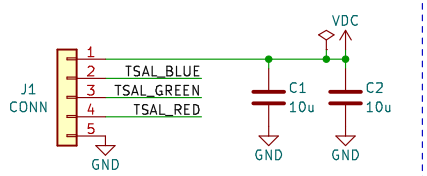
TSAL light mode:
To use this module as TSAL light you need to connect the oscillator (power up through DCDC converter or one of the TSAL_<COLOR>) then both the switches GREEN and RED must be populated. OBV even the LEDs must be populated

Directly connect TSAL_GREEN to SWITCH_GREEN and the output of the oscillator to SWITCH_RED.

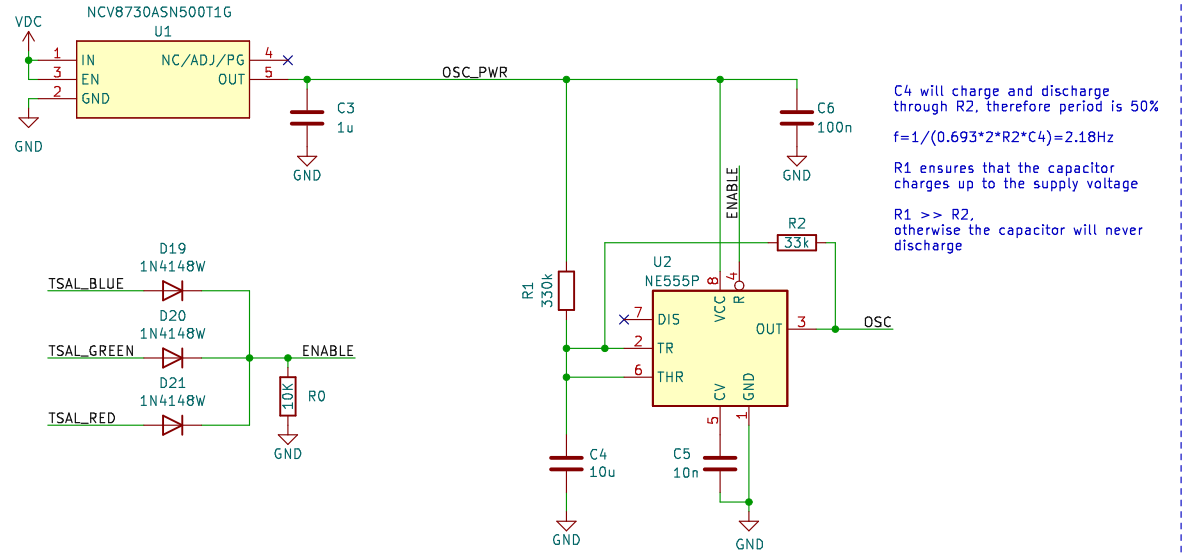
Brakelight mode:
To use this module as brakelight you can just bypass the oscillator module and populate the RED switch and the LEDs

Directly connect TSAL_RED to SWITCH_RED.

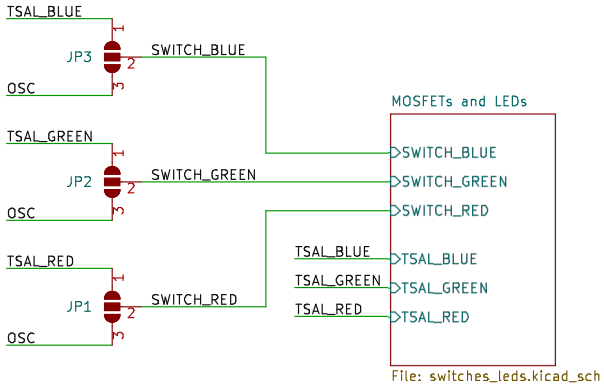
Power & Inputs



Oscillator



Direct Input/Oscillator Configuration



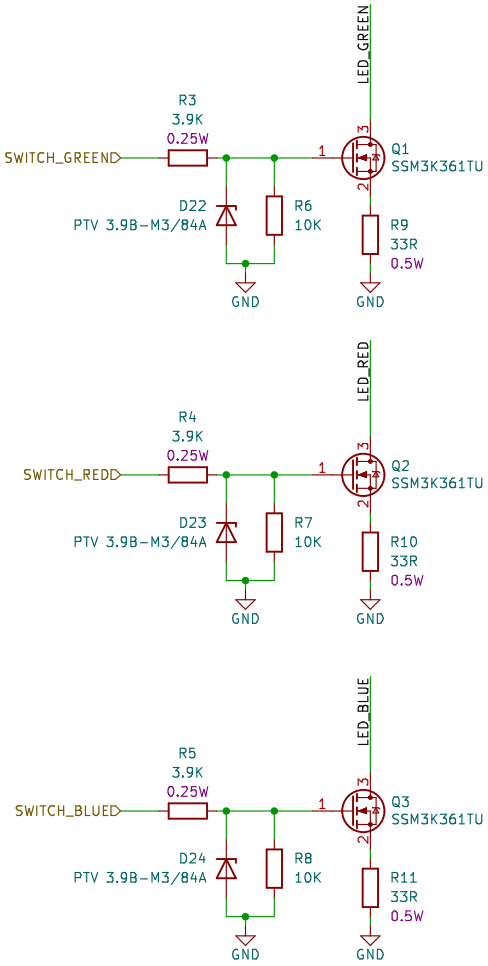
Choose whether to control the LEDs by the oscillator or directly by the input

MOSFETs

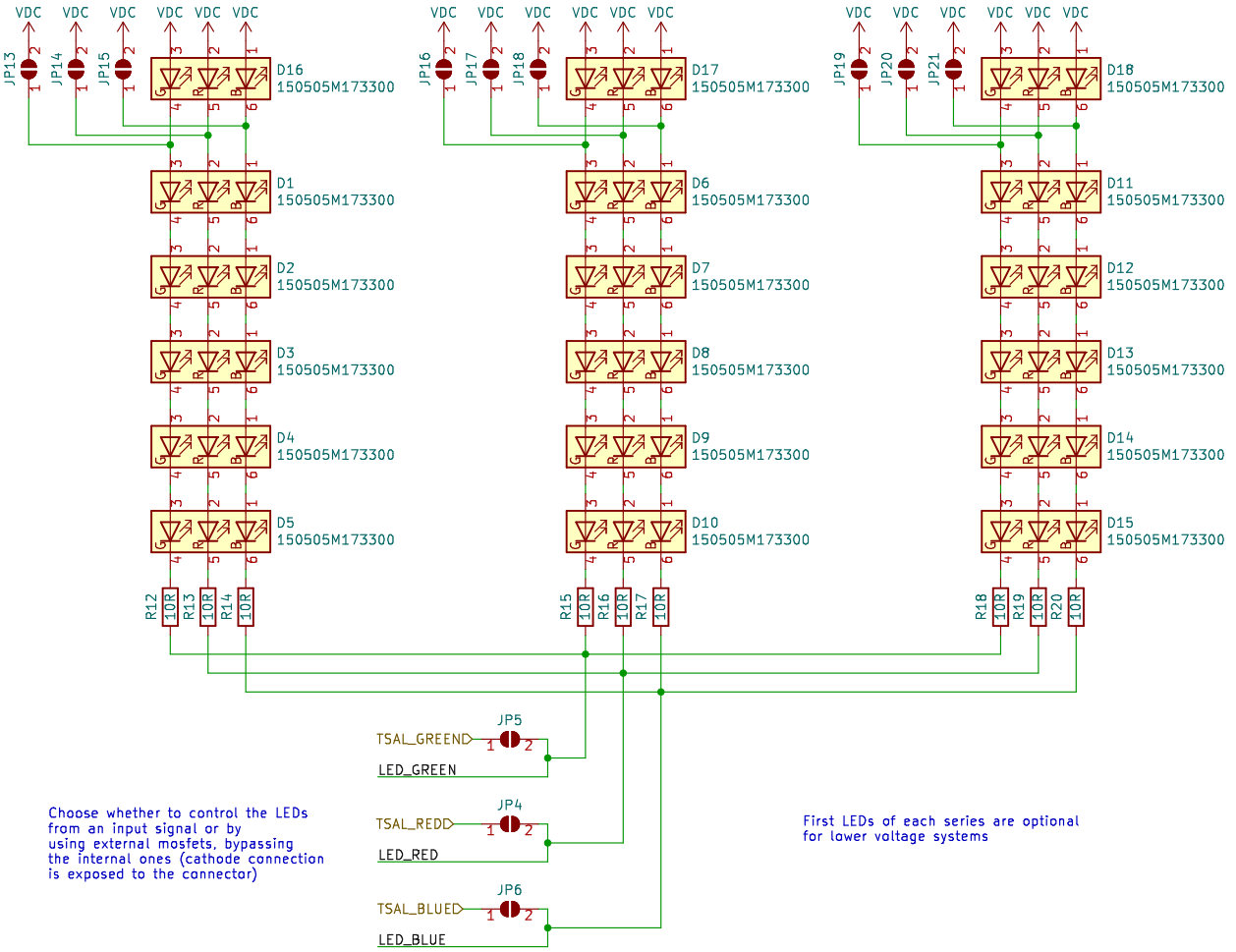
Constant current generators with zener diode voltage regulation

Each MOSFET drives a color depending on its input, which can range from 0 to 5V. If this range is exceeded, it is clamped to 5V.

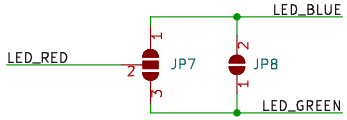
SWITCH_GREEN => i=15mA
SWITCH_RED => i=20mA
SWITCH_BLUE => i=20mA



LEDs



Color Mixing



Connect different lines together to make different colors from a single input (Current through the driving MOSFET will increase!)