Tufty 2040 (PIM624): Power supply

Power Supply and switching
Use VBUS when available otherwise VBAT for supply.

Battery connector (JST PH)

Power switch circuit

Battery voltage sense
Max BAT_SENSE voltage with a 5V battery: 5.0/3 = 1.66V
G6 needs to conduct at least a little bit current at 3.3-1.66V = 1.64V gate voltage.
Tufty 2040 (PIM624): Display, Buttons and Light Sensor

LCD Backlight
Display backlight is 4 white LEDs in parallel (UV 3.2 - 20mA). Each channel of the AP2502 constant current driver sinks 20mA so we tie them together to provide the necessary current.

Light sensor

Light sensor

LCD connector and circuitry

Five front-side buttons