

PWR is mechanically grounded when a Pod is connected to a head unit

Snubber reduces ringing/switching noise because of mechanical nature of the switch

U4  
VDD SENSE RESET  
GND CTS CTR  
TPS3842A011DRLR

Threshold: 0.7V

Undervoltage, Active low, 1% hysteresis

Voltage supervisor. Resets for 1s when UVLO occurs

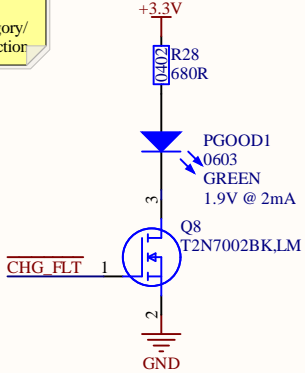
△ The TPS3842 handles the undervoltage condition. This is because the LM5069 has a 10ms undervoltage cycle time which is damaging to the hardware.  
Undervoltage: 18.81 - 19.19V  
Tcts time fault is allowed to occur: 5ms.  
Tctr: 1s reset time. Reset is latched for 1s, then the mosfet is turned on. This prevents damage to the mosfet due to a bad charger

△ Overvoltage: 27.86 - 30.02V  
Max current: 12.1 - 15.4A

△ Alternative ICs:  
<https://www.ti.com/product-category/power-management/power-protection>

△ Excel file with calculations: "Mosfet soft start calculator PSMNR90-80ASEJ works - V2" in Sim folder  
Mosfet requirements:  
<2mR RDSon @ 65C @ 12V Vgs. Multiply the max 25C RDSon by 1.2.  
<=100A @ 1ms @ 24V in the SOA curve @ 25C

FID4 FID5 FID6



Title		
Size	Number	Revision
A4		
Date:	3/24/2026	Sheet of
File:	C:\Users\...\TEST.SchDoc	Drawn By: