Hot Swap Selection Tool

Start

What is Your Nominal Bus Voltage?

Negative
Vin = -48V

Positive (Low)
Vin = 3.3V, 5V,12V

Positive (High)
Vin = 24V, 48V

Is Digital Monitoring (PMBus/I2C) Needed?

Yes

No

(Vin= -48V)

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Is Digital Monitoring (PMBus/I2C) Needed?

Yes

No

(Vin= 3.3V, 5V, 12V)

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Is Digital Monitoring (PMBus/I2C) Needed?

Yes

No

(Vin= 24V, 48V)

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Special Features?

Dual Channel

Current Monitor
(I-Mon)

ORing + Hot Swap

Power Limit / SOA Control

None

(Vin= 3.3V, 5V, 12V)

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Results for: (Vin= -48V; Digital Monitoring)

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				Communication Type
				Current-Limit [?]	FET Power-Limit [?]	Under Voltage	Over Voltage	
LM5064		-80	-10	✔	✔	✔	✔	PMBus

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Results for: (Vin= Low; Digital Monitoring)

Intel Node Manager   Higher Measurement Accuracy

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				Communication Type
				Current-Limit ?	FET Power-Limit ?	Under Voltage	Over Voltage	
LM25066	I I/A A	2.9	17	✔	✔	✔	✔	PMBus
TPS2480	TPS2481	9	24	✔	✔			I²C
TPS2482	TPS2483	9	36	✔	✔			I²C
TPS2359		9	36	✔				I²C
LM25056	LM25056A	3	17	**Measuring device, not a Hot Swap device**				PMBus

(Vin= 3.3V, 5V, 12V)   Go Back   Start Over

Results for: (Vin= High; Digital Monitoring)

Intel Node Manager   Higher Measurement Accuracy

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				Communication Type
				Current-Limit ?	FET Power-Limit ?	Under Voltage	Over Voltage	
LM5066	LM5066I	10	80	✔	✔	✔	✔	PMBus
LM5056	LM5056A	10	80	Measuring device, not a Hot Swap device				PMBus

(Vin= 24V, 48V)

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Results for: (Vin= -48V)

Integrated ORing

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit	FET Power-Limit	Under Voltage	Over Voltage	Analog Monitoring
LM5067		-80	-9	✔	✔	✔	✔	PG
TPS2392	TPS2393 / TPS2393A	-80	-20	✔		✔	✔	$\overline{PG}$, $\overline{FAULT}$
TPS2394		-80	-12	✔		✔	✔	PG, $\overline{FAULT}$
TPS2350		-80	-12	✔		✔	✔	PG, $\overline{FAULT}$
LM5068		-90	-10	✔		✔	✔	PG
TPS2398	TPS2399	-80	-36	✔				$\overline{PG}$
TPS2390	TPS2391	-80	-36	✔				$\overline{FAULT}$

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Results for: (Vin= High Voltage)

Automotive

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit [?]	FET Power-Limit [?]	Under Voltage	Over Voltage	Analog Monitoring [?]
TPS2492	TPS2493	9	80	✔	✔	✔	✔	$\overline{PG}$, $\overline{FAULT}$
LM5069		9	80	✔	✔	✔	✔	PG
LM5060	LM5060-Q1	5.5	65	✔		✔	✔	$\overline{PG}$
TPS2490	TPS2491	9	80	✔	✔			PG
TPS2400		2	100			✔	✔	

(Vin= 24V, 48V)

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Results for: (Vin= Low Voltage; Dual Channel)

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit [?]	FET Power-Limit [?]	Under Voltage	Over Voltage	Analog Monitoring [?]
TPS2320	TPS2321	3	13	✔				$\overline{\text{FAULT}}$
TPS2300	TPS2301	3	13	✔				PG, $\overline{\text{FAULT}}$
TPS2310	TPS2311	3	13	✔				PG, $\overline{\text{FAULT}}$

(Vin= 3.3V, 5V, 12V)

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Results for: (Vin= Low; Current Monitoring)

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit ?	FET Power-Limit ?	Under Voltage	Over Voltage	Current Monitoring ?
TPS24770	TPS24771 TPS24772	2.5	18	✔	✔	✔	✔	✔
TPS24720		2.5	18	✔	✔	✔	✔	✔
TPS24740	TPS24741 TPS24742	2.5	18	✔	✔	✔	✔	✔
TPS2456A		8.5	15	✔		✔		✔

(Vin= 3.3V, 5V, 12V)

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Results for: (Vin= Low; ORing + Hot Swap)

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit [?]	FET Power-Limit [?]	Under Voltage [?]	Over Voltage	Current Monitoring [?]
TPS24740	TPS24741 / TPS24742	2.5	18	✔	✔	✔	✔	✔
TPS2456A		8.5	15	✔		✔		✔
TPS2358		8.5	15	✔		✔		

(Vin= 3.3V, 5V, 12V)

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Results for: (Vin= Low Voltage; Power Limit)

Hot Swap + ORing

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features					
				Current-Limit	FET Power-Limit	Under Voltage	Over Voltage	Current Monitoring	Low Vsense (≤ 25mV)
TPS24770	TPS24771 TPS24772	2.5	18	✓	✓	✓	✓	✓	✓
TPS24740	TPS24741 TPS24742	2.5	18	✓	✓	✓	✓	✓	✓
TPS24720		2.5	18	✓	✓	✓	✓	✓	✓
LM25069		2.9	17	✓	✓	✓	✓		
LM25061		2.9	17	✓	✓	✓			
TPS24710	TPS24711	2.5	18	✓	✓	✓			✓
TPS24712	TPS24713	2.5	18	✓	✓	✓			✓

(Vin= 3.3V, 5V, 12V)

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Results for: (Vin= Low; Special Features: None)

Device (click for product page)	Other Devices within Family (click for product page)	Vin Min (V)	Vin Max (V)	Features				
				Current-Limit [?]	FET Power-Limit [?]	Under Voltage	Over Voltage	Current Monitoring [?]
TPS2330	TPS2331	3	13	✔				
TPS24700	TPS24701	2.5	18	✔				

(Vin= 3.3V, 5V, 12V)

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Current Monitoring

- For devices with this feature, there is an analog pin that provides information on the amount of current the MOSFET is handling

- This pin can be attached to a microprocessor for continuous monitoring

IMON

R_{IMON}
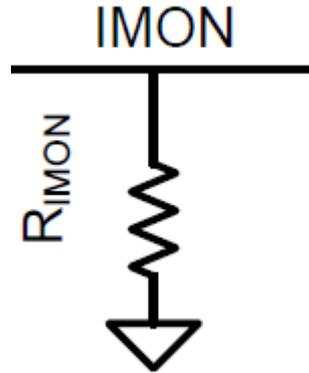
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Current Limit

- This feature limits the amount of current that goes through the MOSFET

- It is usually measured using a sense resistor

- By adjusting the sense resistor you can adjust the current limit of the MOSFET
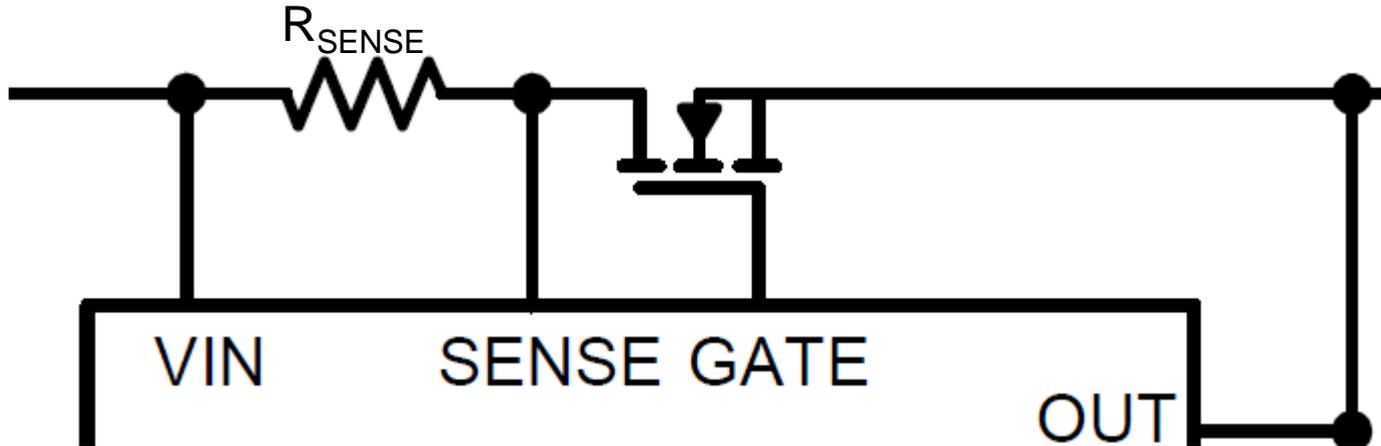
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Power Limit

- This feature limits the amount of power that passes through the MOSFET

- If set correctly, this protects the MOSFET from exceeding the Safe Operating Area (SOA)

PLIM

R_{PLIM}
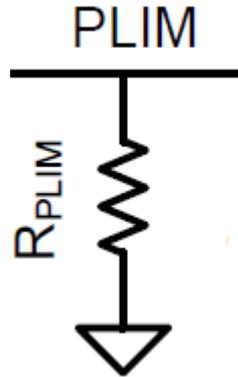
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Analog Monitoring

There are two common types of analog monitoring with Hot Swaps:
- PG (Power Good)
  - This signal becomes active once the Hot Swap has successfully powered on the MOSFET
- FAULT
  - When a fault occurs this signal becomes activated after a specified amount time
    - Time is based on TIMER pin configuration

- PG (Active High) sends out high voltage when active
- $\overline{PG}$ (Active Low) sends out Low voltage when active
- FAULT (Active High) sends out high voltage when active
- $\overline{FAULT}$ (Active Low) sends out high voltage when active

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