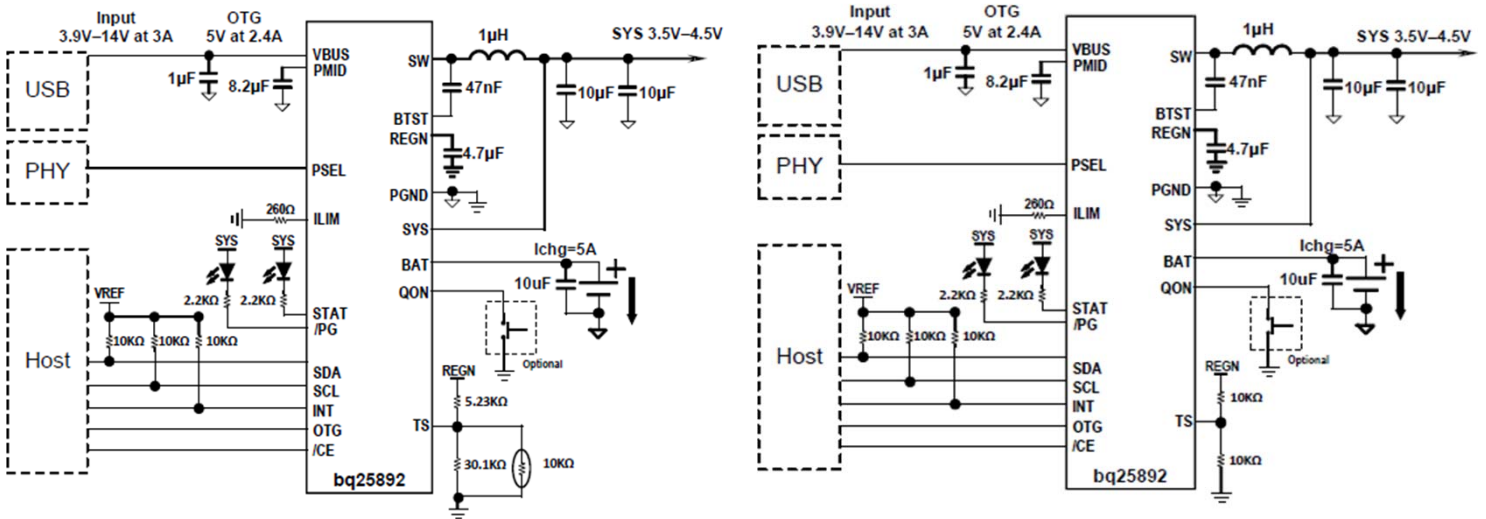


BQ25892 TYPICAL SCHEMATIC



BQ25892 SCHEMATIC CHECKLIST								
PIN NAME	REQUIREMENT	COMPONENT	MIN	TYP	MAX	DESCRIPTION	COMMENTS AND RELEVANT EQUATIONS	
PSEL	2	Required				Power source selection input.	High indicates a USB host source and Low indicates an adapter source. Do not float.	
/PG	3	Optional	PG resistor	10 kΩ		Open drain active low power good indicator	Connect to the pull up rail via 10-kΩ resistor. Connect to the pull up rail via 10-kΩ resistor. LOW indicates a good input source if the input voltage is within VVBUS_OP, above SLEEP mode threshold (VSLEEPZ), and current limit is above IBATSRC(30 mA).	
STAT	4	Optional	STAT resistor	2.2 kΩ	10 kΩ	Open drain charge status output	1. If not used, leave it float. 2. LOW indicates charge in progress. HIGH indicates charge complete or charge disabled. When any fault condition occurs, STAT pin blinks in 1 Hz. The STAT pin function can be disabled when STAT_DIS bit is set.	
SCL/SDA	5-6	Optional	SCL resistor	10 kΩ		I2C Interface clock and data	If I2C communication is not used, leave it float.	
		Optional	SDA resistor	10 kΩ			Connect SDA to the logic rail through a 10-kΩ resistor. If I2C communication is not used, leave it float.	
INT	7	Optional	INT resistor	10 kΩ		Open-drain Interrupt Output	1. If not used, leave it float. 2. The INT pin sends active low, 256-µs pulse to host to report charger device status and fault.	
OTG	8	Optional				Active high enable pin during boost mode.	1. If OTG boost mode is not used, short it to ground. 2. The boost mode is activated when OTG_CONFIG =1 and OTG pin is high	
/CE	9	Required				Active low Charge Enable pin.	1. /CE pin must be pulled High or Low. 2. Battery charging is enabled when CHG_CONFIG = 1 and CE pin = Low.	
ILIM	10	Optional	ILIM resistor		* Ω	Input current limit input.	1. The actual input current limit is the lower limit set by ILIM pin (when EN_ILIM bit is high) or IILIM register bits. Input current limit of less than 500 mA is not supported on ILIM pin. 2. If ILIM pin is open, the input current is limited to zero since ILIM voltage floats above 0.8 V. 3. If ILIM pin is short, the input current limit is set by the register. 4. The ILIM pin function can be disabled when EN_ILIM bit is 0.	
TS	11	Required	TS resistors and thermistor			Temperature qualification voltage input.	Connect a negative temperature coefficient thermistor. Recommend 103AT-2 thermistor.	
							1. If thermistor is not used, set TS pin voltage within normal range. 2. If thermistor is used, program temperature window with a resistor divider from REGN to TS to GND. Charge suspends when TS pin is out of range.	
/QON	12	Optional	Switch			BATFET enable/reset control input.	If not used, leave it float. The pin contains an internal pull-up to maintain default high logic.	
NC	24	Optional				NC	No connect	
VBUS	1	Required	VBUS caps	1µF		Input source to the charger	1. Place a 1-µF ceramic capacitor from VBUS to PGND and place it as close as possible to IC. 2. It is recommended to have a total of ~10µF capacitance at VBUS & PMID for USB input compliance.	
PMID	23	Required	PMID caps	8.2µF		Actual input source to the charger	Given the total input capacitance, put 1 µF on VBUS to PGND and the rest capacitance on PMID to PGND.	
VBAT	13-14	Required	VBAT caps	10µF	10µF	Positive battery connection point	1. Connect a 10 µF closely to the BAT pin. 2. Charger may operate normally when battery is not connected.	
VSYS	15-16	Required	VSYS caps	20µF	20µF	40µF	System connection point.	Connect a 20 µF closely to the SYS pin. The preferred ceramic capacitor is 6V or higher rating, X7R or X5R.
SW	19-20	Required	Output inductor	1µH		2.2µH	Switching node connecting to output inductor.	The charger device has internal loop compensator. To get good loop stability, 1-µH and minimum of 20-µF output capacitor is recommended.
		Optional	SW Resistor		* Ω		Switching converter snubber circuit	
		Optional	SW Cap		* F			
BTST	21	Required	BTST-SW cap	0.047µF	0.047µF	0.047µF	PWM high side driver positive supply.	Connect the 0.047µF bootstrap capacitor from SW to BTST.
		Optional	BTST resistor		* Ω		Bootstrap capacitor snubbing resistor	Help with EMI performance. Recommend unpopulated footprint on new designs.
REGN	22	Required	REGN cap	4.7µF	4.7µF	4.7µF	PWM low side driver positive supply output.	Connect a 4.7 µF (10 V rating) ceramic capacitor from REGN to analog GND. The capacitor should be placed close to the IC. REGN also serves as bias rail of TS pin.
PGND	17-18	Required					Power ground connection for high-current power converter node.	On PCB layout, connect directly to ground connection of input and output capacitors of the charger. A single point connection is recommended between power PGND and the analog GND near the IC PGND pin.
PowerPAD		Required						Always solder PowerPAD Pad to the board, and have vias on the PowerPAD plane star-connecting to PGND and ground plane for high-current power converter.