

Product Overview

STK57FU394AG-E: Intelligent Power Module (IPM), 2-in-1 PFC and Inverter, 600 V, 15 A

For complete documentation, see the data sheet.

The STK57FU394AG-E is a fully-integrated PFC and inverter power module consisting of a high-voltage driver, six motor drive IGBTs, one PFC IGBT, one PFC rectifier and a thermistor, suitable for driving permanent magnet synchronous (PMSM) motors, brushless-DC (BLDC) motors and AC asynchronous motors. The IGBTs are configured in a 3-phase bridge with separate emitter connections for the lower legs for maximum flexibility in the choice of control algorithm. An internal comparator and reference connected to the over-current protection circuit allows the designer to set individual over-current protection levels for the PFC and the inverter stages. Additionally, the power stage has a full range of protection functions including crossconduction protection, external shutdown and under-voltage lockout functions.

Features

- Simple thermal design with PFC and inverter stage in one package
- PFC operating frequency up to 40 kHz
- Cross-conduction protection
- Integrated bootstrap diodes and resistors
- Enable pin
- Adjustable over-current protection level

Applications

- Major Home Appliances
- Industrial HVAC
- Heat Pumps (Renewable Energy)

Benefits

- Simplified thermal design, minimal external components
- Reduced inductor size
- Robust operation under fault conditions
- Reduced external component count and layout size
- Robust operation under fault conditions
- Robust operation under fault conditions

End Products

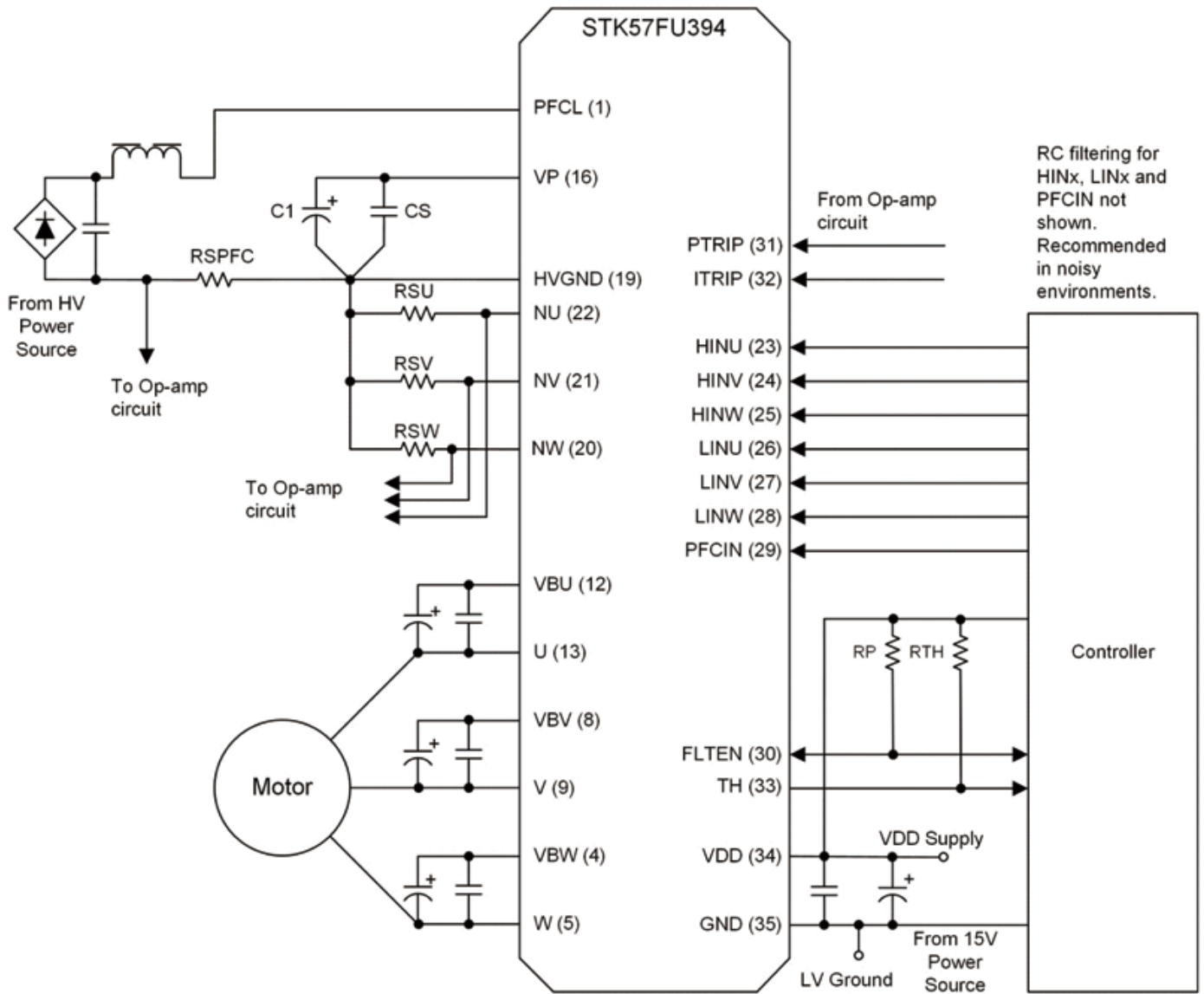
- Heat Pumps
- Home Appliances
- Industrial Fans
- Industrial Pumps

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Family	Rated Voltage Min (V)	$I_{O @ 25^{\circ}C}$ Min (A)	$V_{CE(sat) @ 25^{\circ}C}$ Typ (V)	$R_{DS(on)}$ (Ω)	Emitter Configuration	Shutdown Pin	Package Type
STK57FU394AG-E	9.9998	Pb-free	Active	2-in-1 PFC + Inverter	600	15	2	N/A	3 emitter pins	Yes	SIP-35

Application Diagram

Application Schematic



For more information please contact your local sales support at www.onsemi.com.

Created on: 12/7/2019