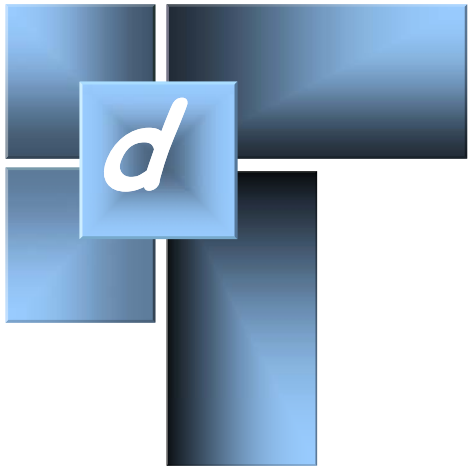
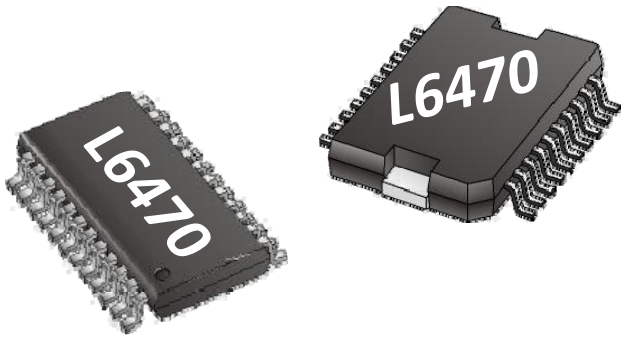
L6470 – the new dSPIN

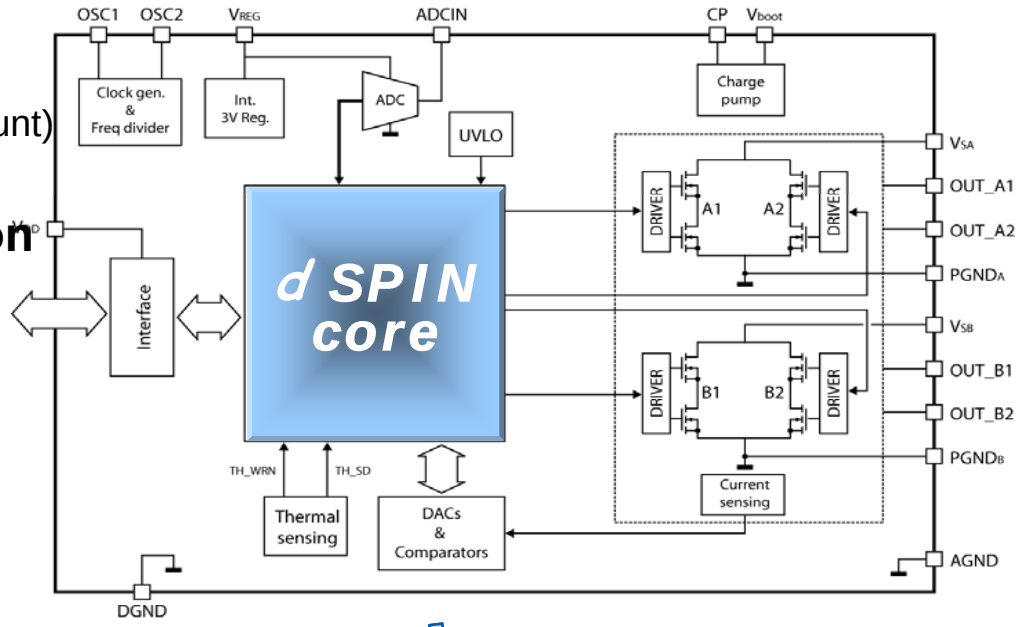
A quantum leap in microstepping

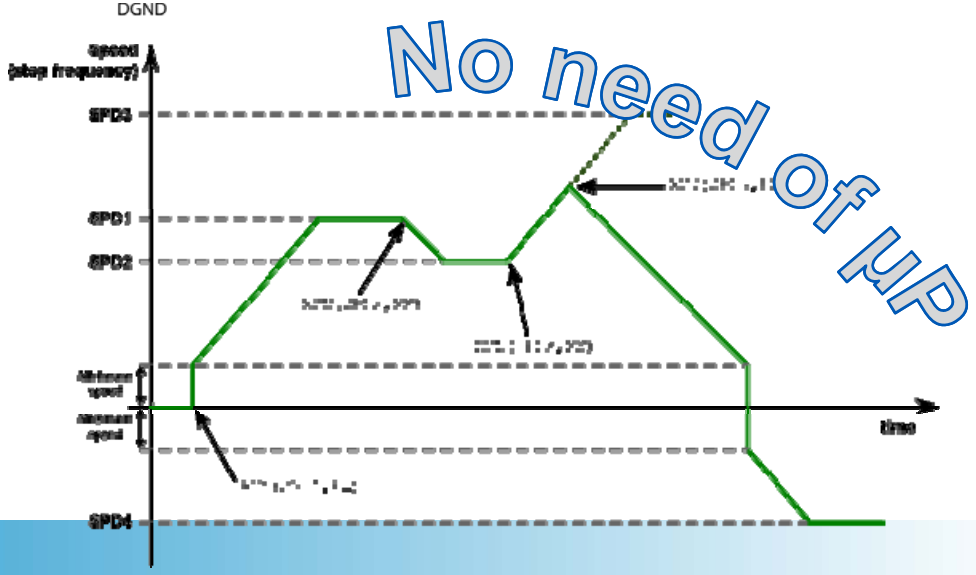


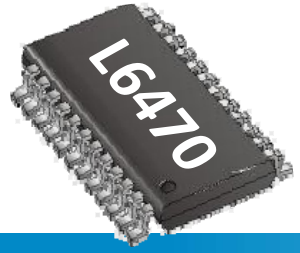


dSPIN - L6470
Monolithic Digital µ stepping Driver

- Supply voltage 8V – 45V
- **3Arms** (7A peak), **$R_{DS,ON}$ = 0.28 Ω**
- Integrated Current Sensing (no ext.shunt)
- **Up to 128 microsteps**
- **Innovative Voltage mode operation**
- Sensorless Stall Detection
- **Programmable speed profile**
- **Programmable positioning**
- 8bit 5Mhz **SPI interface**
  (Daisy Chain compatible)
- Integrated 16MHz oscillator
- **Integrated 5bit ADC**
- **Integrated 3V voltage regulator**
- Over Current, Over Temperature and Under Voltage protections
- PowerSO (ES) and HTSSOP

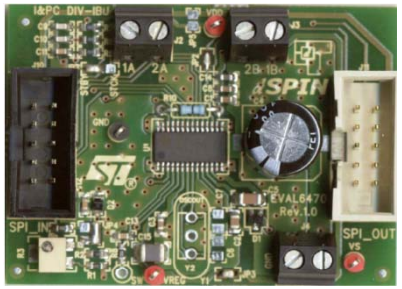


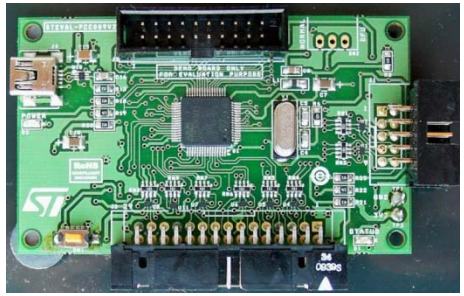




Available Tools and Documentation

- Sales Codes
  - L6470H -Tray
  - L6470HTR -Tape&Reel
  - ES available on L6470PD
- Product Page
  - http://www.st.com/dspin
- Data Sheet
  - http://www.st.com/stonline/products/literature/ds/16737.pdf
- Application Note (AN3103)
  - http://www.st.com/stonline/products/literature/an/16760.pdf
- dSPIN Evaluation Tool Software
  - http://www.st.com/internet/com/SOFTWARE_RESOURCES/SW_COMPONENT/SW_DEMO/dspin_evaluation_tool_1.6.zip
- Evaluation Board
  - EVAL6470
- Control boards
  - STEVAL-PCC009V2 (and –V1)
- dSPIN Firmware Library
  - Available on http://www.st.com/dspin





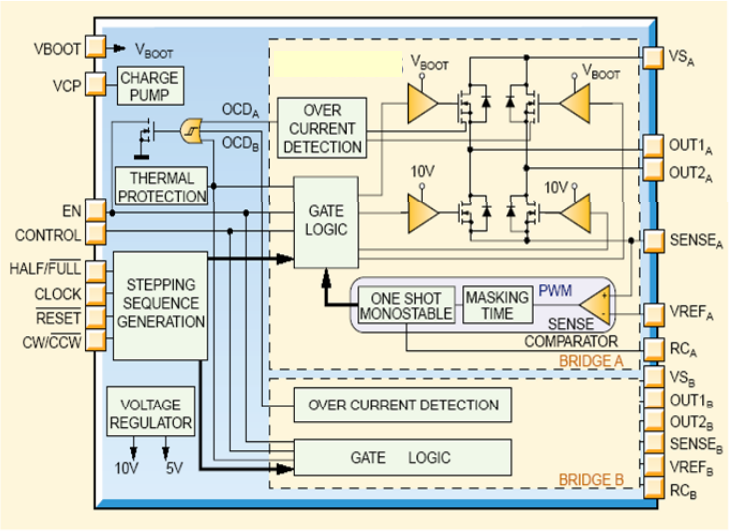
L62xxQ

QFN-PowerSPIN

L6206Q, L6207Q, L6208Q, L6235Q!

QFN – PowerSPIN – L620xQ now available for high power!

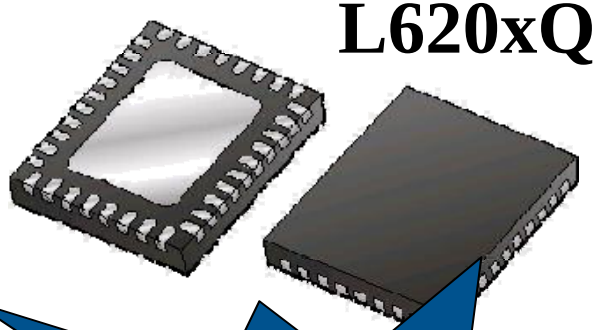
- Operative Voltage: 7V - 52V
- Output Peak Current 5.6A
- Rdson = 0.3Ω typ
- Operating Frequency up to 100KHz
- PWM embedded (L6207/L6208)
- Stepper decoding logic (L6208)
- Full set of protection
  - Cross conduction protection
  - Fixed Over Current Prot. (OCD)
  - Thermal Shut down



What's more than competitors

- Larger voltage range (Max operative of 52V vs. 35V)
- **Better Rdson** (typ. Value of 0.30Ω vs. 0.35Ω-0.45Ω)
- More efficient package
  - **QFN features extra miniaturization** (7x7mm)
- Better Over Current Protection (OCD)
  - **No need of external power resistor**
    - cheaper BOM)
    - Lower power dissipation
- **Competitive price!!!**

L620xQ



Ready for SOP!

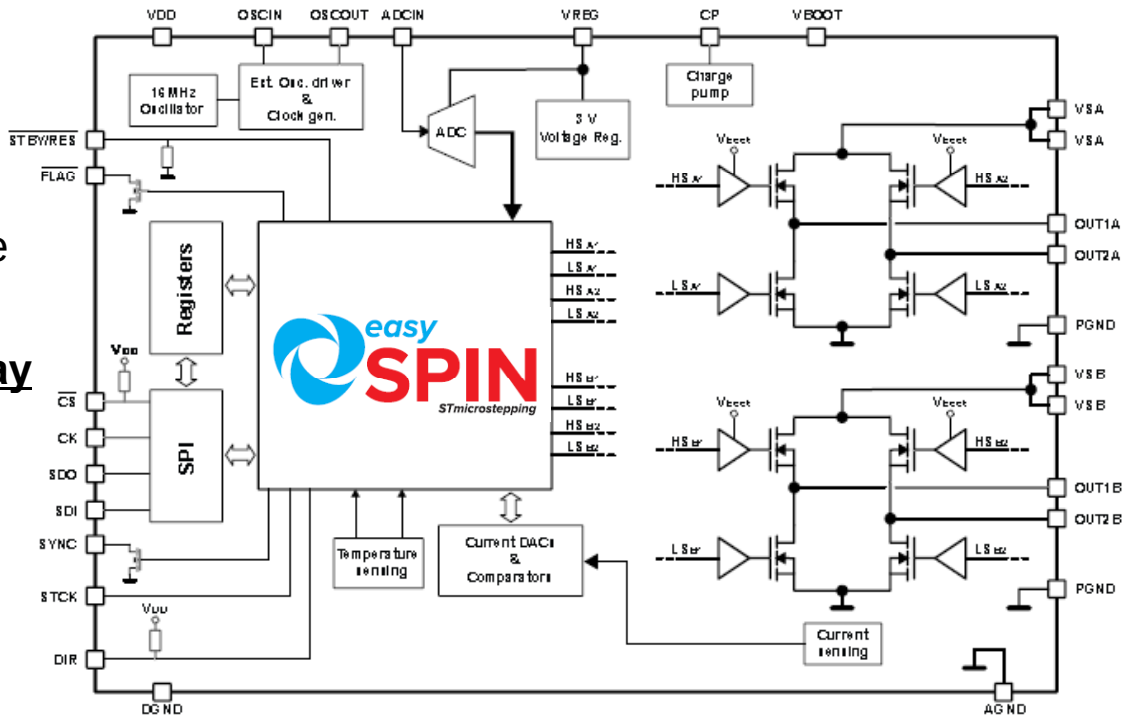
L6474 - easySPIN

Easy, Flexible & Innovative Microstepping

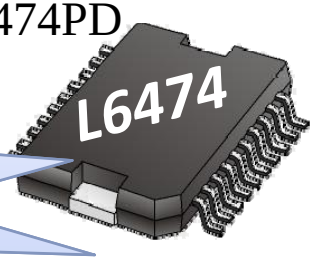
*easy*SPIN - L6474

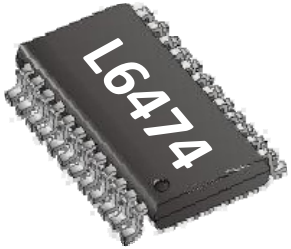
Flexible innovative microstepping motor driver

- **Operating voltage: 8 – 45V**
- **7.0 A output peak current (3.0 A r.m.s.)**
- Low RDSon power MOSFETs
- Programmable power MOS slew-rate
- Up to 1/16 microstepping
- **Current control with adaptive decay**
- **SPI interface**
- Low quiescent and standby currents
- Non dissipative current sensing
- **Full set of Protection**
  - Programmable non dissipative over current (on all power MOS)
  - Two levels over temperature protection
  - UVLO



L6474PD





L6474H

ES available
SOP e/o Q4 2011