

2021



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AMS & P&D
Growth Products
introductions as @Q1'21

EMEA Commercial Marketing

Sensors & Analog





LPS27HHTW

Pressure sensor digital output barometer with embedded temperature sensor

Water resistant with embedded Temperature sensor to monitor ambient temperature

- **10ATM (10Bar) resistant** (90m)
- 260 to 1260 hPa absolute pressure range
- Absolute pressure accuracy: 0.5 hPa
- Temp Accuracy: $\pm 1.5^{\circ}\text{C}$ (@ $+25^{\circ}\text{C}$ ~ $+65^{\circ}\text{C}$)
- Low Current Consumption 13 μA (HPM), 4 μA (LPM) @1Hz, 0.9 μA (PDM)
- ODR from 1Hz up to 200Hz
- 128 samples FIFO
- O-ring shaped PKG with full metal lid
- Gel protected membrane against many aggressive chemicals
- P2P with LPS27HHW

- *Wearables*
- *Gas meters*
- *Weather station*
- *Water depth monitoring*



Competition:

- TE: [MS5837]
- ALPS : [HSPPAD143A]
- Murata : [ZPA3456]
- Goertek : [SPL13]

ST Competitive Edge

- Higher accuracy and Improved power consumption
- Embedded temperature compensation
- Smallest and Robust PKG to harsh environment

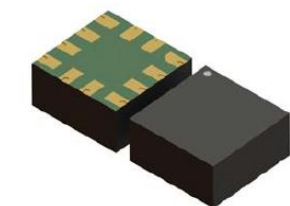




High-performance 3-axis accelerometer for automotive applications

Low Power & High Performance AEC-Q100 accelerometer

- 3-axis digital, up to $\pm 16g$ full scale ,12 to 14-bit resolution
- **Ultralow power:** $0.67\mu A$ @3V @1.6 Hz
- **High Output Data Rate** 1.6 KHz
- **5 running modes** to select accuracy / power consumption + low noise mode
- Operating temp: -40 to **115°C**
- **FIFO 32 level.**
- **LGA wettable flanks** (for easy check)
- Embedded features:
 - Interrupts
 - Filters
 - Temperature sensor
 - Self-Test



LGA-12 2x2x0.93mm³

AEC-Q100 qualified

• *Alarm / Anti-theft*

• *Insurance boxes*

• *In-dash car navigation*

• *Vehicle driving monitoring*

• *Inclination / orientation detection*

• *Motion-activated functions*



Competition:

- BOSCH: [SMA130] (limited Trange up to 85°C, more power consumption in LPM)
- NXP : [FXLS8962AF] (limited Trange up to 105°C)
- ADI : [ADXL312] , [ADXL313] (limited Trange up to 105°C)

ST Competitive Edge

- Multiple Resolution / Power configurations for high flexibility
- Diagnostics with self-test function testing
- Package with wettable flanks
- Extended operative T_{range} : -40°C to +115°C



L7983

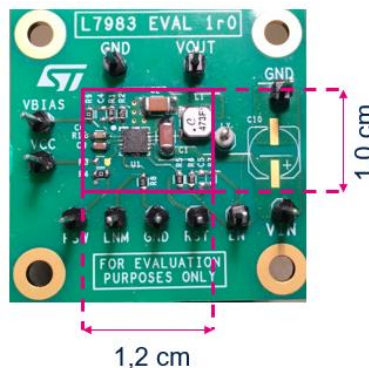
300mA Low-Quiescent Synchronous buck converter for Industrial bus

Suitable for every Industrial design

- Operating input voltage from 3.5 V to **60 V**
- F_{sw} adjustable from 200 kHz to 2.2 MHz
- Only **10 μ A quiescent current** (2.3 μ A shutdown current)
- Programmable dithering minimizes Electromagnetic Emissions
- **Low Noise Mode selection** (LNM) meet low noise application standard specification
- Internal compensation network
- Full set of protections



DFN 10L
(3x3x0.8)



Product available versions

L7983PU**33**R: Output Voltage 3.3V

L7983PU**50**R: Output Voltage 5.0V

L7983PUR : Output Voltage Adj. from 0.85 V to V_{IN}

Product Evaluation Tools

STEVAL-L7983ADJ : 12 V/0.3 A step down DC/DC converter (L7983PUR)

STEVAL-L7983V33 : 3.3 V/0.3 A step down DC/DC converter (L7983PU33R)

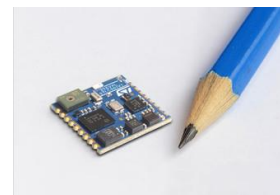
STEVAL-L7983V50 : 5.0 V/0.3 A step down DC/DC converter (L7983PU50R)



12 V, 24 V and 48 V buses



Battery-powered applications



Decentralized intelligent nodes



Smart Appliances

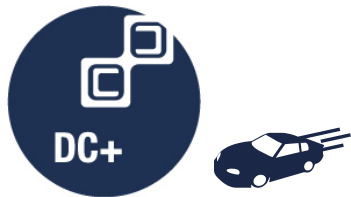


Competition:

- ADI : [LTC3631] (V_{IN} up to 45V, F_{sw} up to 600kHz)
- MAXIM : [MAX17552] (I_{OUT} up to 100mA) ; [MAX15062] (F_{sw} up to 500kHz)
- MPS : [MPQ2420] (I_q 20 μ A, TSSOP 4.9x4.3) , [MP4569] (I_q 20 μ A)

ST Competitive Edge

- Optimized efficiency in all input voltage range also at light load
- Ultra Low Power Consumption
- Enables extremely compact designs and thanks to its versatility, fits several application needs



Synchronous step-down converter configurable in isolated buck mode

Low-quiescent, synchronous rectification DC-DC converter for battery regulation

- V_{IN} 4 to 38 V
- 8 μA quiescent current in shutdown
- 2.5 A source / 1.5 A sink peak primary current capability
- T_{ON} sized to mask transition stages in order to skip transitory overcurrent peaks during transition stages
- Embedded primary output voltage supervisor
- Adjustable f_{SW} , synchronization and soft-start time



AEC-Q100 Grade1



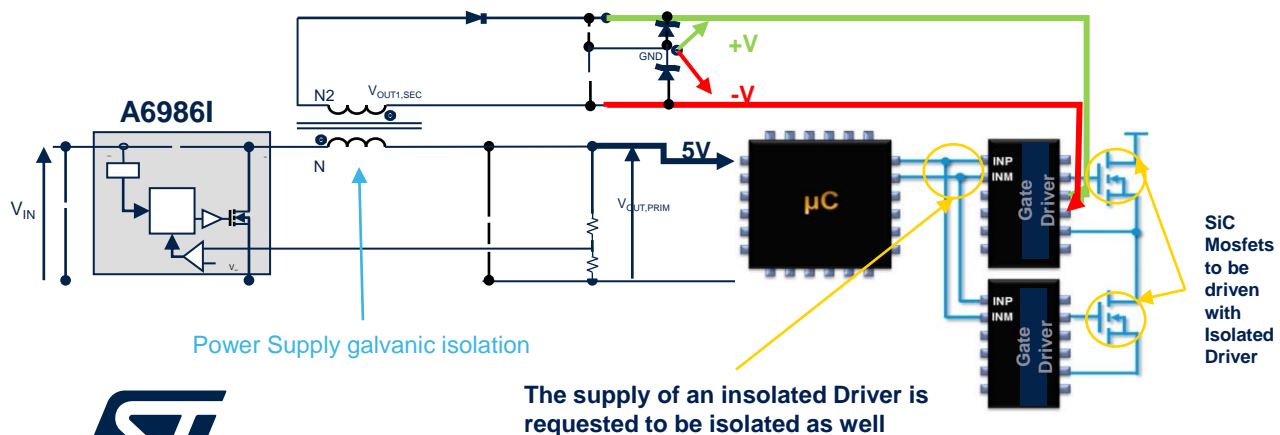
- Automotive isolated IGBT / SiC MOSFET gate drive supply
- OBC (On-board charger) for HEV/EV
- Electric Traction Systems
- Electric Motor drivers



Competition:
ADI, TI, Maxim

ST Competitive Edge

- Premium efficiency in all working stages
- Extended primary side negative current limit to comply to secondary current side with the typical transformer coil ratio
- Less complex solution than a flyback and no needs for an opto-coupler
- Companion chip for ST SiC MOSFET and Gate Drivers



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STEVAL-A6986IV1 , STEVAL-A6986IV2 Coming soon



LD49100

1 A, low quiescent current, low-noise voltage regulator with soft start - Automotive Grade

“The choice” for post regulation from low input voltage and to control power dissipation

- **Low Quiescent current and Low Drop voltage**

- $I_Q=20\mu A$ typ in ON mode no load, $1\mu A$ in OFF
- V_{DROP} 200mV typ @ full load

- V_{IN} 1.5 to 5.5V, guaranteed output current 1A
- Enable input, PGOOD (tighter limit) and Soft Start (1ms)
- Internal current and thermal limit
- Output Voltage Accuracy: $\pm 2\%$ max at $25^\circ C$



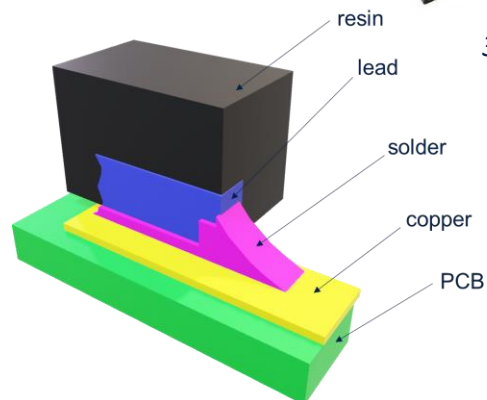
AEC-Q100 Grade1



DFN6L
3x3 WF

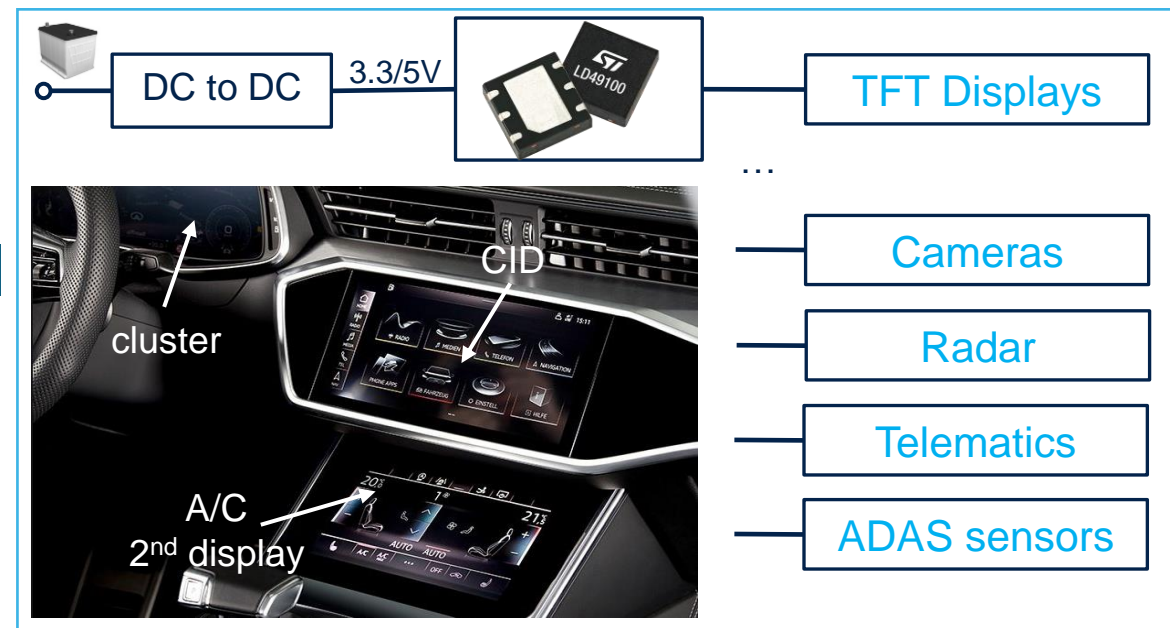
Product available versions

LD49100PURY : Adj. Output Voltage from 0.8 to 4.5V
LD49100PU12RY : Output Voltage 1.2V
LD49100PU18RY : Output Voltage 1.8V
LD49100PU25RY : Output Voltage 2.5V
LD49100PU33RY : Output Voltage 3.3V



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Wettable flanks for Automated Optical Inspection (AOI)

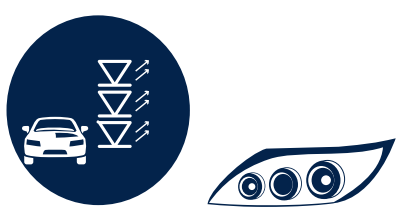


Competition:

- TI : [TPS746-Q1] (Higher V_{DROP} , Package WSON6L)
- ON : [NCV5661] (Higher V_{DROP} 1V)

ST Competitive Edge

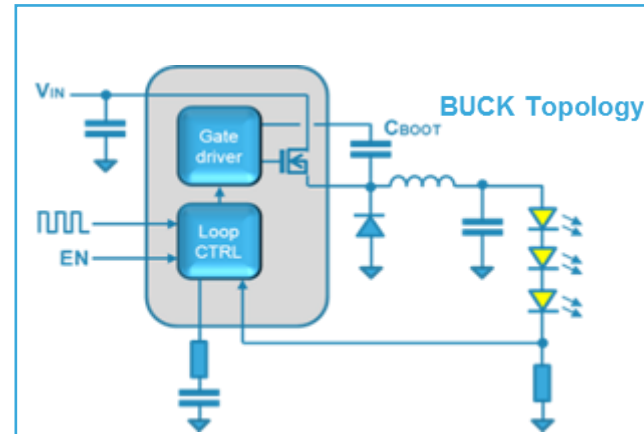
- Ultra low current consumption prolongues battery life
- Can be used for sequencing multiple power supplies in the system
- Stable with low ESR capacitors



ALED6000 LED Driver Buck Converter

61V/3A Single row LED driver with integrated buck converter and high dimming capability

- Up to **3A** DC output current
- 4.5 V to **61 V** operating input voltage
- Adjustable f_{sw} (250kHz - 1.5MHz)
- **Dimming function with dedicated pin**
- **Adjustable current limitation**
- Low IQ shutdown (11 μ A typ.) / Low IQ operating (3mA typ.)
- $\pm 3\%$ output current accuracy over temperature
- Enable with dedicated pin
- Adjustable soft start time
- V_{BIAS} improves efficiency at light load
- Auto recovery thermal shutdown



- *Automotive exterior lighting*
- *Daytime running lights*
- *High, low beam and fog lights*
- *Position lights / blinkers*

- Supported Topologies:
Buck, -BB, +BB, Floating Boost

Product Evaluation Tools



STEVAL-ILL078V1
Step down
1A 500Khz PWM

STEVAL-ILL079V1
Negative buck-boost
8-LEDS 0.5A PWM

STEVAL-ILL084V1
Floating Boost
 ≤ 15 LEDS, 500Khz PWM

ST Competitive Edge

- Single chip LED driver with integrated DC-DC converter
- Digital dimming capability
- Very low shutdown current
- Sync pin for multi-device applications

Dual High bandwidth (50MHz) Low offset (200 μ V) Rail-to-rail 5V Op amp

Faster than ever without sacrificing accuracy

- Gain bandwidth product **50MHz**, unity gain stable
- **Slew rate 30V/ μ s**
- **Low input offset voltage 50 μ V typ**, 200 μ V max
- Low input voltage noise density 6.5nV/ $\sqrt{\text{Hz}}$ @10kHz
- Wide supply voltage range: 2.2 V to 5.5 V
- Rail-to-rail input and output
- Able to handle an output capacitor up to 1 nF
- Extended temperature range: -40 °C to +125 °C



Industrial low-side current sensing



Photodiode transimpedance amplification



Power management in Automotive



Smart-Home systems



Telecom infrastructure



Mini SO (3 x 3 mm²)



DFN8 (2x 2 mm²)

SO8 and SOT23-5 coming soon

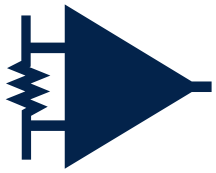


Soon available also in AG version

Competition:
TI [OPA2365]

ST Competitive Edge

- Accuracy fully guaranteed over temperature range
- Higher Slew Rate than competition
- More and smaller packages



TSC2010 / TSC2011 / TSC2012

High voltage, precision, bidirectional current sense amplifier

High performance current sensing in both directions with one single device

- Suitable for **High side** or **Low side** configuration
- Versions with different fixed gain available:
 - TSC2010: **20 V/V**; TSC2011: **60 V/V**; TSC2012: **100 V/V**
- **High voltage tolerance** (common mode) **on inputs**: from -20 to 70V
- Supply voltage range: 2.7 to 5.5 V
- **Shutdown function** for energy saving
- **$V_{IO} \pm 200\mu V$ maximum offset voltage @ 25°C**
- **Low offset voltage variation vs. temperature**: 5 $\mu V/^{\circ}C$ max
- **Low gain error**: 0.3% max. & **Low gain variation vs. T.**: 10ppm/ $^{\circ}C$ max
- **EMI filter integrated** and ESD protection
- Extended temperature range : -40 $^{\circ}C$ to +125 $^{\circ}C$



 Available also in **AG version**



MiniSO8

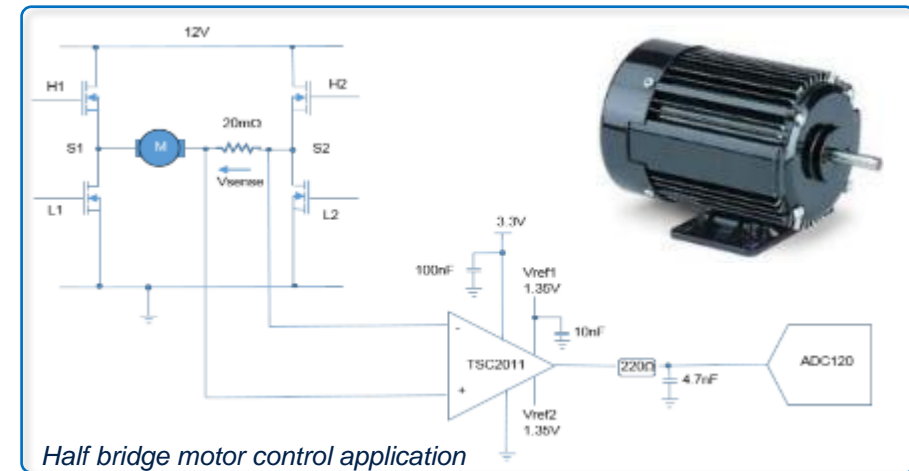


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Product Evaluation Tools

STEVAL-AETKT1V2 : Evaluation kit for high voltage bidirectional current sense amplifier

- *Motor control*
- *Data acquisition and instrumentation*
- *Industrial Process control*
- *Solenoid valve*



Competition (TSC2011 reference):

- TI: [INA201] (V_{IO} max 2500 μV ; NO shutdown)
- Analog Device: [AD8417] (V_{IO} max 400 μV , NO shutdown)
- MAXIM [MAX9919] (V_{IO} max 400 μV , NO miniSO-8 package)

ST Competitive Edge

- **Achieve higher precision** than competition, allowing measurement with **great accuracy** immune to T. variation
- **Faster in measurement.** Higher BW & Slew rate
- **Robustness & Shutdown function**

36V Single High Precision, High Speed and Low Noise amplifier

High precision at High Speed for Industrial & Auto environment

- **Wide supply voltage range:** +2.7V to +36 V
- **High speed:** 6MHz GBP and 3V/ μ s slew rate
- **Low offset voltage:** 300 μ V maximum (@ 25 °C)
- **Low Noise:** 12 nV / $\sqrt{\text{Hz}}$
- **Stability in accuracy over whole supply voltage range**
- Rail-to-rail input/output
- Integrated EMI filter
- Extended temperature range : -40 °C to +125 °C

Product available versions

TSB711A : LOW $V_{io(\text{offset})}$ (min. $\pm 300\mu\text{V}$) -> Higher accuracy

TSB711 : $V_{io(\text{offset})}$ (min. $\pm 800\mu\text{V}$)

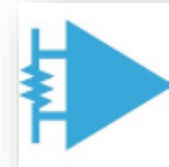
 Available also in AG version



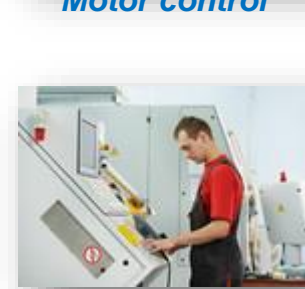
SOT23-5



Motor control



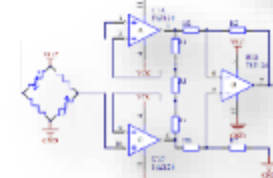
High-side and low-side current sensing



Data acquisition and instrumentation



Industrial process control



Strain Gauges
Hall effect sensors

Competition:

- Analog Device : [ADA409]
- Linear Tech : [LT1498], [LT1677]
- TI : [OPA197], [OPA991]

ST Competitive Edge

- Combination of **large bandwidth**, **high speed** and **low noise** make it suitable for a wide variety of applications
- **Very robust** ST Proprietary front-end technology taking advantages of both Bipolar and CMOS technologies

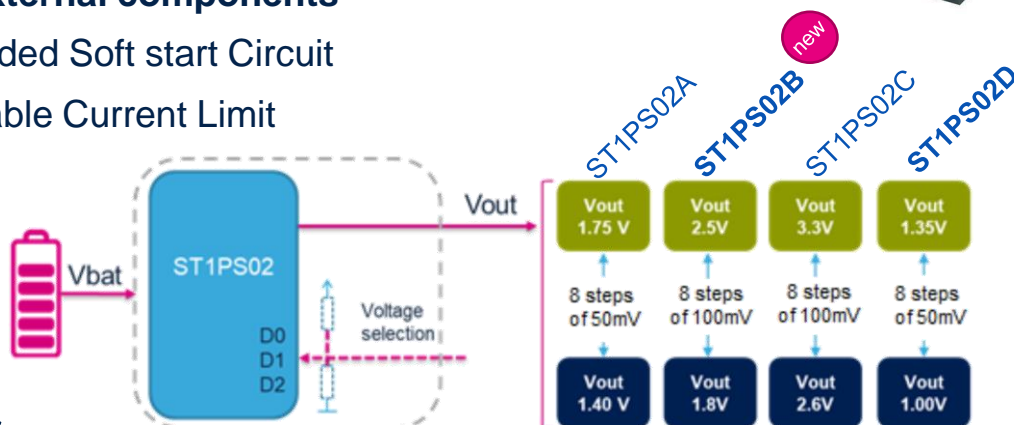


ST1PS02

400mA Step Down Converter for Battery Powered Applications

Minimum consumption in quiescent state for maximum performance at any load

- **Efficiency:** 95% typ. @ 1mA load, 92% typ. @ 400mA load
- **Extended input voltage range**, min. $V_{IN}=1.8V$, max $V_{IN}=5.5V$
- **Wide output voltage selection** with 3 digital control inputs
- **Low quiescent current** (typ. 500nA)
- **Synchronous rectification** (reduced BOM & space)
- Internal Loop Compensation
- **Tiny external components**
- Embedded Soft start Circuit
- Adjustable Current Limit



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Product Evaluation Tools

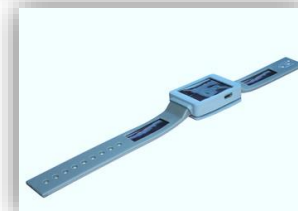
STEVAl-1PS02B : Evaluation board based on ST1PS02BQTR



Asset Tracking



Wireless Sensor Nodes



Energy Harvesting



Industrial Sensor



Single cell Li-ion Battery Applications

Competition:

- TI: [TPS62742]
- MPS

ST Competitive Edge

- **Dynamic output voltage**, selectable on the fly by an MCU
- **Very high efficiency** and extended lifetime application
- High integration for minimum board size





BLUENRG-LP

Programmable Bluetooth® Low Energy Wireless 5.2 Certified SoC

Low-Power BLE programmable SoC To Go Faster, Go Further!

- **High speed** 2 Mbps for faster data transfer
- **Only 0.9µA sleep current** : best on the market
- **Long Range** (125/500kbps) connectivity (up to 1.3Km)
 - RX Sensitivity level: -97dBm @ 1Mbps, -104 dBm @ 125bps
 - Up to +8 dBm output power level.
 - 4.3 mA TX current, 3.4 mA RX current
- **Advertisement Extension** and Dataset
- **Improved channel selection** and mapping
- **Over 20 connections** (1KB RAM per connection)

Product available versions

new

- BLUENRG-345AC : RAM 32kB; T_{range} -40 to 85 (°C)
- BLUENRG-345MC : RAM 32kB; T_{range} -40 to 85 (°C)
- BLUENRG-345MT : RAM 32kB; T_{range} -40 to 105 (°C)
- BLUENRG-355AC : RAM 64kB; T_{range} -40 to 85 (°C)
- BLUENRG-355MC : RAM 64kB; T_{range} -40 to 85 (°C)
- BLUENRG-355MT : RAM 64kB; T_{range} -40 to 105 (°C)



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Product Evaluation Tools

STEVAL-IDB011V1 Evaluation platform based on BlueNRG-355MC SoC



QFN48 (M version – 32 I/O)
6x6x0.9 mm³



QFN32 (A version – 20 I/O)
new 5x5x0.9 mm³

coming soon in
QFN32, WLCSP49 – 40 I/O



Smart tracking and Beacons
(Asset, People & Animal)



Industrial connectivity



Personal & Healthcare
electronics



Lighting and building automation



Connected toys, robots



Smart tools and
appliances

Use case

“I need a SoC hosting Application & BLE“

+ Easy and simple implementation with DK tool & examples

Competition:

- SiLabs : [BG22C222] (less sensitivity in output power level , only +6 dBm ; more power consumption than BLUENRG-LP)

ST Competitive Edge

- Industry leading radio performance with lowest power consumption
- Certified BLE 5.2 Advanced security set: 2Mbps, AE, Long Range
- Very fast OTA Firmware upgrade capability & reach ecosystem



MASTERGAN1&2

600V Half Bridge GaN HEMTs SiP

High Power density in a nutshell Integrated gate driver and two enhancement mode GaN transistors

- Reverse current capability
- Zero reverse recovery loss
- UVLO protection on low-side and high-side
- Internal bootstrap diode
- Interlocking function avoids cross-conductions
- Dedicated pin for shutdown functionality
- Accurate internal timing match
- 3.3 V to 15 V compatible inputs with hysteresis and pull-down
- Overtemperature protection



Product available versions

MASTERGAN1R: Symmetrical R_{DSon} 150mΩ + 150mΩ

- $I_{DS(MAX)} = 10\text{ A}$

MASTERGAN2R: Asymmetrical R_{DSon} 150mΩ (LS) + 225mΩ (HS)

- $I_{DS(MAX)} = 10\text{ A (LS)} + 6.5\text{ A (HS)}$

Product Evaluation Tools



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EVALMASTERGAN1: Demo board for MASTERGAN1

EVALMASTERGAN2: Demo board for MASTERGAN2

EVLMG1-250WLLC: 250 W Resonant LLC converter based on MasterGaN1



High Efficiency Power topologies up to 400W...and over

Up to 400 W

MASTERGAN1 is suited to Resonant LLC converter topologies mainly

Up to 65 W

MASTERGAN2 is suited to soft-switching and Active Clamp Flyback topologies mainly



Chargers and
adapters



Solar Power
DC-AC converters

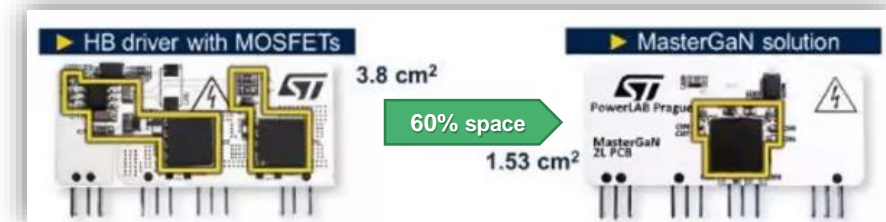


Energy storage
systems (UPS)



SMPS in Servers &
Infrastructure

Competition:
TI, NAVITAS



ST Competitive Edge

- High switching speed and High integration level implies simplified layout, BoM & weight reduction
- Flexible, easy, fast design and ecosystem reduce the time to market
- Safe and robust design prevents operating in low efficiency or dangerous conditions



Single chip with triple half-bridge gate driver for N-Channel power MOSFET

Low Voltage gate driver born to drive 3-ph. BLDC motors

- Operating voltage **5V to 75V** (V_{BOOT} 89V)
- **I = 600mA** sink/source driving capability
- **12V LDO** embedded (50mA)
- Adjustable dead time
- **Standby mode** for low consumption
- Embedded bootstrap diode
- **Desaturation** (MOS Short Circuit) protection; programmable
- **Fully protected** (UVLO, OCP, OTP and MOSFET V_{DS} monitoring)



QFN
4x4mm²



Product Evaluation Tools

EVALSTDRIVE101 : STDRIVE101 demonstration board for three-phase brushless motors (Up to 75 V and output current up to 20 A_{rms})



Three-phase BLDC motors



Fan, pumps and servo drives



Cordless appliances



E-bike and e-scooters



Cordless garden tools



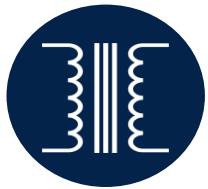
Cordless power tools

Competition:

TI, Toshiba, Trinamic, MPS

ST Competitive Edge

- Lower propagation delay than competition
- High voltage capability jointly to best fit in current capability
- Reach level of protections and embedded features
- The most complete motor control ecosystem



STISO621W

Dual channel digital isolator

6kV Galvanic isolation high-speed isolated communication channels

- Dual channel, one channel for each communication direction
- High data rate up to **100 Mbps**
- **High common-mode transient**: >50k V/μs
- Low Pulse width distortions < 3 ns
- From 3 V to 5.5 V supply levels
- 3.3 V and 5 V level translation
- Wide T_{amb} range operation: - 40°C to 125°C

• *Factory Automation*

- *Optocoupler replacement in industrial*
- *Industrial field bus isolation*
- *Size-critical multichannel isolation*



• *Battery monitor and motor drive*

• *Metering*

• *Stepper motor drive*

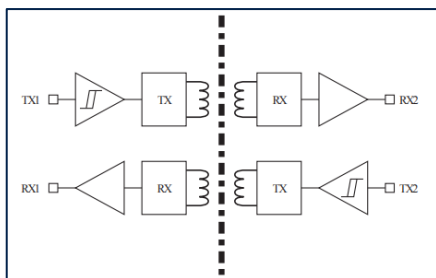
Competition:

ADI: ADuM1201

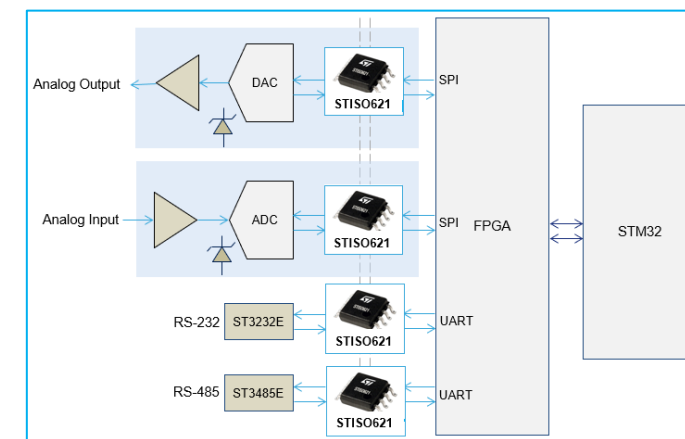
TI: ISO7721

ST Competitive Edge

- Guarantees High level of data integrity during transmission across the isolation barrier



S08 Wide body



Typical application in Factory Automation

Product Evaluation Tools

EVALSTISO62X1: Dual channel digital isolator evaluation board

EVALSTPM-3PHISO: Three-phase full shunt electricity meter evaluation board based on STPMS2 and STISO621W









VIPER31x

Energy Saving Off-line High Voltage Converter

Smartly integrates an 800 V power MOSFET with PWM current-mode control

- **800 V** avalanche-rugged MOSFET ($R_{DS(ON)}$ 3.5Ω)
- Drain current limit protection (OCP):
 - VIPER317 : **710 mA** VIPER318 : **850 mA** ; VIPER319 : **990 mA**
- **Wide supply voltage range:** 4.5 V to 30 V
- **< 20mW stand-by @ 230VAC**
- Typical power capability: 27W (Adapter) / 31W (Open frame)
- High-voltage startup & Soft Startup
- **Under voltage protection, Over voltage protection, Thermal shutdown**
- Jittered switching frequency reduces the EMI filter cost

Product available versions

-  VIPER317LD: Typ. SW. frequency 60KHz
-  VIPER317HD: Typ. SW. frequency 132KHz
- VIPER318LD: Typ. SW. frequency 60KHz
- VIPER318HD: Typ. SW. frequency 132KHz
-  VIPER318XD: Typ. SW. frequency 30KHz
-  VIPER319LD: Typ. SW. frequency 60KHz
-  VIPER319HD: Typ. SW. frequency 132KHz
-  VIPER319XD: Typ. SW. frequency 30KHz



SO16N



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Product Evaluation Tools

STEVAL-VP318L1F: 15 V / 1.2 A SSR Flyback converter based on VIPer318L

STEVAL-VP319X1B: 5 V / 0.6 A Buck converter based on VIPER319X

Auxiliary Power Supply

Flyback, buck and buck boost topologies supported

• Low power adapters and SMPS for:

- Home appliances
- Home automation
- Industrial
- Consumers
- Lighting



Competition:

Power Integration, ON Semi, MPS

ST Competitive Edge

- High level of protections ensure safe operation mode
- Allows the design of applications compliant with the most stringent energy saving regulations

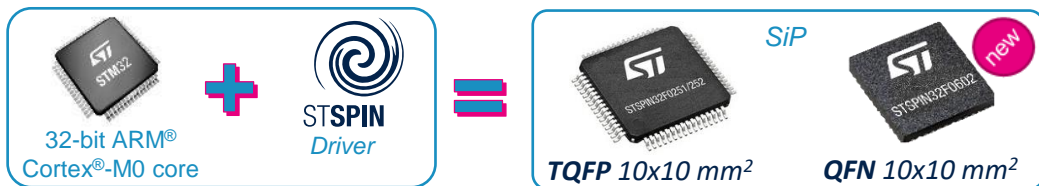


STSPIN32F0251/2 & STSPIN32F0601/2

Advanced 250V & 600V 3-phase BLDC Motor controller with embedded MCU

Ease the design of high-voltage BLDC motors

- 21 general-purpose I/O ports (GPIO) & 6 general-purpose timers
- Gate driving voltage range from **9V to 20V**
- **12-bit ADC converter** (up to 10 channels)
- Full set of protections & functions: Over current, UVLO, Interlocking and deadtime
- **Smart shutdown** and Standby mode for **low power consumption**
- **FOC & 6-step FW support**, sensored and sensorless



Product versions

STSPIN32F0251: $V_s=250V$; max. I_{GATE} (A) 0.25 / 0.35 (source/sink)

STSPIN32F0252: $V_s=250V$; max. I_{GATE} (A) 1 / 0.85 (source/sink)

STSPIN32F0601: $V_s=600V$; max. I_{GATE} (A) 0.25 / 0.35 (source/sink)

STSPIN32F0602: $V_s=600V$; max. I_{GATE} (A) 1 / 0.85 (source/sink)

Product Evaluation Tools

EVSPIN32F0251S1 : 3-phase inverter based on STSPIN32F0251

STEVAL-PT0012v1 : Compact reference design based on STSPIN32F0252

EVSPIN32F0601S1 : 3-ph. inverter based on STSPIN32F0601

EVSPIN32F0601S3 : 3-ph. inverter based on STSPIN32F0601 with 3-shunt topology

EVSPIN32F0602S1 : 3-phase inverter based on STSPIN32F0602



3-phase BLDC motors

High voltage rail **250V**

- Battery operated power and garden tools
- Industrial fans and pumps
- Home automation
- Industrial automation (48V rail)

High voltage rail **600V**

- Home & Industrial refrigerators compressors
- Industrial drives, pumps, fans
- Air conditioning compressors & fans
- Corded power tools, garden tools
- Home appliances
- Industrial automation



STSPIN Studio



Competition:

Active-Semi, TI, Infineon

ST Competitive Edge

- **Flexible and compact** embeds **STM32 Cortex-M0** MCU
- **Smart Shutdown** protection & **outstanding robustness**
- Supported by **complete and easy-to use ecosystem** (STSPIN Studio SW dedicated to the STSPIN family with intuitive GUI)

Power & Discrete





New 1200V, 1700V Silicon Carbide MOSFET

Toward Power R-evolution

SCTWA40N120G2V-4

1200V 0.07Ω TO-247LL

SCT1000N170

1700V 1.0Ω



SCTW70N120G2V

1200V 0.021Ω TO-247



- Low on-state resistance over the entire temp range to 200 °C
 - reduced cooling requirements, higher system efficiency
- TO-247 4lead (Kelvin pin) to separate power path from driving signal for a faster switching event
 - Lower Eoff & Eon vs std TO-247
- Low Power Losses especially at high frequency (minimal variation versus temp.)
 - smaller passive components, more compact designs, cost benefits
- Body diode with no recovery losses
 - no need for external freewheeling diode, thus more compact systems

- *EV charge station*
- *Photovoltaics*
- *Factory automation*
- *Motor drive*
- *Data center power supply*
- *OBC & DC/DC converter*
- *Aux Power Supply*



Packages Solution



HiP247™

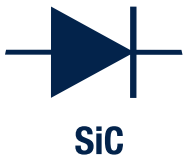


HiP247 LL™



HiP247- 4L

NEW



SiC Rectifiers – STPSC

family extension

650 V & 1200V ultra-high performance SiC Rectifiers (4 - 40 A)

STPSC40H12CWL
STPSC40065CW
STPSC20H12CWL
STPSC5H12D
STPSC15H12D
STPSC30H12CWL
STPSC10H12D
STPSC12065D
STPSC4H065B-TR
STPSC20065D
STPSC10065D
STPSC20H12G-TR
STPSC10H12GY-TR
STPSC40065CWY
STPSC20065GY-TR
STPSC20H12D
STPSC4H065DLF
STPSC6H065DLF
STPSC8H065DLF
STPSC10H065DLF
STPSC10065DLF
STPSC10H12B2-TR

new

Full Mass Market commitment

- Continuous Package innovations:
 - Up to less than 1mm thick packages (vs. DPAK: 2.30mm D2PAK: 4.45mm)
 - Higher creepage distance
- High power density devices
- Optimized V_F or optimized robustness versions
- Enlargement of the MM SiC Rectifier list every quarter



H: High Surge Capability
DLF: PowerFlat™ package
Y: Automotive Grade

Key Applications



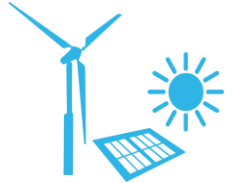
Factory Automation



SMPS & UPS



Telecom & Network



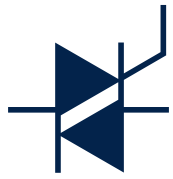
Renewable

Competition:

ON Semi (FFSMxx), Infineon (IDLxx), etc.

ST Competitive Edge

- Superior figure of merit
 - Market reference: **Low forward voltage drop (V_F)**
 - **No or negligible reverse recovery charge (Q_{rr})**
- Temperature independent switching behavior



High Temperature Triacs

family extension

The compact choice for heavy loads

Better **reliability** and **compact design**

- Maximum Junction Temp: T_J (max.) **150°C**

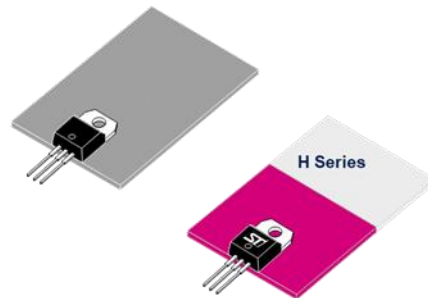
New introduced Triacs:

Full Ampere range available in '21
8|12|16|20|30|40|50 A - 800V devices (coming soon)

T835H-8G
T835H-8G-TR
T835H-8I
T835H-8T

NEW

T1235H-8G
T1235H-8G-TR
T1235H-8I
T1235H-8T



-50%
HEATSINK SIZE

Key Applications



**Water
Heater**



**Coffee
Machine**

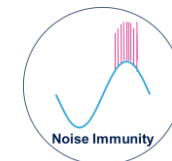


AC Motor

Competition:
WeEn

ST Competitive Edge

- Triacs Fully rated at 150 °C @ 800 V
 - most complete family on the market
- **Maximized current density** or **reduced heatsink size** by 50% (BOM cost reduction)
- High **noise immunity**



PSMC – Power Schottky & Ultrafast Rectifier

family extension

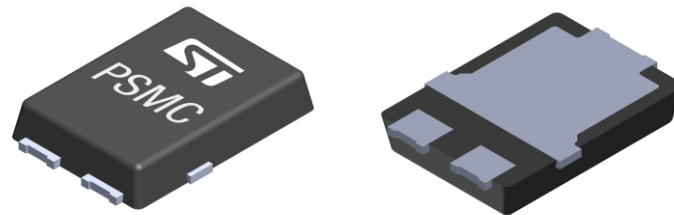
Complete portfolio for Industrial and Automotive markets

Small form factor rectifiers up to 200V

- Operating junction temp: T_J (max.) **175°C**
- Wettable flanks → automated optical inspection (AOI)
- -65 % volume shrink

STTH1002CSF
STTH1002CSFY
STTH602CSF
STTH602CSFY

STPS10200SF
STPS5S100SFY



Key Applications



LED Lighting



Household Robotics



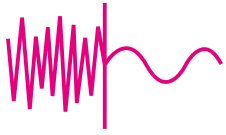
Telecom & Network



DC-DC Converters

ST Competitive Edge

- Most complete family on the market
 - 5-12A | 30-200V
 - Schottky- (up to 120 V) and Ultrafast Rectifiers (200 V)
 - Single or Dual Diode



MLPF – Ω Matching & Harmonic Filter

family extension

Compact high RF performance 2.4 GHz low pass filter

Direct **Companion Chips** for our
STM32WB (wireless) series
microcontrollers

New introduced types

MLPF-WB-01E3 **NEW**

MLPF-WB55-02E3

Companion chips

STM32WB55Cx, STM32WB55Rx,
STM32WB50xxx, STM32WB35xxx,
and STM32WB30xxx

STM32WB55Vx

Application Networks



Bluetooth 5



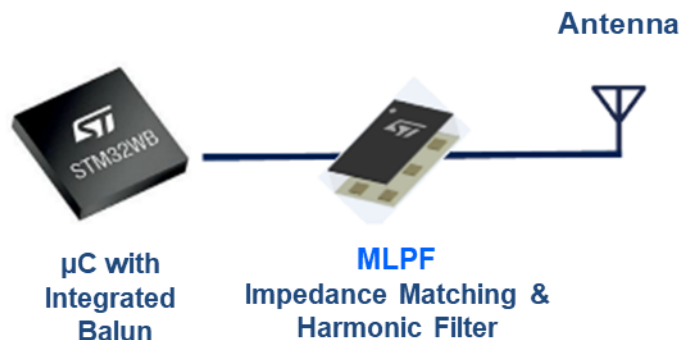
ZigBee® **OPENTHREAD**
released by Google

Zigbee

OpenThread

ST Competitive Edge

- One Device replacing discrete matching network plus harmonic filter
- Reduced PCB space





life.augmented

Tools

New Reference Boards available in Q1'21 (1/2)

Available in January 2021

Reference Board	Description	Key Products	Application Segment
EVSPIN32F06Q1S1	3-phase inverter based on STSPIN32F0601	STSPIN32F0601	Motor control
EVSPIN32F06Q1S3	3-phase inverter based on STSPIN32F0601Q with 3-shunt topology	STSPIN32F0601Q	Motor control
EVSPIN32F06Q2S1	3-phase inverter based on STSPIN32F0602	STSPIN32F0602	Motor control
EVSPIN32F02Q1S1	3-phase inverter based on STSPIN32F0251	STSPIN32F0251	Motor control
STEVAL-A6986IV1	38 V, 5W synchronous iso-buck converter evaluation board with dual isolated output based on the A6986I	A6986I	Automotive IC Eval Boards
STEVAL-ILL090V1	Evaluation kit Based on ALED8102S (8 channel LED driver with direct switch control)	ALED8102S	LED and Lighting Solution for Automotive
STEVAL-MKI216V1K	3-axis digital accelerometer sensor kit based on IIS3DHHHC	IIS3DHHHC	MEMS Motion Sensor
STEVAL-MKI217V1	Adapter board for standard DIL24 socket based on LSM6DSOX and LIS2MDL in sensor hub mode	LSM6DSOX, LIS2MDL	MEMS Motion Sensor
STEVAL-MKI218V1	AIS2IH adapter board for standard DIL24 socket	AIS2IH	MEMS Motion Sensor
STEVAL-STWINKT1B	STWIN Starter kit	STSAFE-A110, IIS3DWB, ISM330DHCX, IIS2MDC, IMP34DT05, IMP23ABSU	Sensor Solution for Industrial
STEVAL-MKI220V1	LPS27HHTW adapter board for standard DIL24 socket	LPS27HHTW	Pressure Sensor
STEVAL-MIC007V1	Microphone coupon board based on the IMP23ABSU analog MEMS microphone	IMP23ABSU	Microphone sensors for Industrial
STEVAL-MIC005V1	Microphone coupon board based on the MP23DB02MM digital MEMS microphone	MP23DB02MM	Microphone sensors for Consumer

New Reference Boards available in Q1'21 (2/2)

Available in January 2021

Reference Board	Description	Key Products	Application Segment
EVALMASTERGAN1	Demonstration board for MASTERGAN1 high power density half-bridge high voltage driver with two 650 V enhanced mode GaN HEMT	MASTERGAN1	PSU and Converter Solution
EVALMASTERGAN2	Demonstration board for MASTERGAN2 high power density half-bridge high voltage driver with two 650V enhanced mode GaN HEMT	MASTERGAN2	PSU and Converter Solution
EVLMG1-250WLLC	250 W Resonant LLC converter based on MasterGaN1	MASTERGAN1	PSU and Converter Solution
EVALST-ISOSD61L	Evaluation board for ISOSD61L isolated sigma-delta converter	ISOSD61L	PSU and Converter Solution
EVALST-ISOSD61T	Evaluation board for ISOSD61 isolated sigma-delta converter	ISOSD61	PSU and Converter Solution
EVALSTPM-3PHISO	Three-phase full shunt electricity meter evaluation board based on STPMS2, STISO621W and STM32F413RH	STPMS2, STISO621W	PSU and Converter Solution
STEVAL-USBDP27S	27 W USB Type-C™ and Power Delivery , adapter reference design with PPS	STCH03, TCPP01-M12, STD7N65M6	PSU and Converter Solution
STEVAL-VP12201F	12 V / 416 mA isolated flyback converter based on VIPer122LS	VIPer122LS	PSU and Converter Solution
STEVAL-DPSTPFC1	Digital totem pole boost with inrush current limiter	TN3050H-12WY, SCTW35N65G2V	PSU and Converter Solution
STEVAL-ISA211V1	Ultra-Wide Range 100W Flyback based on L6566BH multi-mode controller	L6566BH	PSU and Converter Solution
EVALSTGAP2SICSC	Demonstration board for STGAP2SICSC isolated 4 A single gate drive	STGAP2SICSC	Power control
STEVAL-LLL009V1	300W Output: Digitally Controlled HV AC Input HB LED Driver	STGAP2D, L6491, VIPER26K, STW20N95DK5, STW20N90K5, STP100N10F7	LED and General Lighting Solution
EVALSTISO62XV1	Dual channel digital isolator evaluation board	STISO family	Smart grid & Factory Automation
P-NUCLEO-IOD02A1	STM32 NUCLEO PACK for IO-Link Device applications based on L6364Q Transceiver, Industrial sensors and STM32L452RET6U MCU	L6364Q	Factory Automation

Thank you