



Order the Signal conditioning for automotive sample kit !

Discover and test our automotive-grade operational amplifiers, comparators and current sense amplifiers

Signal conditioning for automotive

A COMPLETE OFFER

ST provides a wide range of analog signal conditioning devices supporting the latest automotive applications. This booklet presents an overview of our AEC-Q100 Grade compliant operational amplifiers, current sense amplifiers and comparators. They are available with a wide range of options including packages with wettable flanks and exposed pad.

DFN/QFN wettable flanks with exposed PAD

PACKAGE

Packages with wettable flanks (WF) are a new type of plastic packages ICs. The mounting edge design of this package features a fillet as a termination to allow visual or optical confirmation that a proper connection has been made on a pad, which is generally not visible once the device is soldered on a board.

Using a QFN/DFN package with a wettable flanks enables automated optical inspection (AOI) of the soldering for better reliability and cost reduction. ST is implementing this innovation to meet stringent automotive industry requirements.

WF example external view

WF structure internal layers

resin lead frame
solder
copper
PCB

Side fillet to perform Automated Optical Inspection (AOI)

Operational amplifiers

Current sense amplifiers

Comparators

Notes: Samples are for evaluation only

Current sensing

CURRENT SENSE AMPLIFIERS AND OPERATIONAL AMPLIFIERS

A current sense amplifier is a differential amplifier providing an analog output voltage proportional to the current flowing in a power rail through a sense resistor. ST current sense amplifiers offer the following main benefits:

- Up to +100 V line monitoring
- Integrated EMI filters, integrated selectable gain, and shutdown function

Operational amplifiers

Operational amplifiers, current sense amplifiers, and comparators - Sample kit

ST Op Amps

Signal conditioning for automotive

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15V CURRENT SENSE AMPLIFIER

With 150 mV common mode and extremely low gain, the TSC1201 operational current sense amplifier ensures high accuracy and stands apart by delivering current components (torsion) needed for precision and sampling gain settings. It addresses new electric vehicle (EV) applications like battery management system (BMS) and high voltage power distribution unit (HV-PDU), as well as more traditional motor-controlled vehicle offers.

Software tools

ST addresses your key analog design but offers excellent support for engineers working on various applications. The small tool includes several design modules including user-friendly Signal Conditioning Design tool.

Mobile app

The ST OPAMPS APP is a free application for smartphones and tablets that helps you find the appropriate operational amplifiers, comparators, current sense amplifiers or power and high-speed amplifiers for your design. An algorithm cross-referencing tool is embedded in the application to ease product comparison.

Signal conditioning for automotive

Operational amplifiers

Comparators

As a leading supplier of comparators, ST offers a wide portfolio of devices for automotive applications. They are available with a wide range of options including packages with wettable flanks and exposed pad.

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ST Op Amps

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 **Order code: KIT2407AUTOSC**

min 25 pcs or multiple **Paid sample order** **Learn more**





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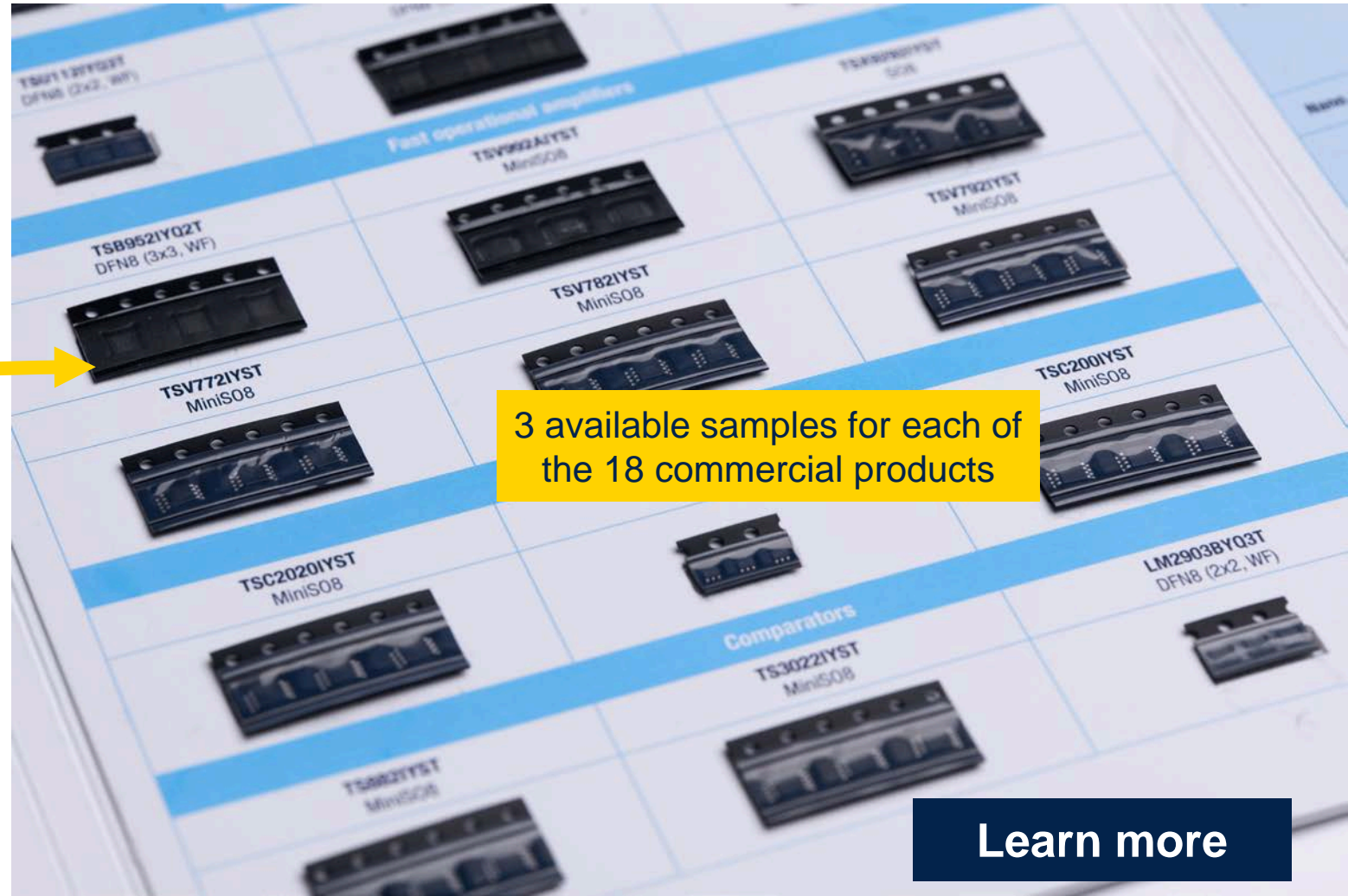
Discover and test our **automotive-grade** operational amplifiers, comparators and current sense amplifiers

18 commercial products

12 operational amplifiers

3 current sense amplifiers

3 comparators



3 available samples for each of the 18 commercial products



life.augmented

[Learn more](#)



Order the Signal conditioning for automotive sample kit !

Discover and test our **automotive-grade** operational amplifiers, comparators and current sense amplifiers

A complete offer

Samples

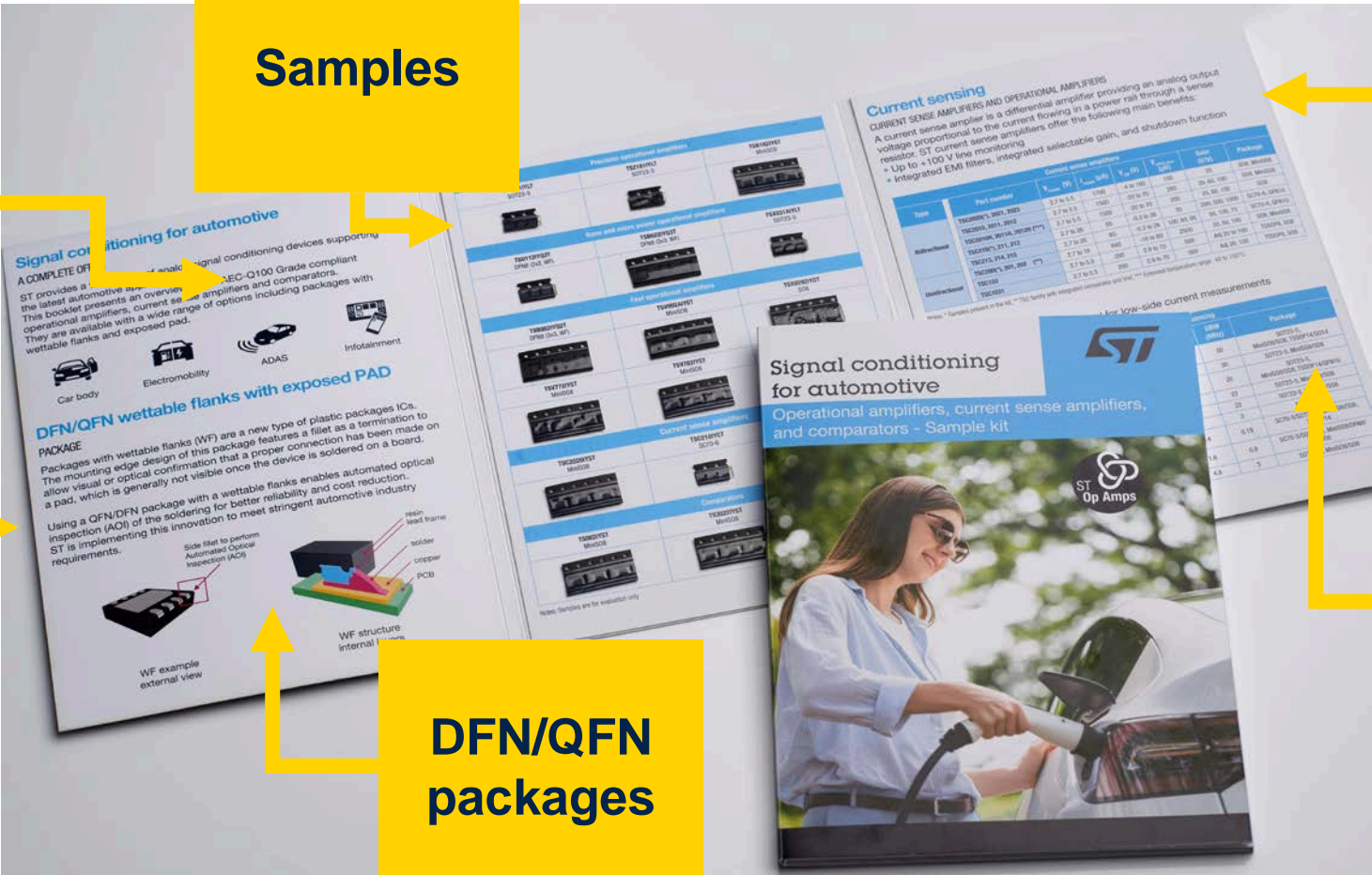
Overview of the product portfolio

Useful resources

DFN/QFN packages

Featured families

Learn more





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Product	Description	Package
Precision operational amplifiers		
TSZ151IYLT	Very high accuracy (7 μ V), high bandwidth (1.6 MHz), zero drift, 5 V op amp	SOT23-5
TSZ181IYLT	Very high accuracy (25 μ V), high bandwidth (3 MHz), zero drift, 5 V op amp	SOT23-6
TSB182IYST	Very high accuracy (20 μ V), zero-drift, rail-to-rail output, 3 MHz, 36 V op amp	MiniSO8
Nano and micro power operational amplifiers		
TSU112IYQ3T	Nanopower (900 nA), high accuracy (150 μ V), 5 V CMOS op amp	DFN8 (2x2, WF)
TSB622IYQ3T	Low power (375 μ A), high bandwidth (1.7 MHz), rail-to-rail output, 36 V op amp	DFN8 (3x3, WF)
TSX631AIYLT	Micropower (60 μ A), low offset voltage, rail-to-rail, 16 V CMOS op amp	SOT23-5
Fast operational amplifiers		
TSB952IYQ2T	High bandwidth (52 MHz), rail-to-rail output, 36 V op amp	DFN8 (3x3, WF)
TSV992AIYST	High bandwidth (20 MHz), rail to rail input/output, 5 V CMOS op amp	MiniSO8
TSX9292IYDT	High bandwidth (16 MHz), rail-to-rail, 16 V CMOS op amp	SO8
TSV772IYST	High bandwidth (20 MHz), low offset (200 μ V), rail-to-rail, 5 V op amp	MiniSO8
TSV782IYST	High bandwidth (30 MHz), low offset (200 μ V), rail-to-rail, 5 V op amp	MiniSO8
TSV792IYST	High bandwidth (50 MHz), low offset (200 μ V), rail-to-rail, 5 V op amp	MiniSO8
Current sense amplifiers		
TSC2020IYST	High voltage (100 V), precision, bidirectional, current sense amplifier	MiniSO8
TSC210IYCT	26 V, bidirectional, zero-drift, current sense amplifier	SC70-6
TSC200IYST	High voltage (80 V), unidirectional current sense amplifier with open drain comparator and ref	MiniSO8
Comparators		
TS882IYST	Rail-to-rail 1.1 V nano power, push-pull dual comparator	MiniSO8
TS3022IYST	Rail-to-Rail 1.8 V high-speed micropower comparator	MiniSO8
LM2903BYQ3T	Low-power, 36 V, dual voltage comparator	DFN8 (2x2, WF)