

# ST automotive solutions

## High-performance analog products



### Broad range of solutions for enhanced robustness

ST's broad range of op amps, comparators, current sensing, logic, watchdog and supervisor ICs meet the specific and rigorous requirements of the automotive market. This is the result of continuous quality improvement gained through our close collaboration with the leading automotive suppliers and car makers.

#### KEY FEATURES

- TS-16949 certification
- AEC-Q100 compliance
- Compliance with AEC-Q001 and AEC-Q002 guidelines for Statistical Yield Analysis (SYA) and Part Average Test (PAT) at EWS
- 0.03 ppm confirmed Failure Analysis Request per million units\*
- Wide temperature range including high-temperature-qualified devices (150 °C)
- Complete Production Part Approval Process (PPAP) is available
- Implementation of specific screening and test methods during manufacturing process
- Broad range of packages: SOT23, Mini SO, SO, TSSOP and QFN\*\*
- Automotive grade products emphasized by the Y letter in the part number (example TSX9291YLT)

#### KEY APPLICATIONS

- Temperature measurement
- Rain and light sensors
- Electric power steering angle measurement
- Low-side current measurement for motor control
- O<sub>2</sub> sensor
- Audio buffer
- Power seat motor current control
- Pedal angle measurement
- Advanced driver assistance systems (ADAS)
- LED and signaling
- Safety systems
- Car multimedia and infotainment systems
- Driving connected service

\* based on 0 Km returns on AG parts at automotive customers for year 2014

\*\* Coming soon

Amplifiers	Part number	Description	Package	Operating voltage (V)	Icc (max.) (µA)	GBW (typ.) (MHz)	Vio (max.) (mV)
Low power amplifiers	TSX9291YLT	16 MHz, rail-to-rail 16 V CMOS	SOT23-5	4 to 16	3400	16	4
	TS922AIYPT	12 V, precision rail-to-rail	TSSOP-8	2.7 to 12	1500	4	0.9
	TS9511IYLT	12 V, precision rail-to-rail	SOT23-5	2.7 to 12	1200	3	0.8
	TS982IYDWT	High output current 200 mA	S08	2.5 to 5.5	7200	2.2	5
	TSH80IYLT	Wide bandwidth, rail-to-rail with stby	SOT23-5	4.5 to 12	10500	65	10
	TSV912AIYST	Wide bandwidth rail-to-rail CMOS	MiniS08	2.5 to 5.5	1100	8	1.5
	TSV992AIYST	Wide bandwidth rail-to-rail CMOS	MiniS08	2.5 to 5.5	1100	20	1.5
Micro power amplifiers	TSX561AIYLT	Low-power single rail-to-rail 16 V CMOS	SOT23-5	3 to 16	360	0.9	0.6
	TSX634AIYPT	Micropower quad rail-to-rail 16 V CMOS	TSSOP14	3.3 to 16	60	0.2	0.5
	TS912AIYDT	Rail-to-rail 16 V CMOS	S08	2.7 to 16	350	1	5
	TSV631IYLT	Low voltage, rail-to-rail CMOS	SOT23-5	1.5 to 5.5	69	0.88	3
	TSV522AIYST	High merit factor rail-to-rail CMOS	MiniS08	2.7 to 5.5	60	1.15	0.6
Industry standard	TS951RIYLT	Rail-to-rail, low distortion	SOT23-5	2.7 to 12	900	3	6
	LM2902YPT	Low power quad bipolar	TSSOP14	3 to 30	750	1.3	7
	MC33079YDT	Low-noise 4.5 nV, quad	S014	5 to 30	2500	15	2.5
Precision amplifiers	TSX712IYDT*	Precision, rail-to-rail 16 V CMOS	S08	2.7 to 16	60	2.7	0.2
	TSZ121IYLT	5 µV Vio, single chopper	SOT23-5	1.8 to 5.5	40	0.4	0.005

\* Coming soon

Comparators	Part number	Description	Package	Operating voltage (V)	Icc (max.) (µA)	Response time (typ.) (ns)
Micropower comparator	TS331IYLT	Micropower version of LMV331	SOT23-5	1.6 to 5	30	200
High speed comparator	TS3011IYLT	Single rail-to-rail high-speed	SOT23-5	2.2 to 5	640	8
Industry standard	TS391IYLT	Low power single	SOT23-5	2 to 34	500	1300
	LM2901HYDT	Low power quad, up to 150°C	S014	2 to 36	500	1300
	LM2903YPT	Low power dual	TSSOP 8	2 to 36	500	1300

Current sensing	Part number	Description	Package	Operating voltage (V)	Common mode input voltage (V)	Icc (max.) (µA)	Voltage gain
Current sense amplifiers	TSC101AIYLT	High side current sense amplifier	SOT23-5	4 to 24	2.8 to 30	300	20
	TSC1021BIYPT	High side current sense amplifier	TSSOP8	3.5 to 5.5	2.8 to 30	300	50
	TSC103IYPT	High side current sense amplifier	TSSOP8	2.7 to 5.5	2.9 to 70	360	20 to 100

Logic ICs	Part number	Packages
Counters/Encoders/Decoders	M74HC4060Y - M74HC280Y - HCF4060Y	S0-14 / S0-16 / TSSOP-16
Gates	M74HC14Y - 74LCX00Y HCF40106Y - HCF4070Y - HCF4093Y	S0-14 / TSSOP-14
FlipFlop/registers	M74HC259Y - M74HC595Y - M74HC4094Y HCF4013Y - HCF4021Y - HCF4094Y	S0-16 / TSSOP-16
Buffer drivers	HCF4010Y - M74HC126Y - M74HC365Y	S0-14 / TSSOP-14 / TSSOP-16

Watchdog & supervisor ICs	Part number	Output type	Timeout period (twp)	WDO pulse width (tpw)	Package
Standalone	STWD100YNPWY3F	Open drain	3.4 ms	3.4 ms	SOT23-5
	STWD100YNWWY3F		6.3 ms	210 ms	
	STWD100YNXWY3F		102 ms	210 ms	
	STWD100YNYWY3F		1.6 s	210 ms	
Supervisor with watchdog timer	Part number	Reset threshold (V)	Timeout period (twp)	Reset pulse width (trec)	Package
	STM6321YSAXWY6F*	2.93	1.6 s	1.4 ms	SOT23-5

\* Coming soon

Note: Non exhaustive list, a complete list of part numbers is available at [www.st.com](http://www.st.com)



© STMicroelectronics - April 2015 - Printed in United Kingdom - All rights reserved  
The STMicroelectronics corporate logo is a registered trademark of the STMicroelectronics group of companies  
All other names are the property of their respective owners

