



Signal conditioning

TS33x series

LMV331

LMV393

LMV339



www.BDTIC.com/ST

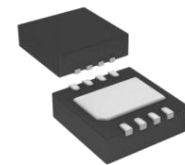
The benefits of using TS33x-LMV331-LMV393-LMV339

- The LMV331/393/339 and TS33x are two new low-power comparator families
- The LMV331/393/339 family is a drop-in replacement of the existing TI/NSC LMV331/393/339 family, but with superior ESD features
- The TS33x family outperforms the classical LMV331/393/339 family, offering a much lower current consumption for even better performances
 - Rail-to-rail inputs
 - V_{CC} min down to 1.6 V
 - Extended temperature range

TS331-TS332-TS334: low-voltage comparators

Industry's lowest current consumption for
general-purpose comparators

- I_{CC} divided by 3 versus traditional LMV331, LMV393 and LMV339 family
- As low as 30 μ A max power consumption for 200 ns typ response time
- Rail-to-rail inputs and open drain outputs
- V_{CC} min at 1.6 V versus the 2.7 V of traditional solutions
- Extended temperature range: -40 to 125 °C
- Use in multimedia applications (tablets, ultrabooks)

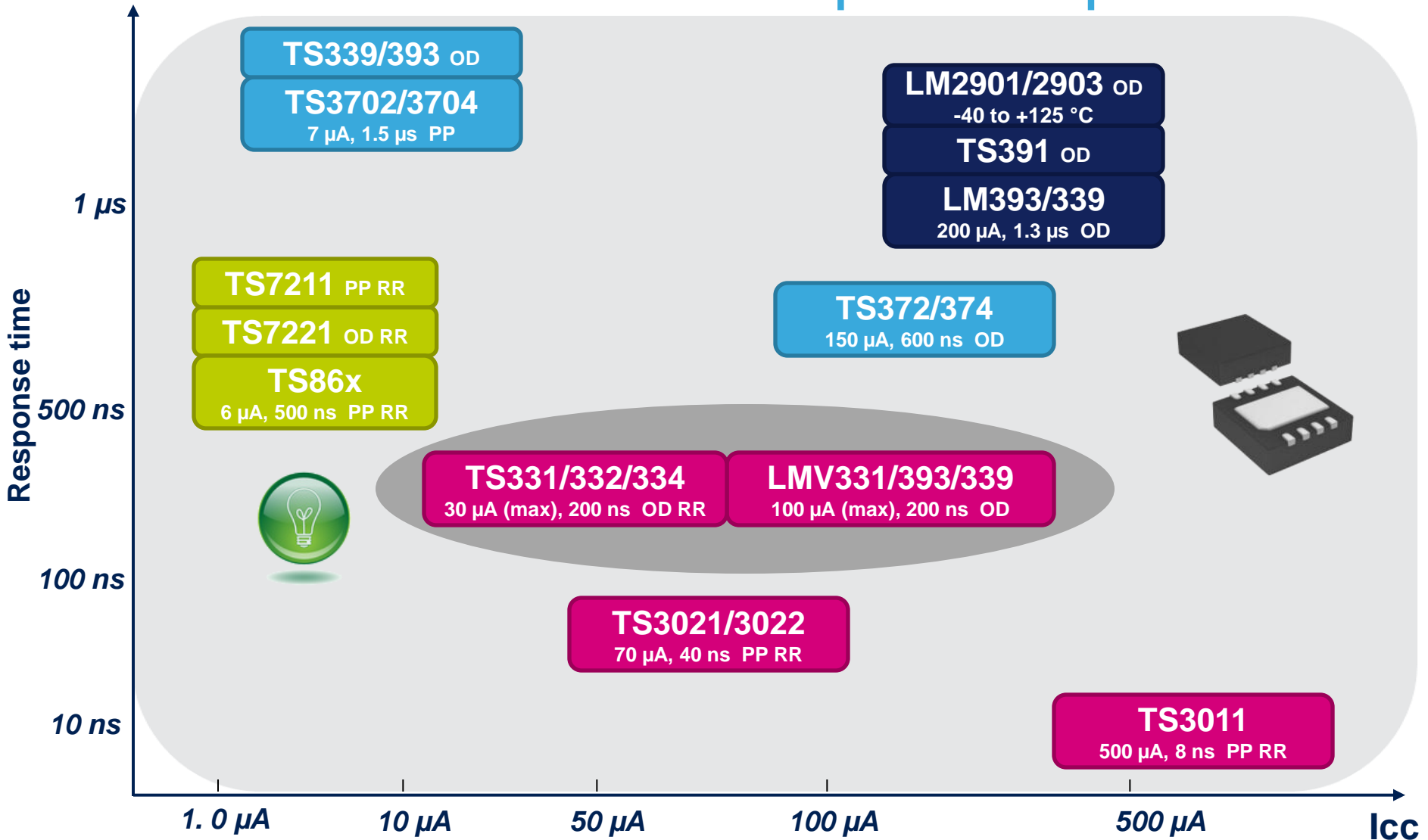


LMV331/393/339 and TS331/332/334

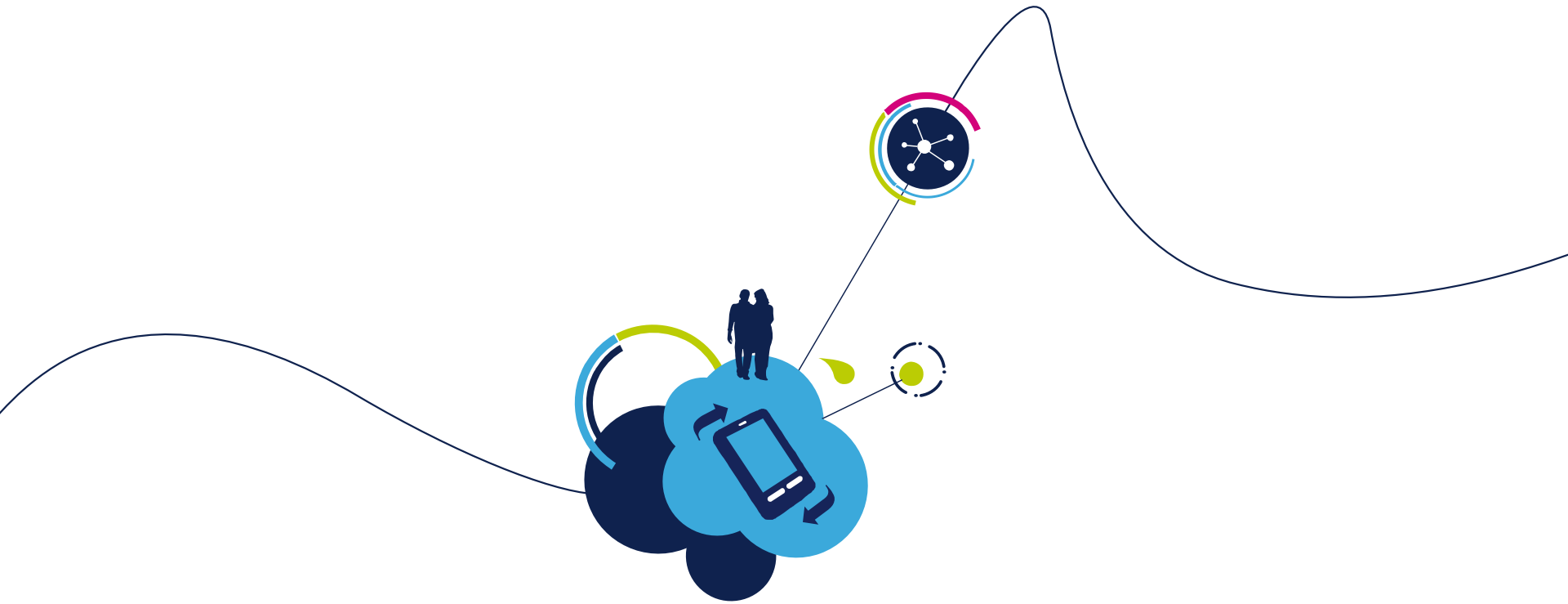
Drop-in solution

Parameter	ST offering		Competition	
	TS331	LMV331	LMV331 T	LMV331 O
Rail-to-rail inputs	Yes	No	No	No
Supply voltage	1.6 to 5 V	2.7 to 5 V	2.7 to 5 V	2.7 to 5 V
Supply current	30 μA max @ 2.7 V	100 μ A max @ 2.7 V	100 μ A max @ 2.7 V	100 μ A max @ 2.7 V
	34 μA max @ 5 V	120 μ A max @ 5 V	120 μ A max @ 5 V	120 μ A max @ 5 V
Propagation delay	200 ns typ.	200 ns typ.	200 ns typ.	200 ns typ.
Temperature range	-40 to +125 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Packages	SOT23-5/SC70-5	SOT23-5/SC70-5	SOT23-5/SC70-5	SOT23-5/SC70-5
ESD tolerance	2 kV HBM	2 kV HBM	800 V HBM	1 kV HBM
	200 V MM	200 V MM	120 V MM	100 V MM

ST's comparator portfolio



RR: rail-to-rail inputs, OD/PP:
open-drain/push-pull output



And more...

Automotive sample kit

Part number	Package	Description
LM2001PPT	TSSOP8	Low power dual voltage comparator: 400 μ A 1.3 μ s
TS301PMLT	SOT23-5	Low power single voltage comparator: 200 μ A 1.3 μ s
TSC1014MLT		
TSC1018MLT	SOT23-5	High side current sense amplifier: input 2.8 to 30 V - load dump
TSC101CMLT		
TSC1021PPT	TSSOP8	High-side current sense amplifier plus signal conditioning amplifier: input 2.8 to 30 V - load dump, reversed battery
TSC1031PPT	TSSOP8	High-voltage, high-side current sense amplifier: input 2.9 to 70 V or ± 2.5 to 65 V load dump, reversed battery
MC33079YDT	SO-14	Low noise quad operational amplifier
TS5070TLT	SOT23-5	High precision rail-to-rail operational amplifier: input offset voltage 100 μ V max
TS912A1DT	SO8	Rail-to-rail CMOS dual operational amplifier
TS362A1PPT	TSSOP8	Rail-to-rail high output current dual operational amplifier
TS9912A1YST	Micro508	Dual rail-to-rail input/output 6 MHz operational amplifiers
TS9902A1YST	Micro508	Rail-to-rail input/output 20 MHz OIP operational amplifiers

Operational amplifiers and comparators



STMicroelectronics

Automotive sample kit



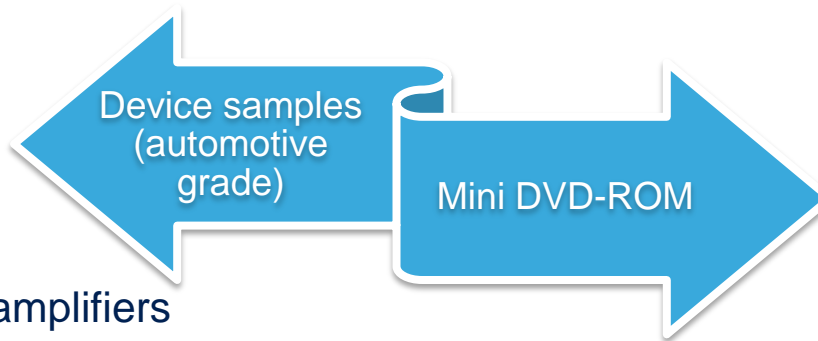
Scan this QR-code to visit our website.
www.st.com/stdlinear

Operational amplifiers and comparators - Automotive sample kit



outside

inside



- Comparators
- Operational amplifiers
- High-side current sense amplifiers

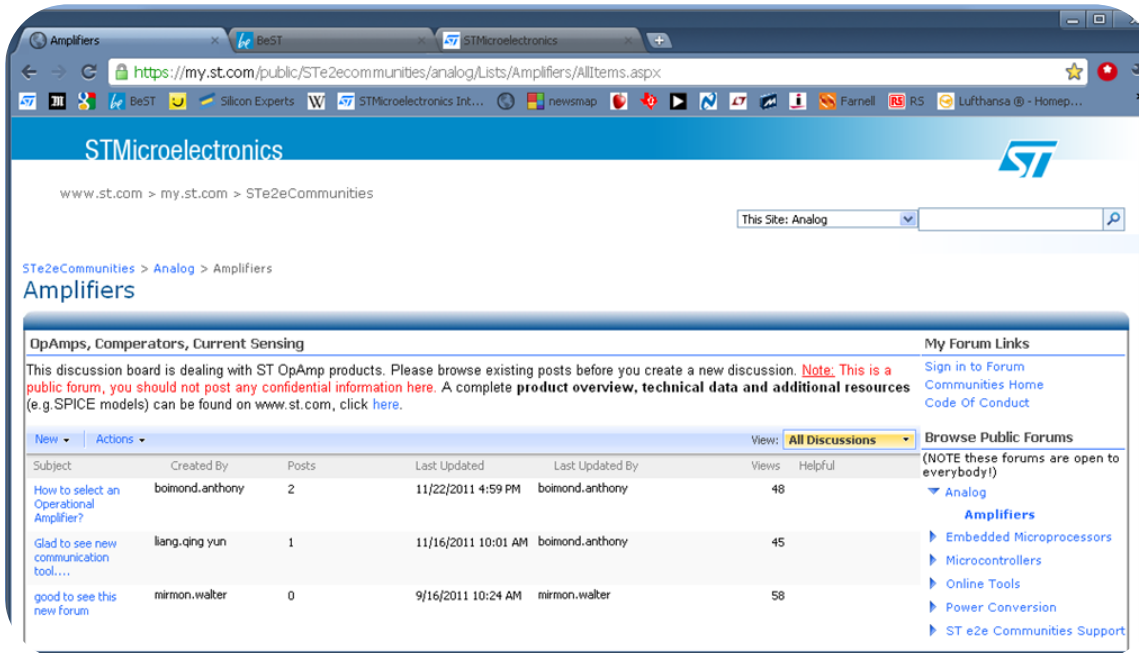
- Datasheets
- Macro models
- Application notes

ST op-amp apps on Android market



ST op-amps – op-amp forum

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The screenshot shows a web browser window displaying the STMicroelectronics forum page. The URL is <https://my.st.com/public/STe2ecomunities/analog/Lists/Amplifiers/AllItems.aspx>. The page title is "Amplifiers" and it is part of the "STMicroelectronics" website. The forum content includes a header for "OpAmps, Comparators, Current Sensing" and a table of posts. The table has columns for Subject, Created By, Posts, Last Updated, Last Updated By, Views, and Helpful. There are three posts listed:

Subject	Created By	Posts	Last Updated	Last Updated By	Views	Helpful
How to select an Operational Amplifier?	boimond.anthony	2	11/22/2011 4:59 PM	boimond.anthony	48	
Glad to see new communication tool...	lang.qing yun	1	11/16/2011 10:01 AM	boimond.anthony	45	
good to see this new forum	mirmon.walter	0	9/16/2011 10:24 AM	mirmon.walter	58	

On the right side of the forum page, there are sections for "My Forum Links" (Sign in to Forum, Communities Home, Code Of Conduct) and "Browse Public Forums" (NOTE these forums are open to everybody!). Under "Browse Public Forums", there is a list of forums including "Analog", "Amplifiers", "Embedded Microprocessors", "Microcontrollers", "Online Tools", "Power Conversion", and "ST e2e Communities Support".

- The op-amps forum was recently created as part of the e2e initiative (engineers to engineers) launched by ST.
- This forum is a useful place to find or request information about op-amps.



Click on the following link to reach the forum:

<https://my.st.com/public/STe2ecomunities/analog/Lists/Amplifiers/AllItems.aspx>

Sign in to post a message

HiRel and standard product portfolio

		ST's differentiation	Key products
Comparator	<i>Standard</i>	Broad portfolio of general-purpose products Automotive quality	LM2901, LM2903 LM393, LM339
	<i>Low power</i>	From low to micropower High performance Battery friendly	LMV331, TS331 TS86x
	<i>High speed</i>	Excellent speed/power ratio Low voltage	TS3021, TS3011
Operational amplifier	<i>Standard</i>	Broad portfolio of general-purpose products Automotive quality, tiny packages	LM358, LM324, LM290x, LMV3x, LMV82x
	<i>Low power</i>	From low to micropower Extend battery life High accuracy and reliability	TSV6x, TSV85x
	<i>Precision</i>	$V_{io} < 100 \mu V$ (max.) Low noise	TSV7x, TSZ1x
	<i>Current sensing</i>	Wide supply-voltage range Highly rugged Low current consumption	TSC101, TSC102, TSC103
Battery monitoring		Easy-to-build and smallest gas gauge solution extended battery life	STC3100, STC3105

Key messages

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**Reliable
delivery with
high quality
level**

**ST's op-amps
and
comparators
are the glue
between
analog and
digital**

**ST's portfolio:
high-
performance
analog and
high-volume
capability**

**First choice
when it
comes to
performance:
check out our
new product
families**