

# Car body solutions

## Selection guide



May 2008

[www.st.com/automotive](http://www.st.com/automotive)



The STMicroelect

China +86 2  
Singapore +6

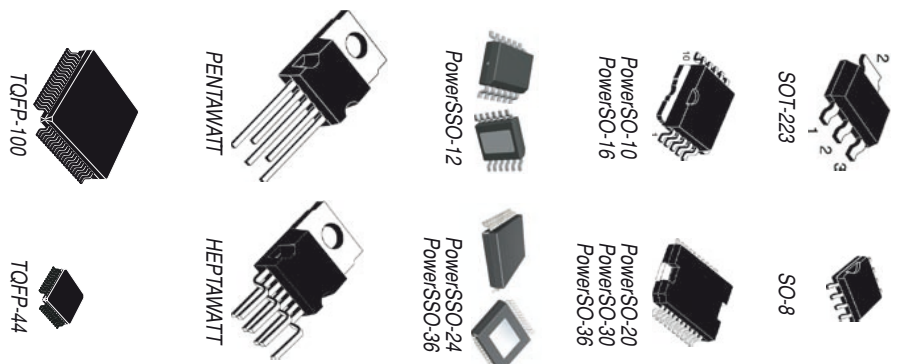
Order code

# High-side drivers

## Smart power high-side switches - single channel

Part number	Packages	Technology	Operating range $V_{cc}$ [V]	Max supply voltage $V_{cc}$ (max) [V]	Max on-state resistance $R_{DS(on)}$ (max) [m $\Omega$ ]	Current limitation $I_{lim}$ (typ) [A]	Digital status	Current sense
VN03	PENTAWATT	MO-1	5.5 ÷ 36	60	500	4	•	
VN03SP	PowerSO-10	MO-1	5.5 ÷ 36	60	500	4	•	
VN02H	PENTAWATT	MO-1	5.5 ÷ 36	60	400	6	•	
VN02HSP	PowerSO-10	MO-1	5.5 ÷ 36	60	400	6	•	
VN02N	PENTAWATT	MO-1	7 ÷ 36	60	400	6	•	
VN02NSP	PowerSO-10	MO-1	7 ÷ 36	60	400	6	•	
VN06	PENTAWATT	MO-1	5.5 ÷ 36	60	360	9	•	
VN05N	PENTAWATT	MO-1	7 ÷ 36	60	180	13	•	
VN06SP	PowerSO-10	MO-1	5.5 ÷ 36	60	180	9	•	
VN800PT	PPAK	MO-3	5.5 ÷ 36	41	135	1.3	•	
VN800S	SO 8	MO-3	5.5 ÷ 36	41	135	1.3	•	
VN16B	PENTAWATT	MO-2	6 ÷ 36	40	60	20	•	
VN16BSP	PowerSO-10	MO-2	6 ÷ 36	40	60	20	•	
VN750	PENTAWATT	MO-3	5.5 ÷ 36	41	60	9	•	
VN750-B5	P <sup>2</sup> PAK	MO-3	5.5 ÷ 36	41	60	9	•	
VN750LS	SO-8	MO-3	5.5 ÷ 36	41	60	16	•	
VN750S	SO-8	MO-3	5.5 ÷ 36	41	60	9	•	
VN750PT	PPAK	MO-3	5.5 ÷ 36	41	60	9	•	
VN750PEP-E	PowerSSO-12	MO-3	5.5 ÷ 36	41	60	9	•	
VN750SM	SO-8	MO-3	5.5 ÷ 36	41	55	9	•	
VN21	PENTAWATT	MO-1	5.5 ÷ 36	60	50	23	•	
VN820	PENTAWATT	MO-3	5.5 ÷ 36	41	40	13	•	
VN820SP	PowerSO-10	MO-3	5.5 ÷ 36	41	40	13	•	
VN820-B5	P <sup>2</sup> PAK	MO-3	5.5 ÷ 36	41	40	13	•	
VN820PT	PPAK	MO-3	5.5 ÷ 36	41	40	13	•	
VN820SO	SO-16L	MO-3	5.5 ÷ 36	41	40	13	•	
VN31	PENTAWATT	MO-2	5.5 ÷ 36	60	30	31	•	
VN31SP	PowerSO-10	MO-2	5.5 ÷ 36	60	30	31	•	
VN460SP	PowerSO-10	MO-2	5.5 ÷ 36	45	20	25	•	
VN920D-B5	P <sup>2</sup> PAK	MO-3	5.5 ÷ 36	41	18	45	•	
VN920DSO	SO-16L	MO-3	5.5 ÷ 36	41	18	45	•	
VN920	PENTAWATT	MO-3	5.5 ÷ 36	41	16	45		•
VN920-B5	P <sup>2</sup> PAK	MO-3	5.5 ÷ 36	41	16	45		•
VN920SP	PowerSO-10	MO-3	5.5 ÷ 36	41	16	45		•
VN920SO	SO-16L	MO-3	5.5 ÷ 36	41	16	45		•
VN920DSP	PowerSO-10	MO-3	5.5 ÷ 36	41	16	45	•	

### Packages



Note: Packages not to scale

<b>VN920PEP-E</b>	PowerSO-10	MO-3	5.5 ÷ 36	41	10	75	•	
<b>VN610SP</b>	PowerSO-10	MO-3	5.5 ÷ 36	41	10	75		•
<b>VN5160S-E</b>	SO-8	MO-5	4.5 ÷ 36	41	160	5	•	
<b>VN5E160AS-E*</b>	SO-8	MO-5	4.5 ÷ 28	41	160	10		•
<b>VN5E160S-E</b>	SO-8	MO-5	4.5 ÷ 28	41	160	10	•	
<b>VN5050J-E</b>	PowerSSO-12	MO-5	4.5 ÷ 36	41	50	18	•	
<b>VN5E050J-E</b>	PowerSSO-12	MO-5	4.5 ÷ 28	41	50	27	•	
<b>VN5050AJ-E</b>	PowerSSO-12	MO-5	4.5 ÷ 36	41	50	18		•
<b>VN5E050AJ-E</b>	PowerSSO-12	MO-5	4.5 ÷ 28	41	50	27		•
<b>VN5025AJ-E</b>	PowerSSO-12	MO-5	4.5 ÷ 36	41	25	40		•
<b>VN5E025AJ-E</b>	PowerSSO-12	MO-5	4.5 ÷ 28	41	25	65		•
<b>VN5016AJ-E</b>	PowerSSO-12	MO-5	4.5 ÷ 36	41	16	60		•
<b>VN5E016AH*</b>	HPAK	MO-5	4.5 ÷ 28	41	16	73		•
<b>VN5012AK-E</b>	PowerSSO-24	MO-5	4.5 ÷ 36	41	12	65		•
<b>VN5010AK-E</b>	PowerSSO-24	MO-5	4.5 ÷ 36	41	10	65		•
<b>VN5E010AH*</b>	HPAK	MO-5	4.5 ÷ 28	41	10	85		•

For lead-free version, add the E suffix to the part number (where not indicated)

\* Under development

# High-side drivers

## Smart power high-side switches - double channel

Part number	Packages	Technology	Operating range $V_{cc}$ [V]	Max supply voltage $V_{cc}$ (max) [V]	Max on-state resistance $R_{DS(on)}$ (max) [m $\Omega$ ]	Current limitation $I_{lim}$ (typ) [A]	Digital status	Current sense
VND05B	HEPTAWATT	MO-2	6 $\div$ 36	40	200	9	•	
VND05BSP	PowerSO-10	MO-2	6 $\div$ 36	40	200	9	•	
VND810SP	PowerSO-10	MO-3	5.5 $\div$ 36	41	160	5	•	
VND810	SO-16	MO-3	5.5 $\div$ 36	41	160	5	•	
VND810PEP-E	PowerSSO-12	MO-3	5.5 $\div$ 36	41	160	5	•	
VND810MSP	PowerSO-10	MO-3	5.5 $\div$ 36	41	150			
VND10B	HEPTAWATT	MO-2	6 $\div$ 36	40	100	14	•	
VND10BSP	PowerSO-10	MO-2	6 $\div$ 36	40	100	14	•	
VND830	SO-16L	MO-3	5.5 $\div$ 36	41	60	9	•	
VND830MSP	PowerSO-10	MO-3	5.5 $\div$ 36	41	60	9	•	
VND830SP	PowerSO-10	MO-3	5.5 $\div$ 36	41	60	9	•	
VND830ASP	PowerSO-10	MO-3	5.5 $\div$ 36	41	60	9		•
VND830LSP	PowerSO-10	MO-3	5.5 $\div$ 36	41	60	23	•	
VND830PEP-E	PowerSSO-24	MO-3	5.5 $\div$ 36	41	60	9	•	
VND830AEP-E	PowerSSO-24	MO-3	5.5 $\div$ 36	41	60	9		•
VND600	SO-16L	MO-3	5.5 $\div$ 36	41	35	40	•	
VND600SP	PowerSO-10	MO-3	5.5 $\div$ 36	41	30	40	•	
VND670SP	PowerSO-10	MO-3	5.5 $\div$ 36	40	30	45	•	
VND600PEP-E	PowerSSO-24	MO-3	5.5 $\div$ 36	41	30	40		•
VND920	SO-28	MO-3	5.5 $\div$ 36	41	16	45		•
VND5160J-E	PowerSSO-12	MO-5	4.5 $\div$ 36	41	160	5	•	
VND5E160J-E	PowerSSO-12	MO-5	4.5 $\div$ 28	41	160	10	•	
VND5160AJ-E	PowerSSO-12	MO-5	4.5 $\div$ 36	41	160	5		•
VND5E160AJ-E	PowerSSO-12	MO-5	4.5 $\div$ 28	41	160	10		•
VND5050J-E	PowerSSO-12	MO-5	4.5 $\div$ 36	41	50	18	•	
VND5E050J-E	PowerSSO-12	MO-5	4.5 $\div$ 28	41	50	27	•	
VND5050K-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	50	18	•	
VND5E050K-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	50	27	•	
VND5050AJ-E	PowerSSO-12	MO-5	4.5 $\div$ 36	41	50	18		•
VND5E050AJ-E	PowerSSO-12	MO-5	4.5 $\div$ 28	41	50	27		•
VND5050AK-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	50	18		•
VND5E050AK-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	50	27		•
VND5025AK-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	25	40		•
VND5E025AK-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	25	60		•
VND5012AK-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	12	60		•
VND5E012AY-E*	PowerSSO-36D	MO-5	4.5 $\div$ 28	41	12	74		•
VND5E008AY*	PowerSSO-36D	MO-5	4.5 $\div$ 28	41	8	85		•
VND5E006ASP*	PowerSO-16	MO-5	4.5 $\div$ 28	41	6	100		•
VND5004BSP30-E	PowerSO-30	MO-5	4.5 $\div$ 28	41	4	100		•
VND5004B-E	PowerQFN	MO-5	4.5 $\div$ 28	41	4	100		•

For lead-free version, add the E suffix to the part number (where not indicated)

\* Under development

## Smart power high-side switches - quad channel

Part number	Packages	Technology	Operating range $V_{cc}$ [V]	Max supply voltage $V_{cc}$ (max) [V]	Max on-state resistance $R_{DS(on)}$ (max) [m $\Omega$ ]	Current limitation $I_{lim}$ (typ) [A]	Digital status	Current sense
VNQ500PEP-E	PowerSSO-12	MO-3	5.5 $\div$ 36	41	500	0.5	•	
VNQ810	SO-28	MO-3	5.5 $\div$ 36	41	160	5	•	
VNQ810PEP-E	PowerSSO-24	MO-3	5.5 $\div$ 36	41	160	7.5	•	
VNQ810M	SO-28	MO-3	5.5 $\div$ 36	41	150	0.9	•	
VNQ05XSP16	PowerSO-16	MO-3	5.5 $\div$ 36	41	110	7.5		•
VNQ690SP	PowerSO-10	MO-3	6 $\div$ 36	41	90	14	•	
VNQ830	SO-28	MO-3	5.5 $\div$ 36	41	65	9	•	
VNQ830A	SO-28	MO-3	5.5 $\div$ 36	41	65	9		•
VNQ830M	SO-28	MO-3	5.5 $\div$ 36	41	60	9	•	
VNQ830PEP-E	PowerSSO-24	MO-3	5.5 $\div$ 36	41	60	18	•	
VNQ660SP	PowerSO-10	MO-3	5.5 $\div$ 36	41	50	10	•	
VNQ600A	SO-28	MO-3	5.5 $\div$ 36	41	35	40		•
VNQ600	SO-28	MO-3	5.5 $\div$ 36	41	35	40	•	
VNQ600AP	SO-28	MO-3	5.5 $\div$ 36	41	35	40		•
VNQ5E250AJ-E	PowerSSO-16	MO-5	4.5 $\div$ 28	41	250	5		•
VNQ5160K-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	160	5	•	
VNQ5E160K-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	160	10	•	
VNQ5E160AK-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	160	10		•
VNQ5050K-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	50	18	•	
VNQ5E050AK-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	50	27		•
VNQ5050AK-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	50	18		•
VNQ5E050K-E	PowerSSO-24	MO-5	4.5 $\div$ 28	41	27	27	•	
VNQ5027AK-E	PowerSSO-24	MO-5	4.5 $\div$ 36	41	25	40		•

For lead-free version, add the E suffix to the part number (where not indicated)

# OMNIFET™

## Smart power low-side switches - single channel

Part number	Packages	Technology	Voltage clamp $V_{clamp}$ (typ) [V]	Current limitation $I_{lim}$ (typ) [A]	Max on-state resistance $R_{DS(on)}$ (max) [mΩ]
VND10N06	DPAK	MO-2	60	10	300
VND10N06-1	IPAK	MO-2	60	10	300
VND1NV04	DPAK	MO-3	45	2.6	250
VNN1NV04	SOT-223	MO-3	45	2.6	250
VNS1NV04	SO-8	MO-3	45	2.6	250
VND1NV04-1	IPAK	MO-3	45	2.6	250
VND5N07	DPAK	MO-2	70	5	200
VND5N07-1	IPAK	MO-2	70	5	200
VNP5N07	TO-220	MO-2	70	5	200
VVNB10N07	D <sup>2</sup> PAK	MO-2	70	10	140
VND7N04	DPAK	MO-2	42	7	140
VNP7N04	TO-220	MO-2	42	7	140
VNV10N07	PowerSO-10	MO-2	70	10	140
VND7N04-1	IPAK	MO-2	42	7	140
VNP10N07	TO-220	MO-2	70	10	140
VND3NV04	DPAK	MO-3	45	5	120
VND3NV04-1	IPAK	MO-3	45	5	120
VNN3NV04	SOT-223	MO-3	45	5	120
VNS3NV04	SO-8	MO-3	45	5	120
VNP10N06	TO-220	MO-2	60	10	300
VNB14N04	D <sup>2</sup> PAK	MO-2	42	14	70
VNP14N04	TO-220	MO-2	42	14	70
VNV14N04	PowerSO-10	MO-2	42	14	70
VND7NV04	DPAK	MO-3	45	9	60
VNN7NV04	SOT-223	MO-3	45	9	60
VNS7NV04	SO-8	MO-3	45	9	60
VND7NV04-1	IPAK	MO-3	45	9	60
VNB20N07	D <sup>2</sup> PAK	MO-2	70	20	50
VNP20N07	TO-220	MO-2	70	20	50
VNV20N07	PowerSO-10	MO-2	70	20	50
VNB49N04	D <sup>2</sup> PAK	MO-2	42	49	40
VNV49N04	PowerSO-10	MO-2	42	49	40
VNP49N04	TO-220	MO-2	42	49	40
VNB28N04	D <sup>2</sup> PAK	MO-2	42	28	35
VND14NV04	DPAK	MO-3	45	18	35
VNP14NV04	TO-220	MO-3	45	18	35
VNP28N04	TO-220	MO-2	42	28	35
VNS14NV04	SO-8	MO-3	45	18	35
VNV28N04	PowerSO-10	MO-2	42	28	35
VND14NV04-1	IPAK	MO-3	45	18	35
VNB14NV04	D <sup>2</sup> PAK	MO-3	45	18	35
VNB35N07	D <sup>2</sup> PAK	MO-2	70	35	28
VNV35N07	PowerSO-10	MO-2	70	35	28
VNP35N07	TO-220	MO-2	70	35	28
VNB35NV04	D <sup>2</sup> PAK	MO-3	45	45	10
VNP35NV04	TO-220	MO-3	45	45	10
VNV35NV04	PowerSO-10	MO-3	45	45	10

For lead-free version, add the E suffix to the part number (where not indicated)

# OMNIFET

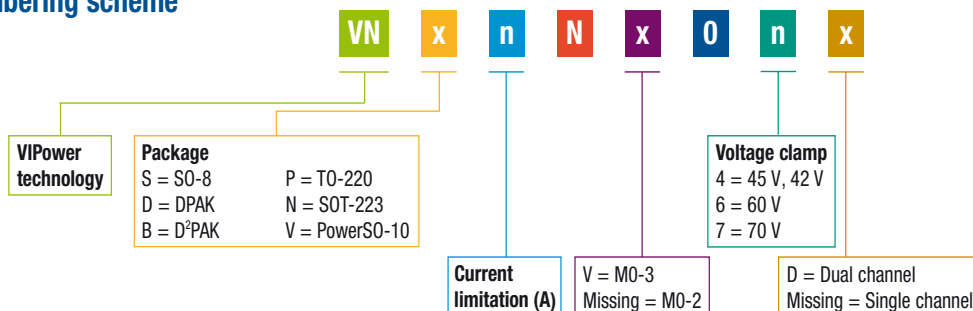
## Smart power low-side switches - double channel

Part number	Packages	Technology	Voltage clamp $V_{clamp}$ (typ) [V]	Current limitation $I_{lim}$ (typ) [A]	Max on-state resistance $R_{DS(on)}$ (max) [mΩ]
VNS1NV04D	SO-8	MO-3	45	2.6	250
VNS3NV04D	SO-8	MO-3	45	5	120

For lead-free version, add the E suffix to the part number (where not indicated)

\* Under development

## OMNIFET part numbering scheme



# OMNIFET PLUS

## Smart power low-side switches - single channel

Part number	Packages	Technology	Voltage clamp $V_{clamp}$ (typ) [V]	Current limitation $I_{lim}$ (typ) [A]	Max on-state resistance $R_{DS(on)}$ (max) [mΩ]	Digital status
VNL5160N3-E*	SOT-223	MO-5	46	5	160	
VNL5160S5-E*	SO-8	MO-5	46	5	160	•
VNL5050N3-E*	SOT-223	MO-5	46	27	50	
VNL5050S5-E*	SO-8	MO-5	46	27	50	•

\* Under development

## Voltage regulators

Part number	Packages	Outputs	Output range $V_o$ [V]	Output current $I_{out}$ [mA]	Accuracy	Drop voltage $V_{ds}$ (typ) [mV]	Reset	Enable	Early warning	Watchdog	Watchdog enable	Inhibited Regulator Quiescent Current (typical) (μA)	Quiescent current at low load (typical) (μA)
L4988D	SO-8	1	5	200	± 2 %	270	•			•	•	-	130
L4988MD	SO-20												
L4947PD	PowerSO-20	1	5	500	± 4 %	400	•					-	5000
L4925PD	PowerSO-20	1	5	500	± 2 %	300	•					-	190
L4949ED	SO-8	1	5	100	± 1 %	300	•		•			-	200
L4949EP	SO-20												
L4979D	SO-8	1	5	150	± 2 %	200	•	•		•		6	100
L4979MD	SO-20												
L4989D	SO-8	1	5	150	± 3 %	180	•			•	•	-	110
L4989MD	SO-20												
L4993D	SO-8	1	5	150	± 2 %	200	•			•	•	-	100
L4993MD	SO-20												
L4995RJ	PowerSSO-12	1	5	500	± 2 %	270	•					3	90
L4995RK	PowerSSO-24												
L4995AJ	PowerSSO-12	1	5	500	± 2 %	270	•	•				3	90
L4995AK	PowerSSO-24												
L4995J	PowerSSO-12	1	5	500	± 2 %	270	•	•		•		3	90
L4995K	PowerSSO-24												
L5150BN*	SOT-223	1	5	150	± 2 %	270						-	40
L5150CJ*	PowerSSO-12	1	5	150	± 2 %	270	• <sup>(1)</sup>		•			-	55
L5150GJ*	PowerSSO-12	1	5	150	± 2 %	270	• <sup>(1)</sup>	•	•			5	55
L4938ND	SO-20	2	5	50	± 2 %	300	•	•	•			-	210
L4938NPD	PowerSO-20		Adj	500								-	
L4938ED	SO-20	2	5	100	± 2 %	300	•	•	•			-	210
L4938EPD	PowerSO-20		Adj	400								-	

\* Under development

(1) Adjustable threshold

## Door zone systems

Part number	Packages	Driver stages	On-state resistance $R_{on}$ [mΩ]	Current limitation $I_{lim}$ (min) [A]	Operating range $V_s$ [V]	PWM control	Short circuit protection	Current monitoring output	Over temperature protection	Charge pump (reverse battery protection)	Diagnostic and programming	Description
L9949	PowerSO-20	1 full bridge	150	6	7 ÷ 28		•	•	•		SPI	Mid-end front door module
		3 half bridges	800	1.6								
		1 high-side switch	100	6								
L9950 L9950XP	PowerSO-36 PowerSSO-36	2 half bridges	300	3	7 ÷ 28	•	•	•	•	•	SPI	High-end front door module
		2 half bridges	800	1.5								
		1 full bridge	150	6								
		4 high-side switches	800	1.5								
L9951 L9951XP	PowerSO-36 PowerSSO-36	1 high-side switch	100	6	7 ÷ 28	•	•	•	•	•	SPI	Rear door module
		1 half bridge	150	7.4								
		2 half bridges	200	5								
		2 high-side switches	800	1.25								
L9953 L9953XP	PowerSO-36 PowerSSO-36	3 half bridges	800	1.5	7 ÷ 28	•	•	•	•	•	SPI	Mid-end front door module
		1 full bridge	150	6								
		2 high-side switches	500	1.5								
		1 high-side switch	100	6								
L9954 L9954XP	PowerSO-36 PowerSSO-36	3 half bridges	800	1.5	7 ÷ 28	•	•	•	•	•	SPI	Mid-end front door module without door-lock
		2 high-side switches	500	1.5								
		1 high-side switch	100	6								
L99DZ70XP	PowerSSO-36	1 full bridge	150	6	7 ÷ 28	•	•	•	•	•	SPI	High-end front door module compatible with bulbs/LEDs. Control circuitry for electrochromic mirror glass.
		2 half bridges	300	3								
		2 half bridges	1600	0.75								
		1 high side switch	90	6								
		2 configurable high side switches	500/1800	1.5/0.4								
2 high side switches	1600	0.5										

## SBC - Transceiver and power-management

Part number	Packages	Transceiver		Voltage regulators					Driver stages		On board features	Description
		Transmission rate	Transceiver description	Outputs	Accuracy	Drop voltage VDP (typ) (mV)	Reset	Watchdog	Outputs	Driver description		
L9969URD	SO-20	125 kbaud	Fault tolerant low speed CAN transceiver	5 V @ 180 mA	± 2 %	400	•	•				System basic chip
L9969UR	PowerSO-20			5 V @ 180 mA	± 4 %							
L9952GXP	PowerSSO-36	20 kbaud	LIN transceiver	5 V @ 200 mA	± 2 %	300	•	•	4	HSD 1 Ω @ 120 mA	<ul style="list-style-type: none"> <li>4 wake-up inputs for contact monitoring</li> <li>Inhibit input for wake up from external CAN</li> <li>Two op amps for current sense interfacing</li> <li>Fail-safe output</li> </ul>	Companion chip
				5 V @ 50 mA	± 4 %							

## Bridges – motor drivers

Part number	Packages	Technology	Driver stages	On-state resistance R <sub>on</sub> [mΩ]	Current limitation I <sub>lim</sub> (typ) [A]	Operating range V <sub>cc</sub> [V]	Max supply voltage V <sub>cc</sub> (max) [V]	Highlights
L9997ND	SO-20	BCD	2 half bridges	700	1.6	7 ÷ 16.5	26	Short-circuit and over temperature protected
VN770K	SO-28	M0-3	2 HSD and 2 LSD	170	9	5.5 ÷ 36	41	Short circuit and over temperature protected
VN771K	SO-28	M0-3	2 HSD and 2 LSD	80	9	5.5 ÷ 36	41	Short circuit and over temperature protected
VN772K	SO-28	M0-3	2 HSD and 2 LSD	95	9	5.5 ÷ 36	41	Short circuit and over temperature protected
VNH2SP30-E	MultiPowerSO-30	M0-4	Full bridge	16	50	5.5 ÷ 16	41	Cross conduction protection – PWM operations up to 20 KHz – current sense
VNH3SP30-E	MultiPowerSO-30	M0-3	Full bridge	35	45	5.5 ÷ 36	40	Cross conduction protection – PWM operations up to 10 KHz – current sense
VNH3ASP30-E	MultiPowerSO-30	M0-4	Full bridge	35	50	5.5 ÷ 16	41	Cross conduction protection – PWM operations up to 20 KHz – current sense
VN5770AK-E	SO-28	M0-5 M0-3	2 HSD and 2 LSD	280	8.5	4.5 ÷ 36	41	Active <i>power limitation</i> (patent IP) on high side
VN5772AK-E*	SO-28	M0-5	2 HSD and 2 LSD	100	18	4.5 ÷ 36	41	Active <i>power limitation</i> (patent IP) on both high side and low side
VNH5019A-E*	SO-28	M0-5	Full bridge	19	30	4.5 ÷ 24	41	Cross conduction protection - PWM operations up to 20 KHz - current sense
VNH5180*	PowerSSO-36	M0-5	2 HSD and 2 LSD	180	12	5.5 ÷ 18	41	Cross conduction protection - Output protected against short to ground and short to Vcc

\* Under development

## Special devices

Part number	Packages	Driver stages	Operating range V <sub>cc</sub> [V]	Max supply voltage V <sub>cc</sub> (max) [V]	Highlights	Description
L9700D	SO-8	Six channels limiter	4.75 ÷ 5.25	20	Fast active clamping	Limiter
L9686MD	SO-8	Relay driver for car direction indicator	8 ÷ 18		Lamp failure detection – load dump protected	Indicator driver
L99MC6	PowerSSO-16	Hexa configurable high side - low side driver	6 ÷ 28	40	Rds(on) = 0.7Ω at TJ=25°C	Configurable HS/LS driver
L99H01XP*	PowerSSO-36 LQFP-32	Motor bridge driver	6 ÷ 28	35	Programmable free wheeling - Current sense amplifier / free configurable - Sensing circuitry of external MOSFET with embedded thermal sensor	Controller for 4 external N-channel MOS in bridge configuration
L99H01QF*		Motor bridge driver	6 ÷ 28	35	Programmable free wheeling - Current sense amplifier / free configurable - Sensing circuitry of external MOSFET with embedded thermal sensor	Controller for 4 external N-channel MOS in bridge configuration
VN1160	DPAK	Power switch for motorbike direction indicator	9 ÷ 16	40	Lamp failure detection – Indicator reverse battery protected	Motorbike indicator driver
VN1160-1	IPAK	Power switch for motorbike direction indicator	9 ÷ 16	40	Lamp failure detection – Indicator reverse battery protected	Motorbike indicator driver

\* Under development

## Electronic ignition

Part number	Packages	Technology	High-voltage clamp V <sub>CLAMP</sub> (typ) [V]	Coil current limit I <sub>CL</sub> (max) [A]	Power stage saturation voltage V <sub>CE SAT</sub> (max) [V]	Operating range V <sub>cc</sub> [V]	Supply current (on state) I <sub>CC</sub> (max) [mA]	Description
VB325SP	PowerSO-10	M1	380	11	2 @ 6 A	4.5 ÷ 5.5	40	Quasi proportional current driving. Current flag
VB326SP	PowerSO-10	M1	360	11	2 @ 6 A	4.5 ÷ 5.5	40	Quasi proportional current driving. Current flag
VB125ASP6	PowerSO-10	M1	370	11	2 @ 6 A	6 ÷ 24	200	Temperature compensated high voltage flag. Current flag. Voltage regulator not required.
VB025SP6	PowerSO-10	M1	380	10	2 @ 6.5 A	4.5 ÷ 5.5	40	Quasi proportional current driving. Current flag
VB027SP6	PowerSO-10	M1	360	9	2 @ 6 A	4.5 ÷ 5.5	130	Quasi proportional current driving. Current flag
VBG15NB22T5SP	PENTAWATT	Smart IGBT	250	25	2.5 @ 15 A	5.2 ÷ 24	10	Max D-Well protection. Voltage regulator not required

# 8-, 16- and 32-bit automotive microcontroller families

Part number	Program memory type		Prog. (Kbytes)	RAM (bytes)	Data E <sup>2</sup> PROM (bytes)	A/D inputs	Timer functions			Serial interface	LVD levels	I/Os (high current <sup>2</sup> )	Packages	Supply voltage	Special features
	Flash	ROM					12 or 16-bit (IC/OC/PWM)	8-bit (IC/OC/PWM)	Others						

## STM8A: next generation 8-bit automotive fast core microcontrollers

### STM8A with CAN

32 pins	STM8AF5166	• <sup>6</sup>		32	2 K	1 K	7x10-bit	3(8/8/8)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC	1	25(9)	LQFP32	STM8 CPU, single-wire ICP/ICD interface, nested interrupts, program memory ROP, WDG with independent clock, internal user trimmable RC oscillator 16 MHz, low-power internal RC oscillator 128 KHz, POR, BOR, CSS
	STM8AF5176	• <sup>6</sup>		48	3 K	1.5 K									
	STM8AF5186	• <sup>6</sup>		64	4 K	1.5 K									
48 pins	STM8AF5168	• <sup>6</sup>		32	2 K	1 K	10x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC/USART	1	40(9)	LQFP48	
	STM8AF5178	• <sup>6</sup>		48	3 K	1.5 K									
	STM8AF5188	• <sup>6</sup>		64	4 K	1.5 K									
64 pins	STM8AF5198	• <sup>6</sup>		96	6 K	2 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC/USART	1	56(9)	LQFP64	
	STM8AF51A8	• <sup>6</sup>		128	6 K	2 K									
	STM8AF5169	• <sup>6</sup>		32	2 K	1 K									
80 pins	STM8AF5179	• <sup>6</sup>		48	3 K	1.5 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC/USART	1	72(9)	LQFP80	
	STM8AF5189	• <sup>6</sup>		64	4 K	1.5 K									
	STM8AF5199	• <sup>6</sup>		96	6 K	2 K									
100 pins	STM8AF51A9	• <sup>6</sup>		128	6 K	2 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC/USART	1	92(9)	LQFP100	
	STM8AF519A	• <sup>6</sup>		96	6 K	2 K									
	STM8AF51AA	• <sup>6</sup>		128	6 K	2 K									
128 pins	STM8AF51BA	• <sup>6</sup>		256	12 K	4 K	28x10 bit	4(12/12/12)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/SPI/PC/USART	1	120(9)	LQFP128	
	STM8AF51AB	• <sup>6</sup>		128	6 K	2 K									
	STM8AF51BB	• <sup>6</sup>		256	12 K	4 K	28x10 bit	4(12/12/12)	1(0/0/0)	WDG, WWDG, AWU	CAN/LIN-UART/2xSPI/2xI <sup>2</sup> C/2xUSART	1	120(9)	LQFP128	

### STM8A without CAN

32 pins	STM8AF6146	• <sup>6</sup>		16	2 K	0.5 K	7x10-bit	2(6/6/6)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/SPI	1	25(9)	LQFP32	STM8 CPU, single-wire ICP/ICD interface, nested interrupts, program memory ROP, WDG with independent clock, internal user trimmable RC oscillator 16 MHz, low-power internal RC oscillator 128 KHz, POR, BOR, CSS
	STM8AF6166	• <sup>6</sup>		32	2 K	1 K									
	STM8AF6176	• <sup>6</sup>		48	3 K	1.5 K									
48 pins	STM8AF6186	• <sup>6</sup>		64	4 K	1.5 K	10x10-bit	3(8/8/8)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/SPI/PC	1	40(9)	LQFP48	
	STM8AF6148	• <sup>6</sup>		16	2 K	0.5 K									
	STM8AF6168	• <sup>6</sup>		32	2 K	1 K									
64 pins	STM8AF6178	• <sup>6</sup>		48	3 K	1.5 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/	1	56(9)	LQFP64	
	STM8AF6188	• <sup>6</sup>		64	4 K	1.5 K									
	STM8AF6198	• <sup>6</sup>		96	6 K	2 K									
80 pins	STM8AF61A8	• <sup>6</sup>		128	6 K	2 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/	1	72(9)	LQFP80	
	STM8AF6169	• <sup>6</sup>		32	2 K	1 K									
	STM8AF6179	• <sup>6</sup>		48	3 K	1.5 K									
100 pins	STM8AF6189	• <sup>6</sup>		64	4 K	1.5 K	16x10-bit	3(9/9/9)	1(0/0/0)	WDG, WWDG, AWU	SPI/PC/USART	1	92(9)	LQFP100	
	STM8AF6199	• <sup>6</sup>		96	6 K	2 K									
	STM8AF61A9	• <sup>6</sup>		128	6 K	2 K									
128 pins	STM8AF619A	• <sup>6</sup>		96	6 K	2 K	28x10 bit	4(12/12/12)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/2xSPI/2xI <sup>2</sup> C/2xUSART	1	120(9)	LQFP128	
	STM8AF61AA	• <sup>6</sup>		128	6 K	2 K									
	STM8AF61AB	• <sup>6</sup>		256	12 K	4 K	28x10 bit	4(12/12/12)	1(0/0/0)	WDG, WWDG, AWU	LIN-UART/2xSPI/2xI <sup>2</sup> C/2xUSART	1	120(9)	LQFP128	

## ST7: 8-bit industry standard fast core architecture with innovative peripherals (up to 64 Kbytes address space)

### ST7Lxx Family

8 pins	ST7LUS5	• <sup>6</sup>	•	1	128		5x10-bit	1(0/1/1)3	1(1/0/0)	WDG, RTC		1	6(5)	S08	Internal RC oscillator, PLL, ROP, ICP, IAP
	ST7LU05	• <sup>6</sup>	•	2	128										
	ST7LU09	• <sup>6</sup>	•	2	128	128									
16 pins	ST7L05	• <sup>6</sup>	•	1.5	128		5x8-bit	2(1/4/4)3	2(1/0/0)	WDG, RTC		1	6(5)	S08	
	ST7L09	• <sup>6</sup>	•	1.5	128	128									
	ST7L15 <sup>1</sup>	• <sup>6</sup>	•	4	256										
20 pins	ST7L19 <sup>1</sup>	• <sup>6</sup>	•	4	256	128	7x10-bit	2(1/4/4)3	2(1/0/0)	WDG, RTC	SPI	1	15(7)	S020	
	ST7L34 <sup>1</sup>	• <sup>6</sup>	•	8	384										
	ST7L35 <sup>1</sup>	• <sup>6</sup>	•	8	384										
	ST7L38 <sup>1</sup>	• <sup>6</sup>	•	8	384	256									
	ST7L39 <sup>1</sup>	• <sup>6</sup>	•	8	384	256									

### ST7 mid-range

32 pins	ST7232AK1-Auto <sup>1</sup>	• <sup>6</sup>	•	4	384		8x10-bit	2(3/3/2)	1(0/2/2)	WDG, RTC	SPI/SCI	3	24(10)	LQFP32	ICP, IAP, nested interrupts, TLI, ROP, beep
	ST7232AK2-Auto <sup>1</sup>	• <sup>6</sup>	•	8	384										
	ST7232BK2-Auto <sup>1</sup>	• <sup>6</sup>	•	8	384										
	ST7232BK4-Auto <sup>1</sup>	• <sup>6</sup>	•	16	512										
	ST7232BK6-Auto <sup>1</sup>	• <sup>6</sup>	•	32	1 K										
	ST7232BK6-Auto <sup>1</sup>	• <sup>6</sup>	•	32	1 K										
	ST7232K4-Auto <sup>1</sup>	• <sup>6</sup>	•	16	512										
	ST7232K6-Auto <sup>1</sup>	• <sup>6</sup>	•	32	1 K										
	ST7236K4-Auto <sup>1</sup>	• <sup>6</sup>	•	16	512										
	ST7236K6-Auto <sup>1</sup>	• <sup>6</sup>	•	32	1 K										
	ST7236K7-Auto <sup>1</sup>	• <sup>6</sup>	•	48	1.5 K										
	ST7236K9-Auto <sup>1</sup>	• <sup>6</sup>	•	60	2 K										
ST7232AJ1-Auto <sup>1</sup>	• <sup>6</sup>	•	4	384		12x10-bit	2(3/3/2)	1(0/0/0)	WDG, RTC	SPI/SCI	3	32(12)	LQFP44	3.8 to 5.5 V	

All products are available also in their lead free version. The "E" suffix is added to the part number in case of LF package



# 8-, 16- and 32-bit automotive microcontroller families

Part number	Program memory type		Prog. (Kbytes)	RAM (bytes)	Data E <sup>2</sup> PROM (bytes)	A/D inputs	Timer functions			Serial interface	LVD levels	I/Os (high current <sup>2</sup> )	Packages	Supply voltage	Special features	
	Flash	ROM					12 or 16-bit (IC/OC/PWM)	8-bit (IC/OC/PWM)	Others							
<b>ST7 Mid-Range</b>																
44 pins	ST7232AJ2-Auto	• <sup>6</sup>	•	8	384		12x10-bit	2(3/3/2)		WDG, RTC	SPI/SCI	3	32 (12)	LQFP44	3.8 to 5.5 V	ICP, IAP, nested interrupts, TLI, ROP, beep
	ST72324BJ2-Auto	• <sup>6</sup>	•	8	384		12x10-bit	2(3/3/2)				3	32 (12)	LQFP44		
	ST72324BJ4-Auto	• <sup>6</sup>	•	16	512		12x10-bit	2(3/3/2)		3	32 (12)	LQFP44	2.85 to 3.6 V			
	ST72324BJ6-Auto	• <sup>6</sup>	•	32	1K		12x10-bit	2(3/3/2)		3	32 (12)	LQFP44				
	ST72324BLJ6-Auto	• <sup>6</sup>	•	32	1K		12x10-bit	2(3/3/2)		ART, WDG, RTC	SPI/SCI/PC	3	32 (12)	LQFP44	3.8 to 5.5 V	
	ST72321BJ6-Auto	• <sup>6</sup>	•	32	1K		12x10-bit	2(3/3/2)	1(0/4/4)			3	32 (12)	LQFP44		
	ST72321BLJ6-Auto	• <sup>6</sup>	•	32	1K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44	3.8 to 5.5 V			
	ST72321BJ7-Auto	• <sup>6</sup>	•	48	1.5K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44				
	ST72321BJ9-Auto	• <sup>6</sup>	•	60	2K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44	3.8 to 5.5 V			
	ST72325J4-Auto	• <sup>6</sup>	•	16	512		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44				
	ST72325J6-Auto	• <sup>6</sup>	•	32	1K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44	3.8 to 5.5 V			
	ST72325J7-Auto	• <sup>6</sup>	•	48	1.5K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44				
	ST72325J9-Auto	• <sup>6</sup>	•	60	2K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44	3.8 to 5.5 V			
	ST72361J4-Auto	• <sup>6</sup>	•	16	512		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44				
ST72361J6-Auto	• <sup>6</sup>	•	32	1K		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44	4.5 to 5.5 V				
ST72361J7-Auto	• <sup>6</sup>	•	48	1.5K		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44					
ST72361J9-Auto	• <sup>6</sup>	•	60	2K		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44	4.5 to 5.5 V				
ST72321BAR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)					
64 pins	ST72321BR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	ART, WDG, RTC	SPI/SCI/PC	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V	ICP, IAP, nested interrupts, TLI, ROP, beep
	ST72321BR7-Auto	• <sup>6</sup>	•	48	1.5K		16x10-bit	2(4/4/2)	1(2/4/4)			3	48 (16)	LQFP64 (14x14)		
	ST72321BR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72321BR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)				
	ST72325AR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72325R6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)				
	ST72325AR7-Auto	• <sup>6</sup>	•	48	1.5K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72325R7-Auto	• <sup>6</sup>	•	48	1.5K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)				
	ST72325AR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72325R9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)				
	ST72361AR4-Auto	• <sup>6</sup>	•	16	512		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)	4.5 to 5.5 V			
	ST72361AR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)				
	ST72361AR7-Auto	• <sup>6</sup>	•	48	1.5K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)	4.5 to 5.5 V			
	ST72361AR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)				
<b>ST7 application specific</b>																
Low end car audio	ST7FAUDIOJ6-Auto	• <sup>6</sup>		32	1K		12x10-bit	2(3/3/2)	1(0/4/4)	ART, WDG, RTC	SPI/SCI/PC	3	32 (12)	LQFP44	3.8 to 5.5 V	ICP, IAP, nested interrupts, TLI, ROP
	ST7FAUDIOJ7-Auto	• <sup>6</sup>		48	1.5K		12x10-bit	2(3/3/2)	1(0/4/4)			3	32 (12)	LQFP44		
	ST7FAUDIOJ9-Auto	• <sup>6</sup>		60	2K		12x10-bit	2(3/3/2)	1(0/4/4)	3	32 (12)	LQFP44	3.8 to 5.5 V			
	ST7FAUDIOAR6-Auto	• <sup>6</sup>		32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)				
	ST7FAUDIOAR6-Auto	• <sup>6</sup>		32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST7FAUDIOAR7-Auto	• <sup>6</sup>		48	1.5K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)				
	ST7FAUDIOAR7-Auto	• <sup>6</sup>		48	1.5K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST7FAUDIOAR9-Auto	• <sup>6</sup>		60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)				
	ST7FAUDIOAR9-Auto	• <sup>6</sup>		60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72521AR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)				
	ST72521R6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V			
	ST72561J6-Auto	• <sup>6</sup>	•	32	1K		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44				
	ST72561K6-Auto	• <sup>6</sup>	•	32	1K		6x10-bit	1(2/2/1)	1(1/1/3)	1	24 (5)	LQFP32	4.5 to 5.5 V			
	ST72561AR6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)				
ST72561R6-Auto	• <sup>6</sup>	•	32	1K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (14x14)	3.8 to 5.5 V				
ST72521AR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (10x10)					
ST72521R9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	48 (16)	LQFP64 (14x14)	3.8 to 5.5 V				
ST72521M9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	2(4/4/2)	1(2/4/4)	3	64 (16)	LQFP80					
ST72561J9-Auto	• <sup>6</sup>	•	60	2K		11x10-bit	1(2/2/1)	1(2/1/5)	1	34 (6)	LQFP44	4.5 to 5.5 V				
ST72561K9-Auto	• <sup>6</sup>	•	60	2K		6x10-bit	1(2/2/1)	1(1/1/3)	1	24 (5)	LQFP32					
ST72561AR9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (10x10)	4.5 to 5.5 V				
ST72561R9-Auto	• <sup>6</sup>	•	60	2K		16x10-bit	1(2/2/1)	2(4/2/5)	1	48 (6)	LQFP64 (14x14)					
Motor control	ST7MC1K2-Auto	• <sup>6</sup>	•	8	384		8x10-bit	1(2/2/1)	1(1/0/1)	ART, WWDG, RTC	LINSICI	1	17 (3)	LQFP32	4.5 to 5.5 V	Sensorless brushless motor control cell, SCIs with LIN features (LINSICI), CAN 2.0B active, window watchdog, auto wake up
	ST7MC1K6-Auto	• <sup>6</sup>	•	32	384		8x10-bit	1(2/2/1)	1(1/0/1)			1	17 (3)	LQFP32		
	ST7MC2S4-Auto	• <sup>6</sup>	•	16	768		11x10-bit	2(2/2/1)	1(1/0/1)	1	26 (6)	LQFP44	4.5 to 5.5 V			
	ST7MC2S6-Auto	• <sup>6</sup>	•	32	1024		11x10-bit	2(2/2/1)	1(1/0/1)	1	26 (6)	LQFP44				

All products are available also in their lead free version. The "E" suffix is added to the part number in case of LF package

## 8-, 16- and 32-bit automotive microcontroller families

Part number	Program memory type		Prog. (Kbytes)	RAM (bytes)	Data E <sup>2</sup> PROM (bytes)	A/D inputs	Timer functions			Serial interface	LVD levels	I/Os (high current <sup>2</sup> )	Packages	Supply voltage	Special features
	Flash	ROM					12 or 16-bit (IC/OC/PWM)	8-bit (IC/OC/PWM)	Others						
<b>ST9: 8/16-bit High Performance Core for fast real time management (up to 4Mbytes address space)</b>															
CAN	ST92F150CR9T-Auto	•	64	2 K	1 K	16x10-bit	5(8/6/5)			SPI/SCI/I <sup>2</sup> C/CAN	48	LQFP64	4.5 to 5.5 V	CAN 2.0B active, PLL clock, low-power, LIN master	
	ST92F150CV9T-Auto	•	64	2 K	1 K	16x10-bit	5(8/8/7)			SPI/2xSCI/I <sup>2</sup> C/CAN	77	LQFP100			
	ST92F150CR1T-Auto	•	128	4 K	1 K	16x10-bit	3(4/4/5)			SPI/SCI/I <sup>2</sup> C/CAN	48	LQFP64			
	ST92F150CV1T-Auto	•	128	4 K	1 K	16x10-bit	5(8/8/7)			SPI/2xSCI/I <sup>2</sup> C/CAN	77	LQFP100			
	ST92F150JDV1T-Auto	•	128	6 K	1 K	16x10-bit	5(8/8/7)		WDG	SPI/2xSCI/I <sup>2</sup> C/2xCAN/J1850	77	LQFP100			
CAN-Less	ST92F250CV2T-Auto	•	256	8 K	1 K	16x10-bit	5(8/8/7)			SPI/2xSCI/2xI <sup>2</sup> C/CAN	80	LQFP100	4.5 to 5.5 V	CAN 2.0B active, PLL clock, low-power, LIN master	
	ST92F124R9T-Auto	•	64	2 K	1 K	16x10-bit	5(8/6/5)			SPI/SCI/I <sup>2</sup> C	48	LQFP100			
	ST92F124V1T-Auto	•	128	4 K	1 K	16x10-bit	5(8/8/7)			SPI/2xSCI/I <sup>2</sup> C	80	LQFP100			

## Mature 8-bit automotive microcontroller families

<b>ST6: 8-bit general purpose control applications (up to 8 Kbytes address space)</b>															
16 pins	ST6200CM-Auto <sup>0</sup>	• <sup>6</sup>	1	64		4x8-bit		1(0/0/0)	WDG		1	9 (3)	SO16	3.0 to 6 V	RC oscillator, OSG, ROP
	ST6201CM-Auto <sup>1</sup>	• <sup>6</sup>	2	64		4x8-bit		1(0/0/0)	WDG		1	9 (3)	SO16	3.0 to 6 V	
	ST6203CM-Auto <sup>0</sup>	• <sup>6</sup>	1	64				1(0/0/0)	WDG		1	9 (3)	SO16	3.0 to 6 V	
	ST62T52CM-Auto <sup>0</sup>	• <sup>6</sup>	2	128		4x8-bit		1+1(1/1/1)	WDG		1	9 (5)	SO16	3.0 to 6 V	
	ST62T62CM-Auto <sup>1</sup>	• <sup>6</sup>	2	128	64	4x8-bit		1+1(1/1/1)	WDG		1	9 (5)	SO16	3.0 to 6 V	
20 pins	ST6208CM-Auto <sup>0</sup>	• <sup>6</sup>	1	64				1(0/0/0)	WDG		1	12 (4)	SO20	3.0 to 6 V	
	ST6209CM-Auto <sup>0</sup>	• <sup>6</sup>	1	64		4x8-bit		1(0/0/0)	WDG		1	12 (4)	SO20	3.0 to 6 V	
	ST6210CM-Auto <sup>0</sup>	• <sup>6</sup>	2	64		8x8-bit		1(0/0/0)	WDG		1	12 (4)	SO20	3.0 to 6 V	
	ST6220CM-Auto <sup>1</sup>	• <sup>6</sup>	4	64		8x8-bit		1(0/0/0)	WDG		1	12 (4)	SO20	3.0 to 6 V	
	ST6215CM-Auto <sup>1</sup>	• <sup>6</sup>	2	64		16x8-bit		1(0/0/0)	WDG		1	20 (4)	SO28	3.0 to 6 V	
28 pins	ST6225CM-Auto <sup>1</sup>	• <sup>6</sup>	4	64		16x8-bit		1(0/0/0)	WDG		1	20 (4)	SO28	3.0 to 6 V	
	ST62T55CM-Auto <sup>0</sup>	• <sup>6</sup>	4	128		13x8-bit		1+1(1/1/1)	WDG		1	20 (4)	SO28	3.0 to 6 V	
	ST62T65CM-Auto <sup>1</sup>	• <sup>6</sup>	4	128	128	13x8-bit		1+1(1/1/1)	WDG		1	20 (4)	SO28	3.0 to 6 V	
	ST62T65CM-Auto <sup>1</sup>	• <sup>6</sup>	4	128	128	13x8-bit		1+1(1/1/1)	WDG		1	20 (4)	SO28	3.0 to 6 V	

### ST7: 8-bit Industry Standard Fast Core Architecture with innovative peripherals (up to 64Kbytes address space)

<b>ST7 Baseline</b>															
	ST72104G1-Auto	•	•	4	256			1(2/2/1)	WDG	SPI	3	22 (8)	SO28	3.2 to 5.5 V	RC oscillator, clock security system, ISP, ROP
	ST72216G1-Auto	•	•	4	256		6x8-bit	1(2/2/1)	WDG	SPI	3	22 (8)	SO28	3.2 to 5.5 V	
28 pins	ST72254G1-Auto	•	•	4	256		6x8-bit	2(4/4/2)	WDG	SPI/I <sup>2</sup> C	3	22 (8)	SO28	3.2 to 5.5 V	
	ST72104G2-Auto	•	•	8	256			1(2/2/1)	WDG	SPI	3	22 (8)	SO28	3.2 to 5.5 V	
	ST72215G2-Auto	•	•	8	256		6x8-bit	2(4/4/2)	WDG	SPI	3	22 (8)	SO28	3.2 to 5.5 V	
	ST72254G2-Auto	•	•	8	256		6x8-bit	2(4/4/2)	WDG	SPI/I <sup>2</sup> C	3	22 (8)	SO28	3.2 to 5.5 V	
44 pins	ST72124J2-Auto	•	•	8	384			2(3/3/2)	WDG, RTC	SPI/SCI	3	32 (4)	LQFP44	3.2 to 5.5 V	
	ST72314J2-Auto	•	•	8	384		6x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	32 (4)	LQFP44	3.2 to 5.5 V	
	ST72334J2-Auto	•	•	8	384	256	6x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	32 (4)	LQFP44	3.2 to 5.5 V	
	ST72314J4-Auto	•	•	16	512		6x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	32 (4)	LQFP44	3.2 to 5.5 V	
64 pins	ST72334J4-Auto	•	•	16	512	256	6x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	32 (4)	LQFP44	3.2 to 5.5 V	
	ST72314N4-Auto	•	•	16	512		8x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	44 (8)	LQFP64	3.2 to 5.5 V	
	ST72334N4-Auto	•	•	16	512	256	8x8-bit	2(3/3/2)	WDG, RTC	SPI/SCI	3	44 (8)	LQFP64	3.2 to 5.5 V	

### ST7 application specific

MC	ST72141K2-Auto <sup>1</sup>			8	256		8x8-bit	2(4/4/2)	WDG	SPI	1	26 (3)	SO34	4.0 to 5.5 V	Sensorless brushless permanent magnet DC motor controller
----	-----------------------------	--	--	---	-----	--	---------	----------	-----	-----	---	--------	------	--------------	---

All products are available also in their lead free version. The "E" suffix is added to the part number in case of LF package

#### Abbreviations

ADC	: Analog-to-digital converter
ART	: Auto-reload timer
AWU	: Auto wake-up from HALT
BOR	: Brown-out reset
CAN	: Controller area network
CSS	: Clock security system
IAP	: In-application programming
IC/OC	: Input capture/output compare ICP programming
ICD	: In-circuit Debugger
ICP	: In-circuit programming
ISP	: In-situ programming
I <sup>2</sup> C	: Inter-integrated circuit
LIN	: Local interconnect network
LVD	: Low voltage detection
MC	: Motor control
PLL	: Phase locked loop
POR	: Power-on reset
PWM	: Pulse width modulation
ROP	: Readout protection
RTC	: Real-time clock timer
SCI	: Serial communication interface
SPI	: Serial peripheral interface
UART	: Universal asynchronous receiver transmitter
WDG	: Watchdog timer
WWDG	: Window watchdog timer

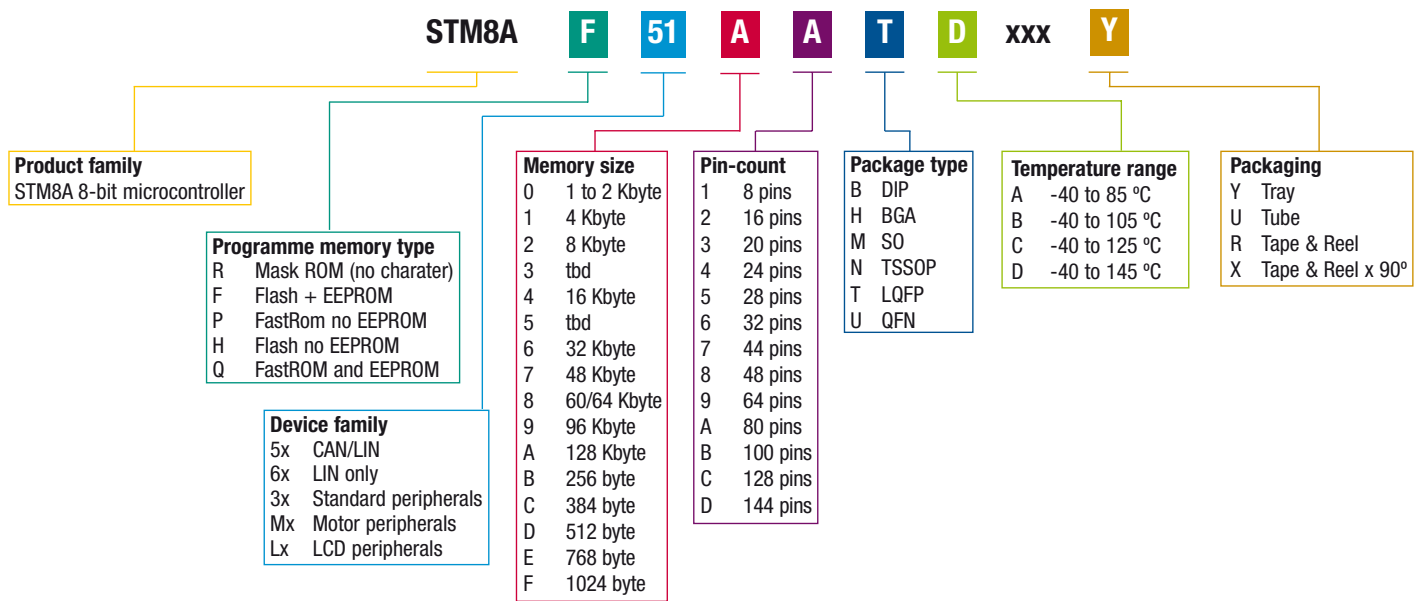
#### Packages

PQFP	: Plastic quad flat package
SO	: Small outline
LQFP	: Low-profile quad flat package

#### Notes

- : Under development
- 0 : Exists also in OTP version
- 1 : Exists also in OTP and EPROM version
- 2 : Number of high current pins included in the number of I/O pins
- 3 : Feature count refers to 12-bit timer
- 4 : HDFlash (high-density Flash)
- 5 : XFlash (extended Flash for 10 kcycle min)
- 6 : FASTROM service available for pre-programmed devices in production quantities

## Part numbering scheme



ons

uide



2008



© STMicroelectronics - May 2008 - Printed in Italy - 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.

**For selected STMicroelectronics sales offices fax:**

China +86 21 34054689; France +33 1 55489569; Germany +49 89 4605454; Italy +39 02 8250449; Japan +81 3 57838216;  
Singapore +65 6481 7771; Sweden +46 8 58774411; Switzerland +41 22 9292900; United Kingdom and Eire +44 1628 890391;  
USA +1 781 861 2678

**Full product information at [www.st.com](http://www.st.com)**

Order code: SGCAR0508



Recycled and chlorine free paper

