

Peripheral semiconductors for set-top box applications



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Power management

Power MOSFETs - low voltage (STripFET™)

- Reduced switching losses
- Optimized intrinsic body diode
- Schottky diode
- Product range (24 V and 60 V)

Power MOSFETs - high voltage (SuperMESH™)

- Extremely high dv/dt capability
- Avalanche rated
- Gate charge minimized
- Very low intrinsic capacitances
- High efficiency

Microprocessor supervisors

STM6779

- Dual voltage reset
- Primary supply monitor: 4.625 to 1.575 V
- 1 additional adjustable supply monitor input
- Manual reset with delay manual reset

STM6905

- Quint voltage reset
- Primary supply monitor: 3.078 to 2.866 V
- Second supply monitor: 2.333 to 1.05 V
- 3 additional adjustable supply monitor inputs

Linear regulators - very low dropout

KFxxx, LFxxx, L4931, LD1117, LD29080/150/300, LD39080/150/300, LD49150/300 LD108x, ST1L04, ST1L02, ST1L05

- Very low dropout voltage from 0.2 V
- Output current: up to 5 A
- Logic-controlled electronic shutdown
- Output voltages: 1.25 to 12 V and adjustable from 0.8 V

DC-DC conversion - step-down

ST1S03, ST1S06, ST1S09, ST1S10, ST1S12, ST2S06

- Step-down current mode PWM (up to 1.7 MHz)
- Reference voltage 0.8 V
- Internal soft-start and power-on delay
- Maximum output current up to 3 A

L598x

- Up to 2 A DC output current
- 2.9 V to 18 V input voltage range
- Output voltage adjustable from 0.6 V
- 250 kHz switching frequency, programmable up to 1 MHz
- Overcurrent, overvoltage and thermal protection

AC-DC conversion - high voltage converter

VIPer28

- Standby PSU consumption less than 50 mW
- 800 V avalanche rugged power section
- PWM operation with fixed frequency jittering for low EMI
- Thermal shutdown with hysteresis

Separable security

Power switch

ST890

- Input range: 2.7 to 5.5 V
- Programmable current limit: up to 1.2 A
- Low quiescent current
- Thermal shutdown, fault indicator output

STMP52141/2151/2161/2171

- Input range: 2.7 to 5.5 V
- 500 mA / 1 A continuous current with fixed current limit
- Low quiescent current
- Thermal shutdown, fault indicator output, reverse-current protection and fault-blanking features

ST2042, ST2052, ST2044, ST2054

- Input range: 2.7 to 5.5 V
- 500 mA continuous current per channel with fixed current limit
- Low quiescent current
- Thermal shutdown, fault indicator output and fault-blanking features



Front panel display

VFD controller

- Compact single chip solution
- Easy software implementation through SPI/I²C serial interface
- Drives VFD panel with 8 digits / 20 segments up to 16 digits / 12 segments
- Energy Star and Blue Angel standard compliant
- Integrated key-scan, infra-red RC decoder and real-time clock (RTC)

LED controller

- Drives up to 7 digits, 8 segments
- Drive capability of 40 mA (max)
- Integrated key-scan up to 16 keys
- 3-wire serial SPI interface
- Low power consumption during standby

Capacitive touch sensors - S-Touch

- Finite state machine approach eliminates the need for firmware
- 8-channel (STMP5821) and 12-channel (STMPE1201S)
- I²C communication interface
- Ultra-low power consumption (1 µA in sleep mode)
- 8 kV HBM ESD protection

Serial real-time clocks

M41T62

- Serial RTC with alarm
- 32 kHz output
- Power supply from 1.3 to 4.4 V
- Timekeeping down to 1.0 V
- Current consumption: 350 nA at 3 V

Temperature sensors

STTS75

- Digital I²C temperature sensor
- +/-2 °C accuracy from -25 to +100 °C
- Power saving one-shot temperature measurement
- Power supply range: 2.7 to 5.5 V

STLM20

- Precision analog voltage output temperature sensor
- Operating voltage: 2.4 to 5.5 V
- Ultra-low quiescent supply current: 8.0 µA max

LNB power supply

Multi-function switching regulators

LNBP8/9/10/11L, LNBK/P20, LNBP1x, LNBP21, LNB21, LNBH21, LNBH21, LNBH221, LNBH23, LNBH24

- Built-in DC/DC converter for single 12 V supply with integrated NMOS
- Built-in 22 kHz tone detector supports bidirectional DiSEqC™ 2.0 receivers/Sat-TV, sat-PC cards
- LNB short circuit dynamic protection and diagnostic
- Dual tuner application (LNBH221 and LNBH24)

Lightning protection

LNBTVSx-xxxx

- 3000 W surge protection (10/1000 μ s)
- Up to 500 A peak protection (1.2/50 μ s; 8/20 μ s combination wave form)
- Unidirectional protection
- Adapted range of clamping voltages (from 30 to 45 V)

Audio block

LM833

- Low noise dual operational amplifier
- Wide power supply range: +/- 2 V to +/- 15 V
- 15 MHz bandwidth
- Low distortion and low noise

TSV358

- Low power rail-to-rail amplifier
- Low supply voltage: 2.7 V to 6 V
- Low current consumption: 450 μ A
- High output current capability: 80 mA
- High stability: up to 500 pF allowed on the output

TSH62

- Low cost rail-to-rail wide band amplifier
- Wide power supply range: 5 V to 12 V
- 60 MHz bandwidth
- Excellent PSRR leading to better audio performances

Data communication

RS-232 interface ICs

ST2XXE, ST32XXE

- \pm 15 kV human body model (E series)
- \pm 8 kV contact discharge and \pm 15 kV air-gap discharge IEC 1000-4-2, (E series)
- Data rate: 120 to 480 kbps
- Slew rate range: 3 to 30 V/ μ s

USBLC6-xxxx

- ESD protection
- Low capacitance (3 pF)
- 15 kV contact protection

Video block

Standard definition video

TSH122

- Single 2.5 - 5 V supply
- Integrated 6 dB gain
- Integrated 6th orders video reconstruction filter for (-3 dB bandwidth: 9 MHz)
- 0.1 dB gain flatness: 5.4 MHz minimum

TSH103/173

- Single 5 V supply
- Integrated 6 dB gain
- Integrated video reconstruction filters for SD (-3 dB bandwidth: 8.2 MHz)
- 0.1 dB gain flatness: 6 MHz

High definition video

TSH345/TSH346

- Single 5 V supply
- Integrated 6 dB gain
- Integrated 6th order video reconstruction filters for SD/PV/HD (TSH345) or HD only (TSH346)
- Multiplexed inputs (TSH345)

TSH343/TSH344

- Single 5 V supply
- >250 MHz bandwidth
- Slew rate > 750 V/ μ s
- 0.1 dB gain flatness: 65 MHz
- Internal 6 dB gain
- Integrated DC shift (TSH343)

HDMIULC6-xxx

- 15 kV (IEC61000-4-2) ESD protection
- Ultra-large bandwidth (5.3 GHz)
- Low clamping voltage
- No impact on signal integrity

HDMI2C1-5DIJ

- ESD protection (8 kV contact IEC61000-4-2)
- Signal booster and level-shifter for HDMI 1.3 control-link signals
- Long-cable drive (up to 750 pF)

Motion sensors (MEMS)

LIS302DL/LIS3LV02DL

- Voltage operating range from 2.16 V to 3.6 V
- +/- 2 +/- 8 dynamically selectable full scale
- I²C/SPI digital output interface
- Resolution up to 18 mg/digit (LIS302DL) and up to 1 mg/digit (LIS3LV02DL)
- Programmable multi-interrupt generator
- Embedded self-test
- High shock survivability

LISY300AL

- Voltage operating range from 2.7 V to 3.6 V
- 300°/sec
- Absolute analog rate output
- Low rate noise density
- Embedded low pass filters
- Embedded self-test
- High shock survivability

Smartcard reader

Smartcard interface (ASI)

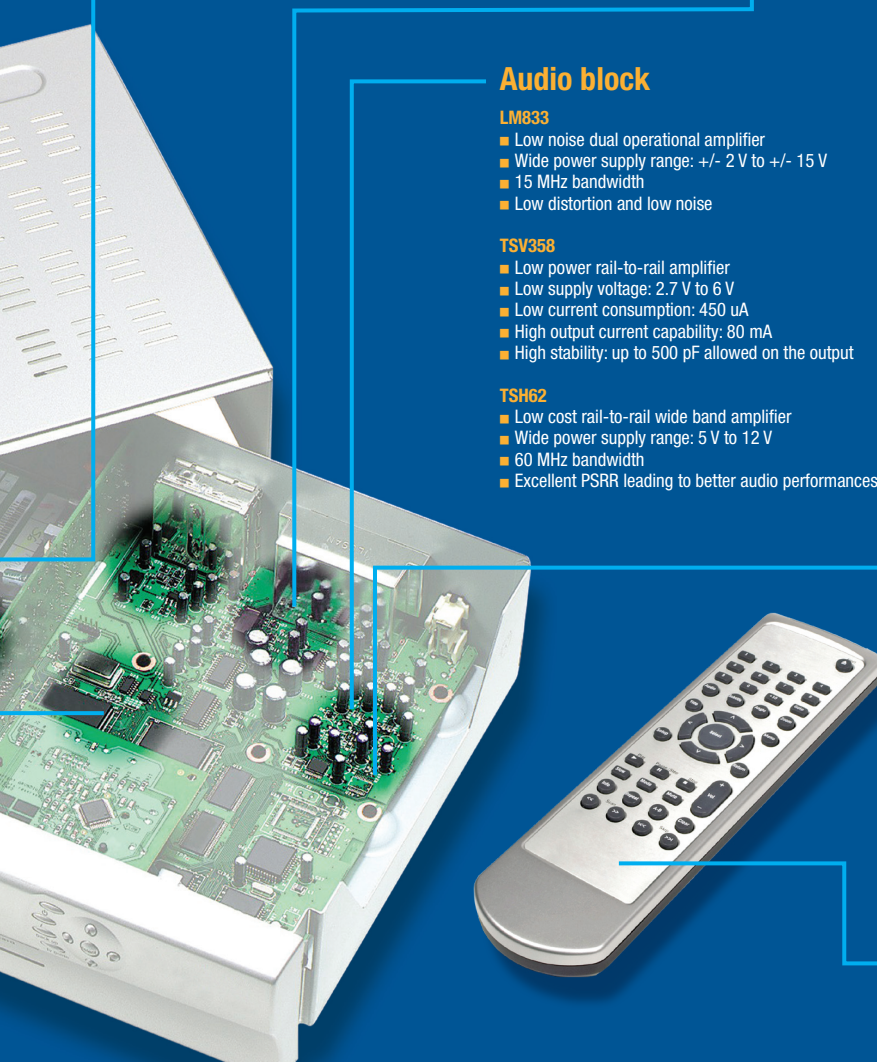
ST8004, ST8024

- ISO7816-3 compatible with the NDS conditional access system (ST8024 in progress)
- 3 specific, protected half duplex bi-directional buffered I/O lines
- Thermal and short-circuit protection on all card contacts
- 26 MHz integrated crystal oscillator
- Step-up converter for V_{cc} generation

Microcontrollers

ST7SCR/GEM

- 8-bit microcontroller core
- 16 Kbyte Flash or ROM memory
- ISO7816 UART interface
- Power supply management unit (5, 3, and 1.8 V)
- Possibility of embedded application firmware (ST7GEM version)



Power management

DC-DC conversion - step-down

Part number	Description	Package	V_{in} (V)	V_{out} (V)	I_{out} max (A)	Switching frequency (kHz)
L5970AD	1.5 A switch step-down switching regulator	S08	4.4 to 36	0.5 to 35	1.5	500
L5972D	2 A switch step-down switching regulator	S08	4.4 to 36	1.23 to 35	2	250
L5973AD	2 A switch step-down switching regulator	HSOP8	4 to 36	0.5 to 35	2	500
L5973D	2.5 A switch step-down switching regulator	HSOP8	4 to 36	0.5 to 35	2.5	250
L5980	700 mA step-down switching regulator	QFN3x3 8L	2.9 to 18	0.6 to V_{in}	1	250 - adjustable up to 1 MHz
L5981	1 A step-down switching regulator	QFN3x3 8L	2.9 to 19	0.6 to V_{in}	1.5	251 - adjustable up to 1 MHz
L5983	1.5 A step-down switching regulator	QFN3x3 8L	2.9 to 20	0.6 to V_{in}	2	252 - adjustable up to 1 MHz
L5985	2 A step-down switching regulator	QFN3x3 8L	2.9 to 21	0.6 to V_{in}	2.5	253 - adjustable up to 1 MHz
L6925D	High-efficiency monolithic synchronous step-down regulator	MSOP8	2.7 to 5.5	0.6 to 5.5	1.2	600
L6926	High-efficiency monolithic synchronous step-down regulator	MSOP8	2 to 5.5	0.6 to 5.5	1.2	600
L6926D1	High-efficiency monolithic synchronous step-down regulator	VFSON8	2 to 5.5	0.6 to 5.5	1.2	600
L6926Q1	High-efficiency monolithic synchronous step-down regulator	QFN3x3 8L	2 to 5.5	0.6 to 5.5	1.2	600
L6928D	High-efficiency monolithic synchronous step-down regulator	MSOP8	2 to 5.5	0.6 to 5.5	1.2	1400
L6928Q1	High-efficiency monolithic synchronous step-down regulator	QFN3x3 8L	2 to 5.5	0.6 to 5.5	1.2	1400
ST1S03	1.5 A, 1.5 MHz adjustable, step-down switching regulator	DFN 6L	3 to 16	0.8 typ	1.5	1500
ST1S06	Synchronous rectification with inhibit, 1.5 A, 1.5 MHz fixed or adjustable, step-down switching regulator	DFN 6L	2.5 to 6	0.8 typ	1.5	1500
ST1S09I	2 A, 1.5 MHz PWM step-down switching regulator with synchronous rectification	DFN 6L	2.7 to 6	0.8 typ	2	1500
ST1S10	3 A, 900 kHz, monolithic synchronous step-down regulator	MLP8L,S08 ex.p	2.5 to 18	0.8 typ	3	900
ST1S12	Synchronous rectification with enable, 0.7 A, 1.7 MHz fixed or adjustable step-down switching regulator	TSOT23-5L	2.5 to 5.5	0.6 typ	0.7	1700
ST2S06B	Dual synchronous rectification with reset or inhibit, 0.5 A, 1.5 MHz adjustable step-down switching regulator	QFN 12L	2.5 to 5.5	0.8 typ	0.5, 0.5	1500

DC-DC conversion - step-up

Part number	Description	Package	V_{in} (V)	V_{out} (V)	I_{out} (A)	Switching frequency (kHz)
ST8R00W	Synchronous DC-DC converter	DFN8L	4 to 6	6 to 12	1	1400

Power management

DC-DC conversion - multi-output regulators

Part number	Package	Description	V _{in} (V)	V _{out} PWM1 (V)	V _{out} PWM2 (V)	V _{out} PWM3 (V)	V _{out} LD01 (V)	V _{out} LD02 (V)	Fsw (kHz)	I _{out} PWM (A)	I _{out} LD01 (mA)	I _{out} LD02 (mA)
PM6680	QFN 5x5 32	Dual adjustable output controller	5.5 to 28	0.9 to 5	0.9 to 3.3	-	5	-	200 to 500	up to 10	up to 200	-
PM6675S	QFN 4x4 24	High-efficiency step-down controller with embedded 2 A LDO regulator	4.5 to 28	0.6 to 3.3	-	-	0.6 to 2	-	200 to 500	up to 10	up to ±2000	-
PM6681A	QFN 5x5 32	Dual synchronous step-down controller with adjustable LDO regulator	5.5 to 36	0.9 to 5	0.9 to 3.3	-	5	0.9 to 3.3	200 to 500	up to 10	up to 200	up to 120
PM6641	QFN 7x7 48	Monolithic voltage regulator for chipset and DDR2/3 supply	2.7 to 5.5	0.8 to 4.7	0.8 to 4.7	0.8 to 4.7	0.5 * VinLDO	-	500 to 1000	up to 2.5	up to ±2000	-

Single-phase switching DC-DC controllers and smart regulators

Part number	Package	Input voltage (V)	Output voltage (V)	Supply voltage (V)	Output current (A) max
L6726A	S08	19 max	0.8 min	4.1 to 13.2	30
L6727	S08	19 max	0.8 min	4.1 to 13.2	30
L6728/A	DFN10	15 max	0.8 min	4.1 to 15	30
L6935	VFQFPN20	0.5 to 5	0.5 to 3	1.2 to 5	3
L6933H	HSOP8	2 to 14	1.2 to 5	-	2
L6932D	S08	2 to 14	1.2 to 5	-	2
L6932H	HSOP8	2 to 14	1.2 to 5	-	2

AC-DC conversion - high voltage converters

Part number	Package	Power capability (W) max	Drain source voltage (V) min	V _{DO} (V)		R _{DS(on)} (Ω) max	I _{out} (A) min	Switching frequency (kHz) typ	Switching frequency mode	Max duty cycle (%) typ	Topology	Current limiting mode	Standby mode
				min	max								
VIPER53SP-E	PowerSO-10	40	620	9.3	40	1	1.6	up to 300	Fixed frequency (settable)	90	Buck-boost, buck, flyback	Pulse	Burst mode
VIPER53DIP-E	DIP-8	30	620	9.3	30	1	1.6	up to 300	Fixed frequency (settable)	90	Buck-boost, flyback	Pulse	Burst mode
VIPER53ESP-E	PowerSO-10	40	620	9.3	40	1	1.6	up to 300	Fixed frequency (settable)	90	Buck-boost, flyback	Pulse	Burst mode
VIPER53EDIP-E	DIP-8	30	620	9.3	30	1	1.6	up to 300	Fixed frequency (settable)	90	Buck-boost, flyback	Pulse	Burst mode
VIPER22AS-E	S0-8	7	730	9	7	17	0.56	60	Fixed frequency	90	Buck-boost, flyback	Pulse	Burst mode
VIPER22ADIP-E	DIP-8	12	730	9	12	17	0.56	60	Fixed frequency	90	Buck-boost, buck, flyback	Pulse	Burst mode

Power management

AC-DC conversion - high voltage converters (cont'd)

Part number	Package	Power capability (W) max	Drain source voltage (V) min	V_{DO} (V)		$R_{DS(on)}$ (Ω) max	I_{out} (A) min	Switching frequency (kHz) typ	Switching frequency mode	Max duty cycle (%) typ	Topology	Current limiting mode	Standby mode
				min	max								
VIPER17LN	DIP-7	7	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	60	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER17HN	DIP-7	7	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	115	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER17LD	S016N	7	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	60	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER17HD	S016N	7	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	115	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER15LN	DIP-7	8	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	limited to 136	Quasi resonant	70	Flyback	Pulse	Burst mode
VIPER15HN	DIP-7	8	800 (avalanche rugged)	8.5	23.5	20	from 0.2 to 0.4 (settable)	limited to 225	Quasi resonant	70	Flyback	Pulse	Burst mode
VIPER27LN	DIP-7	13	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.7 (settable)	60	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER27HN	DIP-7	13	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.7 (settable)	115	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER25LN	DIP-7	15	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.7 (settable)	limited to 136	Quasi resonant	70	Flyback	Pulse	Burst mode
VIPER25HN	DIP-7	15	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.7 (settable)	limited to 225	Quasi resonant	70	Flyback	Pulse	Burst mode
VIPER28LN	DIP-7	13	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.8 (settable)	60	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode
VIPER28HN	DIP-7	13	800 (avalanche rugged)	8.5	23.5	8	from 0.2 to 0.8 (settable)	115	Fixed frequency with jittering	70	Flyback, buck-boost, buck	Pulse	Burst mode

AC-DC conversion - PWM controllers

Part number	Package	Description	Topology	V_{oc} range (V)	Quiescent current (mA)	Max duty cycle (%)	Oscillator frequency (kHz)
L6668	S016N	Smart primary controller	Buck, boost, buck-boost, flyback, forward (including 2-switch forward)	9.4 (min), 22 (max)	2	75	100
L6566B	S016N	Multimode primary controller	Buck, boost, buck-boost, flyback, forward (including 2-switch forward)	8 (min), 23 (max)	2.5	70	300 (max)

Linear regulators - very low dropout

Part number	Description	V_{in} max (V)	V_{out} (V)	I_{out} (A)	V_{drop} typ (V)	I_q (mA)	Enable pin	Package	Operating temperature ($^{\circ}$ C)	
									min	max
LD1117	Low drop adjustable positive voltage regulator	15	Adjustable, 1.2, 1.8, 2.5, 2.85, 3.0, 3.3, 5.0	0.8	1.1		No	DPAK, T0220, SOT223	0	125
LD1117A	Low drop adjustable positive voltage regulator	15	Adjustable, 1.2, 1.8, 2.5, 3.3	1	1.1	5	No	DPAK, T0220, SOT223	0	125
LD108x	Low drop positive voltage regulator	30	Adjustable, 1.5, 1.8, 2.5, 2.85, 3.3, 3.6, 5, 8, 12	1.5, 3, 5	1.3	5	No	DPAK, T0220, SOT223	-40	125

Power management

Linear regulators - very low dropout (cont'd)

Part number	Description	V _{in} max (V)	V _{out} (V)	I _{out} (A)	V _{drop} typ (V)	I _q (mA)	Enable pin	Package	Operating temperature (°C)	
									min	max
LFxx	Very low drop voltage regulator with inhibit	40	2.5, 2.7, 3.3, 3.5, 5, 8, 12	0.5	0.4	5	Yes	PPAK, DPAK, TO220, TO220FP	-40	125
KFxx	Very low drop voltage regulator with inhibit	20	1.5, 2.5, 3.3, 4, 5, 8	0.5	0.4	5	Yes	SO8, DPAK	-40	125
L4931	Very low drop voltage regulator with inhibit	20	1.5, 1.8, 2.5, 3.3, 4.7, 5, 6, , 8, 8.5, 9, 12	0.25	0.4	6	Yes	SO8, TO92, DPAK, PPAK, TO220	-40	125
LD29080/150/300	Very low drop voltage regulators	14	Adjustable, 1.5, 1.8, 2.5, 3.3, 5, 8	0.8, 1.5, 3	0.4	30	Yes	PPAK, TO220, DPAK, D2PAK, P2PAK	-40	125
LD39080/150/300	Ultra low drop BiCMOS voltage regulator	6	Adjustable, 1.22, 1.8, 2.5, 3.3	0.8, 1.5, 3	0.2	1	Yes	DPAK, PPAK, DFN8L	-40	125
LD49150/300	Very low drop for low output voltage regulator	5.5	Adjustable down to 0.8	1.5, 3	1.5	4	Yes	PPAK	-25	125
ST1L02	Very low quiescent BiCMOS voltage regulator	10	1.8, 2.5, 3.3	1	0.7	0.5	No	VFDFPN 6	0	125
ST1L04	Low quiescent current voltage regulator	10	Adjustable from 0.8	1	1	3	No	PPAK 5L	-40	150
ST1L05	Very low quiescent BiCMOS voltage regulator	7	Adjustable, 1.8, 2.5, 3.3	1.3	0.3	0.65	Yes	VFDFPN 6	-40	150

Voltage reference

Part number	Description	Operating temperature (°C)		Precision (%)	Cathode-to-anode voltage		Package
		min	max		min (V)	max (V)	
TS2431	Programmable shunt voltage reference	-40	105	2, 1, 0.5	2.5	24	SOT23-3
TS3431	Programmable shunt voltage reference	-40	125	2, 1, 0.5, 0.25	1.2	24	SOT23-3, TO92

Reset ICs

Part number	Description	Manual reset	Programmable delay	Reset pulse width typ (ms)	1 st voltage threshold (V)	2 nd voltage threshold (V)	3 rd voltage threshold	4 th voltage threshold	5 th voltage threshold
STM1061	Voltage detector, open-drain low				1.6, 1.7, 1.9, 2.1, 2.2, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 3.0, 3.1, 3.4, 3.8				
STM809	Reset push-pull low			210	4.63, 4.38, 3.08, 2.93, 2.63				
STM810	Reset push-pull high			210	4.63, 4.38, 3.08, 2.93, 2.63				
STM811	Reset push-pull low	X		210	4.63, 4.38, 3.08, 2.93, 2.63				
STM812	Reset push-pull high	X		210	4.63, 4.38, 3.08, 2.93, 2.63				
STM1001	Reset open-drain low			210	4.63, 4.38, 3.08, 2.93, 2.63				

Power management

Reset ICs (cont'd)

Part number	Description	Manual reset	Programmable delay	Reset pulse width typ (ms)	1 st voltage threshold (V)	2 nd voltage threshold (V)	3 rd voltage threshold	4 th voltage threshold	5 th voltage threshold
STM6315	Reset open-drain low	X		1.5, 20, 210, 1680	4.63, 2.93, 2.63				
STM1810	Reset push-pull low			150	4.63, 4.38				
STM1811	Reset open-drain low with pull-up			150	4.63, 4.38				
STM1812	Reset push-pull high			150	4.63, 4.38				
STM1813	Reset open-drain low bidirectional			150	4.63, 4.38				
STM1815	Reset push-pull low			150	3.08, 2.93, 2.63				
STM1816	Reset open-drain low with pull-up			150	3.08, 2.93, 2.63				
STM1817	Reset push-pull high			150	3.08, 2.93, 2.63				
STM1818	Reset open-drain low bidirectional			150	3.08, 2.93, 2.63				
STM6717	Dual reset open-drain low	X		210	3.08, 2.93	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05, 0.875, 0.788			
STM6718	Dual reset push-pull low	X		210	3.08, 2.93	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05			
STM6719	Triple reset open-drain low	X		210	3.08, 2.93	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05	Adjustable		
STM6720	Triple reset push-pull low	X		210	3.08, 2.93	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05	Adjustable		
STM6777	Dual reset open-drain low	X	X	210	4.63, 4.38, 3.08, 2.93, 2.63	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05			
STM6778	Dual reset push-pull low	X	X	210	4.63, 4.38	2.31, 2.18, 1.66, 1.57, 1.31, 1.11, 1.05			
STM6779	Dual reset open-drain low	X	X	210	4.63, 3.08, 2.93, 2.18, 1.57		Adjustable		
STM6780	Dual reset push-pull low	X	X	210	4.63, 3.08, 2.93, 2.18, 1.57		Adjustable		
STM6904	Quad open-drain low with pull-up	X		210 / 420	3.08, 2.96, 2.86	2.33, 1.68, 1.11, 1.05	Adjustable	Adjustable	
STM6905	Quint open-drain low with pull-up	X		210	3.08, 2.96, 2.86	2.33, 1.68, 1.11, 1.05	Adjustable	Adjustable	Adjustable

Microprocessor supervisors

Part number	Description	Watchdog	Manual reset	Reset pulse width typ (ms)	Operating voltage (V)	Voltage threshold (V)	Temperature range (°C)		Package
							min	max	
STWD100	Watchdog with chip enable	X			2.7 to 5.5		-40	85	SOT23-5
STM6321	Watchdog with reset open-drain low and push-pull high	X		210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5
STM6322	Reset push-pull high and open-drain low		X	210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5

Power management

Microprocessor supervisors (cont'd)

Part number	Description	Watchdog	Manual reset	Reset pulse width typ (ms)	Operating voltage (V)	Voltage threshold (V)	Temperature range (°C)		Package
							min	max	
STM6821	Watchdog with reset push-pull high	X	X	210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5
STM6822	Watchdog with reset open-drain low	X	X	210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5
STM6823	Watchdog with reset push-pull low	X	X	210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5
STM6824	Watchdog with reset push-pull low and high	X		210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5
STM6825	Reset push-pull low and high		X	210	1.2 to 5.5	4.63, 4.38, 3.08, 2.93, 2.63	-40	85	SOT23-5

Power Schottky diodes

Part number	Package	General description	Number of diodes	Repetitive peak reverse voltage (VRRM) (V)	Average rectified current (IF(av)) max (A)	Forward voltage (VF) max (V)	@ IF (condition) (A)	Reverse current (IR) max (µA)	@ VR @ 25 °C (condition) (V)	Non-repeat peak forward surge current (IFSM) max (A)	Junction temperature (Tj) max (°C)	Mounting	Packing type
STPS2L30A	SMA	Low drop power Schottky rectifier	1	30	2	0.38	2	2.00E-04	(@ VRRM)	75	150	Surface mount	Tape and reel
STPS2L25U	SMB clip (SOD 6 new)	Low drop power Schottky rectifier	1	25	2	0.38	2	9.00E-05	(@ VRRM)	75	150	Surface mount	Tape and reel
STPS2L40UF	SMB Flat NEP	Low drop power Schottky rectifier	1	40	2	0.34	2	2.20E-04	(@ VRRM)	75	150	Surface mount	Tape and reel

Power MOSFETs

Part number	Description	Tj max (°C)	V _{DSS} (V)	R _{DS(on)} @ 10 V (Ω)	I _o (A)	Package
STS9NH3LL	N-channel power MOSFET	150	30	0.025	9	S0-8
STS12NH3LL	N-channel power MOSFET	150	30	0.013	12	S0-8
STS14N3LLH5	N-channel power MOSFET	150	30	0.0095	14	S0-8
STS17NH3LL	N-channel power MOSFET	150	30	0.0075	17	S0-8
STS25NH3LL	N-channel power MOSFET	150	30	0.005	25	S0-8
STS20NHS3LL	N-channel power MOSFET	150	30	0.0057	20	S0-8
STS15N4LLF3	N-channel power MOSFET	150	40	0.007	15	S0-8

Power management

Power MOSFETs (cont'd)

Part number	Description	T_j max (°C)	V_{DSS} (V)	$R_{DS(on)}$ @ 10V (Ω)	I_D (A)	Package
STS4DNFS30L	N-channel power MOSFET	150	30	0.05	5	SO-8
STS8DNH3LL	N-channel power MOSFET	150	30	0.022	7	SO-8
STS9D8NH3LL	N-channel power MOSFET	150	30	0.016	9	SO-8
STS4DNF60L	N-channel power MOSFET	150	60	0.065	4	SO-8
STD17NF03L	N-channel power MOSFET	150	30	0.05	17	DPAK
STD50N03L	N-channel power MOSFET	150	30	0.01	50	DPAK
STD60N3LH5	N-channel power MOSFET	150	30	0.0083	60	DPAK
STD85N3LH5	N-channel power MOSFET	150	30	0.0055	85	DPAK
STL65N3LLH5	N-channel power MOSFET	150	30	0.0075	65	DPAK
STL150N3LLH5	N-channel power MOSFET	150	30	0.002	15	PowerFlat 6x5
STK820	N-channel power MOSFET	150	25	0.0073	21	PolarPAK
STK822	N-channel power MOSFET	150	25	0.0021	38	PolarPAK
STK800	N-channel power MOSFET	150	30	0.0078	20	PolarPAK
STK850	N-channel power MOSFET	150	30	0.0029	30	PolarPAK
STD3NK50ZT4	N-channel power MOSFET	150	500	3.3	2.3	DPAK
STD4NK50ZT4	N-channel power MOSFET	150	500	2.7	3	DPAK
STP5NK50ZFP	N-channel power MOSFET	150	500	1.5	4.4	TO-220FP
STP9NK50ZFP	N-channel power MOSFET	150	500	0.85	7.2	TO-220FP
STP4NK60ZFP	N-channel power MOSFET	150	600	2	4	TO-220FP
STP6NK60ZFP	N-channel power MOSFET	150	600	1.2	6	TO-220FP
STP10NK60ZFP	N-channel power MOSFET	150	600	0.75	10	TO-220FP
STD3NK80ZT4	N-channel power MOSFET	150	800	4.5	2.5	DPAK
STP4NK80ZFP	N-channel power MOSFET	150	800	3.5	3	TO-220FP
STP5NK80ZFP	N-channel power MOSFET	150	800	2.4	4.3	TO-220FP

Audio / Video

High-speed operational amplifiers - video drivers

Part number	Description	V _{supply} (V)	Number of operators	Gain (dB)	Filter bandwidth (MHz)	I _{supply} (mA)	Temperature range (°C)		Package
							min	max	
TSH120ICT	Single video buffer with filter and sag correction	2.2 to 5.5	1	6	6	5	-40	85	SC70
TSH122ICT	Low-power 6th-order single video buffer with filter and sag correction	2.2 to 5.5	1	6	9	2	-40	85	SC70
TSH173IDT	Triple video buffer with filter for SD video	4.5 to 5.5	3	6	6	7	-40	85	S08
TSH103IDT	Low-cost triple video buffer with filter for SD video	4.5 to 5.5	3	6	6	5.8	-40	85	S08
TSH343IDT	280 MHz triple video buffer with DC shift	4.5 to 5.5	3	6	No filter	13	-40	85	S08
TSH344IDT	340 MHz triple video buffer	4.5 to 5.5	3	6	No filter	13	-40	85	S08
TSH345IDT	Triple video buffer with selectable filter for SD/PV/HD video	3.3 to 5.5	3	6	6/12/30	16	-40	85	S014/TSSOP14
TSH346IDT	Triple video buffer with filter for HD video	3.3 to 5.5	3	6	30	16	-40	85	S08
TSH6x	Low-cost wide-band rail-to-rail amplifier	4.5 to 12	1, 2, 3, 4	NA	No filter	8	0	70	S08/S014
TSH7x	Wide-band rail-to-rail amplifiers	3 to 12	1, 2, 3, 4	NA	No filter	8	0	70	SOT23/S08/S014/TSSOP14

Analog video switches

Part number	Description	V _{cc} (V)	R _(on) [mΩ]	-3 dB bandwidth (MHz)	X _{talk} (dB)	C _{in} (pF)	I _{cc} (μA)	ESD (kV)	Package
STMAV340TTR	Quad SPDT high bandwidth switch	4 to 5.5	4	300 (min)	-58 (typ)	3 (typ)	3	2 (HBM)	TSSOP-16
STMAV335TTR	Triple SP3T high bandwidth switch	3.3	4	300 (min)	-58 (typ)	3 (typ)	3	2 (HBM)	TSSOP-16

Protection devices - ESD suppressors

Part number	Package	Leakage current (IRM) max (μA)	General description	Mounting	Breakdown voltage (Vbr) min (V)	Reverse current (IR) (mA)	Forward voltage (Vf) max (V)	Terminal capacitance (Ct) typ (pF)	Number of protected lines (typ)	Peak pulse power dissipation (PPP) typ (W)	Stand-off voltage (VRM) typ (V)	Maximum soldering temperature (TL) typ (°C)	Packing type
ESDA14V2L	SOT 23 simple diode	5	Dual Transil array for ESD protection	Surface mount	14.2	1	1.25	90	2	300	12	260	Tape and reel
ESDA6V1-4BC6	SOT 23 - 6L	1	Quad bidirectional Transil suppressor for ESD protection	Surface mount	6.1	1	-	45	4	80	3	260	Tape and reel

Data communication

Operational amplifiers

Part number	Description	Temperature range (°C)		I _{supply} (mA)	V _{cc} min (V)	V _{cc} max (V)	Input offset max (mV)	Bandwidth (MHz)	Package
		min	max						
LM833	Low-noise dual operational amplifier	-40	105	2	5	30	5	15	S08
LMV358	Low-cost, low-power I/O rail-to-rail op-amp	-40	125	0.15	2.7	6	3	1	S08/TSSOP8
TSV358	General-purpose, I/O rail-to-rail, low-power op-amp	-40	125	0.45	2.7	6	3	1.4	S08/TSSOP8/MiniS08
TSH62	Low-cost wide-band rail-to-rail amplifier	0	70	8	4.5	12	10	60	S08
TSH72	Wide-band rail-to-rail amplifier	0	70	8	3	12	10	90	S08/TSSOP8

Digital switches

Part number	Description	V _{cc} (V)	C _{in} (pF) typ	Data rate (Gbit/s)	ESD (kV)	DDC	HPD	CEC	50 Ω input termination	Other features	Package
STHDMI002ABTR	1.65 Gbit/s 2-to-1 HDMI (HDMI v1.2) switch (passive)	3.3	2	1.65	2 (HBM)	Switch	Switch	No	No	No	TQFP-48
STDVE003ABTR	3.4 Gbit/s 3-to-1 HDMI (HDMI v1.3) switch with equalizer	3.3	3.5	3.4	8 (contact)	Buffer/switch	Switch	No	Yes (selectable)	EQ boost for long cable	TQFP-80
STDVE103ABTR	3.4 Gbit/s 3-to-1 HDMI (HDMI v1.3) switch with equalizer	3.3	3.5	3.4	6 (contact)	Buffer/switch	Switch	No	Yes (selectable)	No	TQFP-64
STDVE001AQTR	3.4 Gbit/s single HDMI repeater	3.3	3.5	3.4	8 (contact)	Buffer	N.A.	Yes (buffer)	N.A.	EQ boost for long cable	QFN-48

Interface ICs - USB

Part number	Description	V _{bus} (V)		Data rate	Number of Dx/Rx	I _{cc} (mA)	ESD (kV)	t _{PLH} † t _{PHL} (ns)	Operating temperature (°C)		Package
		V _{hi}	V _{fl}						min	max	
STUSB02E	USB transceiver	4 to 5.5	1.6 to 3.6	1.5 Kbit/s to 12 Mbit/s	1/1	5	14	20	-40	85	QFN16
STUSB03	USB transceiver	4 to 5.5	1.6 to 3.6	1.5 Kbit/s to 12 Mbit/s	1/1	5	14	18	-40	85	QFN16
STOTG04E	USB-OTG full-speed transceiver	2.7 to 5.5	1.6 to 3.6	1.5 Kbit/s to 12 Mbit/s	1/1	7	8	38	-40	85	QFN24

Data communication

Interface ICs - RS-232

Part number	Supply voltage V_{cc} (V)	Number of Dx/Rx	I_{cc} typ (mA)	External capacitors (μ F)	No. of external capacitors	High ESD protections (kV)	Packages	Data rate typ (Kbit/s)
ST2xxE	5	2/2, 5/3	2 to 5	0.1 to 1	4	15	DIP, SO, TSSOP, SSOP	230 to 480
ST32xxE	3	2/2, 5/3, 3/5	0.3	0.1	4	15	DIP, SO, TSSOP, SSOP, Flip-chip	250

Protection devices - ESD suppressors

Part number	Package	Leakage current (IRM) max (μ A)	General description	Mounting	Breakdown voltage (Vbr) min (V)	Reverse current (IR) nom (mA)	Terminal capacitance (Ct) typ (pF)	Number of protected lines typ	Maximum soldering temperature (TL) typ ($^{\circ}$ C)	Packing type
HDMIULC6-2M6	MicroQFN	0.5	Ultra low capacitance 2-line ESD protection	Surface mount	6	1	0.6	2	260	Tape and reel
HDMIULC6-4SC6	SOT 23 - 6L	0.5	Ultra large bandwidth ESD protection	Surface mount	6	1	0.6	4	260	Tape and reel
USBLC6-2P6	SOT 666	see note 1	Very low capacitance ESD protection	Surface mount	6	1	2.5	2	260	Tape and reel
USBLC6-4SC6	SOT 23 - 6L	see note 1	Very low capacitance ESD protection	Surface mount	6	1	3	4	260	Tape and reel

(1) 150 nA

Protection devices - 100 A Trisils

Part number	Package	General description	Mounting	Continuous reverse current I_R @ V_R max (μ A)	Continuous reverse voltage V_R min (V)	Junction capacitance C typ (pF)	Holding current I_H min (mA)	Peak pulse current I_{pp} 10/1000 μ s max (A)	Stand-off voltage V_{RM} max (V)	Dynamic breakover voltage V_{BO} max (V)	Static breakover current I_{BO} nom (mA)	Stand Off current IRM (IRM) max (μ A)	Packing type
SMP100LC-25	SMB CLIP (SOD 6)	Trisil standard 100 A low capacitance	Surface mount	5	25	65	150	100	22	40	800	2	Tape and reel
SMP100LC-200	SMB CLIP (SOD 6)	Trisil standard 100 A low capacitance	Surface mount	5	200	60	150	100	180	255	800	2	Tape and reel
SMP100LC-270	SMB CLIP (SOD 6)	Trisil standard 100 A low capacitance	Surface mount	5	270	60	150	100	243	345	800	2	Tape and reel

EMI filtering and conditioning

Part number	Package	General description	Mounting	ESD protection level	Operating temperature range ($^{\circ}$ C)	
					min	max
HDMI2C1-5DIJ	QFN 5x4, 16 leads, 500 μ m pitch	Fully integrated ESD protection, bi-directional level-shiftingbuffer and signal booster for control links of HDMI 1.3 transmitters	Surface mount	IEC61000-4-2 level 4, 8 kV contact	-40	85

LNB power supply

Multifunction linear regulators

Part number	Description	Input voltage typ V_{in} (V)	I_o (max) (A)	Built-in 22 kHz oscillator	DiSeqC		Eutelsat compliant	Operating temperature (°C)		Efficiency (%)	Overload flag	Over-temperature flag	Dynamic overload protection	Package
					1.x compliant	2.x compliant		min	max					
LNBP10/11	LNB supply and control voltage regulator	16/23	0.5	X	X		X	-25	125	-	X	X	X	IPPAK/DFN 10
LNBP1x/20	LNB supply and control voltage regulator	16/23	0.5	X	X		X	-25	125	-	X	X	X	PS010/PS020

Multifunction switching regulators

Part number	Description	Input voltage typ V_{in} (V)	I_{out} (max) (A)	Built-in 22 kHz oscillator	DiSeqC		Eutelsat compliant	Operating temperature (°C)		Efficiency (%)	Overload flag	Over-temperature flag	Dynamic overload protection	Package
					1.x compliant	2.x compliant		min	max					
LNBH21	LNB supply and control IC with step-up converter and I ² C interface	12	0.75	X	X	X	X	-25	125	80	through I ² C	through I ² C	x	PS020
LNBH221	Dual LNB supply and control IC with step-up converter and I ² C interface	12	0.75	X	X	X	X	-25	125	80	through I ² C	through I ² C	x	PS036
LNBH23	LNB power supply and control IC with step-up, I ² C and embedded NMOS	12	1	X	X	X	X	-25	125	93	through I ² C	through I ² C	x	PSS024-ep / QFN 32
LNBH24	Dual LNB power supply and control IC with step-up, I ² C and embedded NMOS	12	1	X	X	X	X	-25	125	93	through I ² C	through I ² C	x	PSS036-ep

Microcontrollers

Part number	Package	Program memory type	Internal ROM size (Kbyte)	Internal RAM size (byte)	A/D converter	12 or 16-bit timer (IC/OC/PWM)	8-bit timer (IC/OC/PWM)	Other timer functions	Serial Interface	LVD Levels	I/Os (high current)	Supply voltage (V_{cc})		Other functions
												min (V)	max (V)	
ST7LNB0V2Y0	S016	ROM	1.5	128	-	-	-	-	-	-	13(6)	4.5	5.5	DiSeqC™ 2.1 interface, 22 kHz tone detector

Protection devices - 3000 W Transils

Part number	Package	Peak pulse power dissipation (PPP) typ (W)	Stand-off voltage VRM typ (V)	Directionality	Breakdown voltage VBR min (V)	Clamping voltage max (V)	General description	Stand-off current (IRM) max (μA)	Reverse current (IR) (mA)	Peak pulse current (IPP) typ (A)	Non-repeat peak forward surge current (IFSM) max (A)	Mounting	Packing type
LNBTVS6-221S	SMC clip (SOD 15 new)	3000	20	Unidirectional	22	32	Lightning protection for LNB power supply	1	1	500	200	Surface mount	Tape and reel
LNBTVS6-304S	SMC clip (SOD 15)	3000	28	Unidirectional	30	45	Lightning protection for LNB power supply	1	1	500	300	Surface mount	Tape and reel

Front panel

VFD/LED front-panel controllers

Part number	Description	V _{cc} (V)	Number of digits/segments	Interface	Key scan	IR decoder	Dimming	Programmable hot-keys (wake-up)	Special feature	Package
STLED316SMTR	Serial-interfaced, 6-digit LED display panel controller with key scan	5	Configurable: up to 7-digits/8-segments	Serial (CLK, STB, DIN, DOUT)	8 x 2	No	8-steps	No	-	S0-24
STFPC311BTR	VFD controller with standby power management	3.3	Configurable: 8-digits/20-segments to 16-digits/12-segments	Serial (CLK, STB, DIN, DOUT)	12 x 2	Yes	8-steps	Yes	Standby power management	PQFP-52
STFPC320BTR	VFD controller with standby power management + RTC	3.3	Configurable: 8-digits/20-segments to 16-digits/12-segments	I ² C (SCL, SDA)	12 x 2	Yes	8-steps	Yes	Standby power management, AV_Pin8, integrated RTC	PQFP-52
STM86312	VFD controller	5	Configurable: 6-digits/16-segments to 11-digits/11-segments	Serial (CLK, STB, DIN, DOUT)	6 x 4	No	8-steps	No	-	PQFP-44

Touch sensors

Part number	Description	V _{cc} (V)	Number of GPIOs	Number of touch-key channels	Communication	I _{ACTIVE} (μA)	I _{SLEEP} (μA)	ESD (kV)	Features	Package
STMP1208SQTR	12-channel Xpander Logic™ with touch-key controller (capacitive sensing)	2.5 - 5.5	12	12	I ² C	98 (typ)	1.0 (typ)	7 (HBM)	Advanced immunity against noise and environmental variance	QFN-40
STMP1821QTR	8-channel Xpander Logic™ with touch-key controller (capacitive sensing)	1.8- 3.3	8 (multiplexed with touch key)	8 (multiplexed with GPIO)	I ² C	60 (typ)	4.0 (typ)	8 (HBM)	Advanced immunity against noise and environmental variance	QFN-16

Temperature sensors

Part number	Description	Operating voltage (V)	Accuracy (°C)	Temperature range (°C)	Communication bus	Package
STLM20	Analog temperature sensor	2.4 to 5.5	+/-1.5 at 25 °C	-55 to 130		SC70-5, uDFN4
STTS75	Digital temperature sensor	2.7 to 5.5	+/-2 across -25 to 100 °C	-55 to 125	I ² C	S08, TSSOP8

Serial real-time clocks

Part number	Description	Operating voltage (V)	Internal switchover	Alarm	Watchdog	Square-wave output	Reset	Package
M41T60	I ² C, RTC	1.0 to 4.4						QFN16
M41T62	I ² C, RTC with alarm and 32 kHz output	1.0 to 4.4		X	X (muxed with alarm)	X		QFN16

Front panel

Serial real-time clocks (cont'd)

Part number	Description	Operating voltage (V)	Internal switchover	Alarm	Watchdog	Square-wave output	Reset	Package
M41T64	I ² C, RTC with 32 kHz output and square wave	1.0 to 4.4				X		QFN16
M41T65	I ² C, RTC with alarm and watchdog	1.0 to 4.4		X	X			QFN16
M41T0	I ² C, RTC	2.0 to 5.5						S08
M41T00S	I ² C, RTC with switchover	2.0 to 5.5	X					S08
M41T81S	I ² C, RTC with switchover and alarm	2.0 to 5.5	X	X	X (muxed with alarm)			S08, SOX18
M41T82	I ² C, RTC with switchover and reset	2.0 to 5.5	X				X	S08
M41T83	I ² C, RTC with switchover, alarm and reset, watchdog and 32 kHz output	2.0 to 5.5	X	2	X (muxed with one alarm)	X	X	QFN16

Microcontrollers

Part number	Package	Program memory type	Internal ROM size (Kbyte)	Internal RAM size (byte)	A/D converter	12 or 16-bit timer (IC/OC/PWM)	8-bit timer (IC/OC/PWM)	LVD Levels	I/Os (high current)	Supply voltage (V _{cc})		Other Functions
										min (V)	max (V)	
ST7FOXAO	S08	Flash	2	128	5 x 10-bit	1 x 12-bit (0/1/1)	1 x 8-bit (1/0/0)	1	6(5)	4.5	5.5	Precise RC, AWU, ROP, ICD, IAP
ST7LITEU0	S08	Flash	2	128	5 x 10-bit	1 x 12-bit (0/1/1)	1 x 8-bit (1/0/0)	1	6(5)	2.7	5.5	Precise RC, AWU, ROP, ICD, IAP

Smartcard reader

Smartcard ICs

Part number	ROM (Kbyte)	EEPROM (Kbyte)	RAM (Kbyte)	Cryptography	Interface
ST19NA18	128	18	4	EDES, AES, RSA	ISO 7816-3, IART
ST19NL66	224	66	6	EDES, AES, RSA	ISO 7816-3, IART
ST23YL18	200	18	6	EDES, AES, RSA	ISO 1876-3, IART
ST23YL48	200	48	6	EDES, AES, RSA	ISO 1876-3, IART
ST23YL80	400	80	8	EDES, AES, RSA	ISO 1876-3, IART
ST23YT66		66			

Smartcard reader

Smartcard interface (ASI)

Part number	Supply voltage (V)	Step-up converter	I _{out} max (mA)	Ripple on Vout max (mV)	Thermal and smartcard protection	ESD protection	Package	Operating temperature (°C)	
								min	max
ST8004	Vdd = 2.7 to 6.5 Vddp = 4.5 to 6	Yes	65	350	All card contacts	±4 kV (card contacts) standard	S0-28, TSSOP28	0	70
ST8024	Vdd = 2.7 to 6.5 Vddp = 4 to 6.5	Yes	65 at V _{cc} = 3 V 80 at V _{cc} = 5 V	350	All card contacts	±6 kV (card contacts) standard	S0-28, TSSOP28	0	70

Microcontrollers

Part number	Package	Program memory type	Internal ROM size (Kbyte)	Internal RAM size (byte)	A/D converter	12 or 16-bit timer (IC/OC/PWM)	8-bit timer (IC/OC/PWM)	Other timer functions	Serial interface	LVD levels	I/Os (high current)	Supply voltage (V _{cc})		Other functions
												min (V)	max (V)	
ST7FOXAO	S08	Flash	2	128	5 x 10-bit	1 x 12-bit (0/1/1)	1 x 8-bit (1/0/0)	-	-	1	6(5)	4.5	5.5	Precise RC, AWU, ROP, ICD, IAP
ST7SCR1E4	S0 24	Flash	16	768	-	-	1(0/0/0)	Watchdog	USB/ISO7816	1	4(1)	4	5.5	Smartcard power supply unit, ISO 7816, 7 full -speed USB endpoints, ICP, IAP, 4 LED outputs
ST7GEME4	S0 24	ROM	16	768	-	-	1(0/0/0)	Watchdog	USB/ISO7816	1	4(1)	4	5.5	Turnkey firmware from Gemalto

Security supervisors

Part number	Description	Tamper detect inputs	RST threshold (V _{PF}) typ (V)	Manual reset input (/MR)	Power fail comparator (PFI/PFO)	Over/under-temperature alarm	Over/undervoltage alarm	Package
STM1403	3 V FIPS-140 security supervisor with battery switchover	4	2.925 to 3.075	Yes	Yes	No	Yes	QFN16
STM1404	3 V FIPS-140 security supervisor with battery switchover	4	2.625 to 3.075	Yes	Yes	Yes	Yes	QFN16

Memories

Serial EEPROM, I²C bus

Part number	Package	Size (Kb)	Supply voltage (V _{cc})		Write cycle time (tWC) (ms)	Number of erase/write cycles (NW) (Kcycles)	Data retention min (years)
			min (V)	max (V)			
M24C02	S08, TSSOP8, MLP2X3	2	1.8	5.5	5	1000	40
M24C04	S08, TSSOP8, MLP2X3	4	1.8	5.5	5	1000	40
M24C08	S08, TSSOP8, MLP2X3	8	1.8	5.5	5	1000	40
M24C16	S08, TSSOP8, MLP2X3	16	1.8	5.5	5	1000	40
M24C32	S08, TSSOP8, MLP2X3	32	1.8	5.5	5	1000	40
M24C64	S08, TSSOP8, MLP2X3	64	1.8	5.5	5	1000	40
M24128	S08, TSSOP8, MLP2X3	128	1.8	5.5	5	1000	40
M24256	S08, TSSOP8	256	1.8	5.5	5	1000	40
M24512	S08, TSSOP8	512	1.8	5.5	5	1000	40
M24M01	S08	1000	1.8	5.5	5	1000	40

Serial EEPROM, Microwire[®] bus, M93

Part number	Package	Size (Kb)	Supply voltage (V _{cc})		Write cycle time (tWC) (ms)	Number of erase/write cycles (NW) (Kcycles)	Data retention min (years)
			min (V)	max (V)			
M93C46	S08, TSSOP8	1	2.5	5.5	5	1000	40
M93C56	S08, TSSOP8	2	2.5	5.5	5	1000	40
M93C66	S08, TSSOP8	4	2.5	5.5	5	1000	40

Separable security

Power switches

Part number	Description	V_I (V)	$R_{DS(on)}$ (m Ω)	I_{out} (continuous) (A)	I_{OS} (short circuit) (A)	I_{supply} (on) (μ A)	Features	Package
STMPS2141MTR	Single channel, 0.5 A, active low enable	2.7 to 5.5	110	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	SO-8
STMPS2141TTR	Single channel, 0.5 A, active low enable	2.7 to 5.5	110	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	MSO-8
STMPS2141STR	Single channel, 0.5 A, active low enable	2.7 to 5.5	90	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	SOT23-5
STMPS2151MTR	Single channel, 0.5 A, active high enable	2.7 to 5.5	110	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	SO-8
STMPS2151TTR	Single channel, 0.5 A, active high enable	2.7 to 5.5	110	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	MSO-8
STMPS2151STR	Single channel, 0.5 A, active high enable	2.7 to 5.5	90	0.5 (max)	0.9 (max)	70 (max)	Fault blanking, reverse-current protection	SOT23-5
STMPS2161MTR	Single channel, 1 A, active low enable	2.7 to 5.5	110	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	SO-8
STMPS2161TTR	Single channel, 1 A, active low enable	2.7 to 5.5	110	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	MSO-8
STMPS2161STR	Single channel, 1 A, active low enable	2.7 to 5.5	90	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	SOT23-5
STMPS2171MTR	Single channel, 1 A, active high enable	2.7 to 5.5	110	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	SO-8
STMPS2171TTR	Single channel, 1 A, active high enable	2.7 to 5.5	110	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	MSO-8
STMPS2171STR	Single channel, 1 A, active high enable	2.7 to 5.5	90	1.0 (max)	1.8 (max)	70 (max)	Fault blanking, reverse-current protection	SOT23-5
ST2042BDR	Dual channel, 0.5 A, active low enable	2.7 to 5.5	80	0.5 (max) per channel	1.3 (max)	100 (max)	Fault blanking	SO-8
ST2052BDR	Dual channel, 0.5 A, active high enable	2.7 to 5.5	80	0.5 (max) per channel	1.3 (max)	100 (max)	Fault blanking	SO-8
ST2044BDR	Quad channel, 0.5 A, active low enable	2.7 to 5.5	80	0.5 (max) per channel	1.3 (max)	100 (max)	Fault blanking	SO-16
ST2054BDR	Quad channel, 0.5 A, active high enable	2.7 to 5.5	80	0.5 (max) per channel	1.3 (max)	100 (max)	Fault blanking	SO-16
ST890CDR/BDR	Single channel, programmable output (up to 1.2 A), active low enable	2.7 to 5.5	75	Up to 1.2 (ADJ)	1.2 x IOU	25 (max)	-	SO-8
ST890DTR	Single channel, programmable output (up to 1.2 A), active low enable	2.7 to 5.5	75	Up to 1.2 (ADJ)	1.2 x IOU	25 (max)	-	DFN-8
STMEC001ATTR	Expresscard power switch (3 I/O: 3.3 V, 1.5 V, 3.3 V AUX)	1.35 to 1.65, 3.0 to 3.6	53, 70, 140	1.3, 0.65, 0.275	2.5, 1.3, 0.66	120, 40, 10	-	TSSOP-20

Motion sensors (MEMS)

Accelerometers

Part number	Description	Full scale (g)	V _{dd} (V)	I _{dd} (mA)	I _{dd} power down (µA)	Output data rate (Hz)	Package (mm ³)
LIS302DL	3-axis smart digital output piccolo accelerometer	+/-2 +/-8	2.5	0.3	1	400	LGA14 3x5x0.9
LIS3LV02DL	3-axis high-performance digital output linear accelerometer	+/-2 +/-6	2.5	0.6	1	2560	LGA16 4.4x7.5x1

Gyroscopes

Part number	Description	Full scale (°/sec)	V _{dd} (V)	I _{dd} (mA)	I _{dd} power down (µA)	Bandwidth (Hz)	Package (mm ³)
LISY300AL	Single-axis analog output yaw rate gyroscope	300	3.3	4.8	1	88	LGA 28 7x7x1.5

For a complete list of evaluation boards for set-top box applications please refer to www.st.com/evalboards



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