

STM, TS, SR, STBP, STWD

Технические характеристики

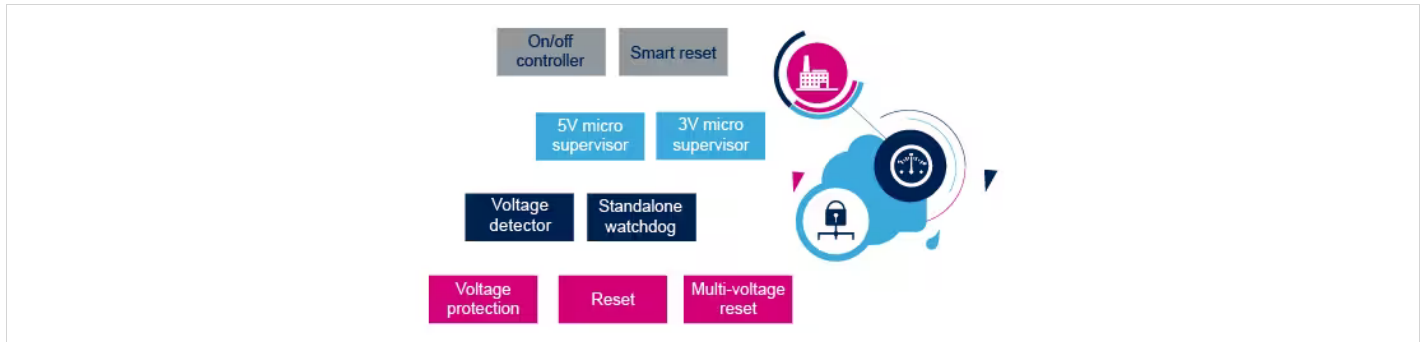
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Reset and Supervisor ICs

Overview

ST's portfolio of microprocessor supervisors and reset ICs are designed to keep your application processor under control and your application running. Our product portfolio ranges from basic, single-voltage resets, to smarter resets with a watchdog or early power-fail detection function. We also offer highly integrated devices that include reset, battery switchover and tamper-detect functions.



Microprocessor Supervisors

Overview

ST's microprocessor supervisors are more sophisticated devices that can include watchdog and early power-fail warnings (power-fail in/power-fail out (PFI/PFO)), push-button reset functions and battery monitoring.

Microprocessor supervisors with a switchover function preserve SRAM data in the absence of system power by automatically switching to battery backup when power fails. A chip-enable gate automatically write-protects the SRAM when the Vcc begins to fall.

Reset and Supervisor ICs/Microprocessor Supervisors

Part Number	General Description	Package	RST Threshold (V) typ	Manual Reset Input	Power Fail Comparator
M40SZ100W	3 V NVRAM supervisor for LPSRAM	SO-16	2.6	true	true
STM6321	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	false	-
STM6322	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	true	-
STM6821	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	true	-
STM6822	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2,2.3,2.63,2.93,3.08,4.39,4.63	true	-
STM6823	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	true	-
STM6824	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	-	-
STM6825	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	2.63,2.93,3.08,4.39,4.63	true	-
STM690A	5 V supervisor with battery switchover	SO-8	4.65	false	true
STM690T/S/R	5 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	false	true
STM692A	5 V supervisor with battery switchover	SO-8	4.4	false	true
STM703	5 V supervisor with battery switchover	SO-8	4.65	true	true
STM704	5 V supervisor with battery switchover	SO-8	4.65	true	true
STM704T/S/R	3 V supervisor with battery switchover	MiniSO-8,SO-8	2.925,2.93,3.08	true	true
STM705	5V Supervisor	SO-8	4.65	true	true
STM706	5 V Supervisor	MiniSO-8,SO-8	4.4	true	true
STM706P	3 V Supervisor	SO-8	2.63	true	true
STM706T/S/R	3 V Supervisor	SO-8	2.63,2.93,3.08	true	true
STM707	5V Supervisor	SO-8	4.65	true	true
STM708	5 V Supervisor	SO-8	4.4	true	true
STM708T/S/R	3 V Supervisor	MiniSO-8,SO-8	2.63,2.93,3.08	true	true
STM795T/S/R	3 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	true	false
STM802L/M	5 V supervisor with battery switchover	SO-8	4.4,4.65	false	true
STM802T/S/R	3 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	false	true
STM804T/S/R	3 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	true	true
STM805L	5 V supervisor with battery switchover	SO-8	4.65	false	true
STM805T/S/R	3 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	false	true
STM806T/S/R	3 V supervisor with battery switchover	SO-8	2.63,2.93,3.08	true	true
STM813L	5 V supervisor	SO-8	4.65	true	true

STM817L/M	5 V supervisor with battery switchover	SO-8	4.4,4.65	false	true
STM818L/M	5 V supervisor with battery switchover	SO-8	4.4,4.65	false	false
STM819L/M	5 V supervisor with battery switchover	SO-8	4.4,4.65	true	true
TSM102	Dual Op-Amp + Dual Comparator + VRef (Bipolar), Adjustable	SO-16	-	-	-
TSM104W	Quad Operational Amplifier and Voltage Reference	SO-16	-	-	-

On-Off Controllers

Overview

The STM6600 and STM6601 smart push-button on/off controller chips offer protection for battery-operated devices in many ways. These include minimizing the risk of powering up without sufficient battery energy to complete the sequence, which can damage the system. It can also prevent power-up if it detects a fault in the power supply.

The STM660x ICs also implement Smart Reset capabilities to help users recover products that have crashed or frozen during normal operation. Smart Reset requires both push-buttons to be held down for a minimum period, controlled by an external capacitor, before a reset occurs. This two-action reset eliminates the need to hide the reset button behind a hole in the outer casing to prevent accidental use, thereby lowering engineering costs and allowing the casing to be sealed if required.

The protection features integrated in the STM660x devices replace as many as 30 or 40 discrete components or a CPLD (complex programmable logic device) with a separate voltage regulator, clock and a voltage detector to determine the battery condition. Alternatively a microcontroller with dedicated housekeeping features could be used but, this too, requires an external crystal, a voltage detector and must also be programmed.

The STM660x's 2 x 3 mm footprint occupies less than half the PCB space of any alternative approach. It also has a low active power consumption of 6 μA and a zero-power shutdown mode consuming less than 1 μA .

Reset and Supervisor ICs/On-Off Controllers

Part Number	General Description	Package	Supply Voltage (V) min	Supply Voltage (V) max	Threshold Voltage (V) typ	Supply Current (mA) typ	Operating Temperature (°C) min	Operating Temperature (°C) max	Blanking time (S) min	I/O response
SRC0	Smart push-button on/off controller with Smart Reset and power-on lockout	DFN12 2X3X0.75	1.6	5.5	3.4	0.006	-40	85	1.4,11.2	EN output is active high, long push asserts /RST,EN output is active high, long push deasserts EN
STM6600	Smart push-button on/off controller with Smart Reset and power-on lockout	DFN12 2X3X0.75	1.6	5.5	2.5,3.3,3.4,3.5	0.006	-40	85	11.2,5.6	/EN output is active low, long push asserts /RST,/EN output is active low, long push deasserts /EN,EN output is active high, long push asserts /RST,EN output is active high, long push deasserts EN
STM6601	Smart push-button on/off controller with Smart Reset and power-on lockout	DFN12 2X3X0.75	1.6	5.5	2.5,3.1,3.3,3.4,3.5	0.006	-40	85	1.4,5.6	/EN output is active low, long push asserts /RST,/EN output is active low, long push deasserts /EN,EN output is active high, long push asserts /RST,EN output is active high, long push deasserts EN
STM6620S	Smart push-button on/off controller	VFQFPN 10 1.8X1.4X0.5 PULLIN PIT	2.2	5.5	-	0.01	-	-	-	-

Resets and Voltage Detectors

Overview

ST's reset and voltage detector ICs provide basic voltage monitoring (low-voltage detect POR-LVD function) and reset timing for power-on resets. These devices offer:

- Cost-sensitive, reliable solutions to monitor voltage and controlled resets
- Some devices feature an additional input which can be used for push-button resets
- Some devices can monitor up to 5 power supply voltages simultaneously

Reset and Supervisor ICs/Resets and Voltage Detectors

Part Number	General Description	Package	Number of Monitored Voltages nom	Manual Reset Input	Voltage Reset 1 (V) typ	Voltage Reset 2 (V) typ	Active Output Level	RESET Output	Reset pulse width min	Reset pulse width max	RSTin Inputs	Power-on Timer typ	Operating Temperature (°C) min	Operating Temperature (°C) max
STM1001	Reset circuit	SOT23	1	false	2.63,2.93,3.08,4.38,4.63	-	Active Low	Open-Drain Active Low	140,20	280,40	-	-	-40	85
STM1061	Low Power Voltage Detector	SOT23,SOT323	1	false	1.6,1.7,1.9,2.1,2.2,2.3,2.5,2.6,2.7,2.8,2.9,3,3.1,3.4,3.6,3.8	-	-	Open-Drain Active Low	0	0	-	-	-40	85
STM1810	Low power reset circuit	SOT23	1	false	4.37,4.62	-	Active Low	Push-Pull Active Low	100	200	-	-	-40	105
STM1811	Low power reset circuit	SOT23	1	false	4.37,4.62	-	Active Low	Open-Drain Active Low	100	200	-	-	-40	105
STM1812	Low power reset circuit	SOT23	1	false	4.37,4.62	-	Active High	Push-Pull Active High	100	200	-	-	-40	105
STM1813	Low power reset circuit	SOT23	1	true	4.37,4.62	-	Active Low	Bi-directional	100	200	-	-	-40	105
STM1815	Low power reset circuit	SOT23	1	false	2.55,2.88,3.06	-	Active Low	Push-Pull Active Low	100	200	-	-	-40	105
STM1816	Low power reset circuit	SOT23	1	false	2.55,2.88,3.06	-	Active Low	Open-Drain Active Low	100	200	-	-	-40	105
STM1817	Low power reset circuit	SOT23	1	false	2.55,2.88,3.06	-	Active High	Push-Pull Active High	100	200	-	-	-40	105
STM1818	Low power reset circuit	SOT23	1	true	2.55,2.88,3.06	-	Active Low	Bi-directional	100	200	-	-	-40	105
STM1831	Voltage detector with sense input and external delay capacitor	SOT23-5L	1	false	2.4	-	-	Open-Drain Active Low	-	-	-	-	-40	85
STM6315	Open drain microprocessor reset	SOT-143 4	1	true	2.63,2.93,4.38,4.63	-	Active Low	Open-Drain	1,1120,140,20	2,2240,280,40	-	-	-40	125
STM6710	Low-voltage, high-accuracy, triple/quad voltage microprocessor supervisory circuit in SOT package	SOT23-6L	4	false	-	-	Active Low	Open-Drain	-	-	-	-	-40	105,85
STM6717	Dual/Triple Ultra-Low Voltage Supervisors with Push-Button Reset	SOT23-5L	2	true	2.925,3.075	0.788,0.875,1.05,1.11,1.575,1.665,2.188,2.313	Active Low	Open-Drain	140,600	1200,280	-	-	-40	85
STM6718	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-5L	2	true	2.925,3.075	1.05,1.11,1.575,1.665,2.188,2.313	Active Low	Push-Pull Active Low	140	280	-	-	-40	85
STM6719	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	3	true	2.925,3.075	1.05,1.105,1.11,1.313,1.575,1.665,2.188,2.313	Active Low	Open-Drain	140,8.8	17.6,280	true	-	-40	85
STM6720	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	3	true	2.925,3.075	1.05,1.1,1.575,1.665,2.188,2.313	Active Low	Push-Pull Active Low	140	280	true	-	-40	85
STM6777	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	2	true	2.925,3.075	1.05,1.11,1.575,1.665,2.188,2.313	Active Low	Open-Drain	140	280	-	-	-40	85
STM6778	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	2	true	2.925,3.075	1.05,1.11,1.575,1.665,2.188,2.313	Active Low	Push-Pull Active Low	140	280	-	-	-40	85
STM6779	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	2	true	1.575,2.188,2.925,3.075,4.625	-	Active Low	Open-Drain	140	280	true	-	-40	85
STM6780	Dual/triple ultra-low voltage supervisors with push-button reset (with delay option)	SOT23-6L	2	true	1.575,2.188,2.925,3.075,4.625	-	Active Low	Push-Pull Active Low	140	280	true	-	-40	85
STM6904	Quad, ultralow voltage supervisor with push-button reset	MiniSO-8	4	true	2.866,2.955,3.078	1.05,1.11,1.683,2.188,2.333	Active Low	Open-Drain	140	280	-	-	-40	85
STM6905	Quintuple, ultralow voltage supervisor with push-button reset	MiniSO-8	5	true	2.886,2.955,3.078	1.05,1.11,1.683,2.188,2.333	Active Low	Open-Drain	140	280	-	-	-40	85

STM809	Reset circuit	SOT23	1	-	2.63,2.93,3.08, 4.38,4.63	-	Active Low	Push-Pull Active Low	140	280	-	-	-40	85
STM810	Reset circuit	SOT23	1	-	2.63,2.93,3.08, 4.38,4.63	-	Active High	Push-Pull Active High	140	280	-	-	-40	85
STM811	Reset circuit	SOT-143 4	1	true	2.63,2.93,3.08, 4.38,4.63	-	Active Low	Push-Pull Active Low	140	280	-	-	-40	85
STM812	Reset circuit	SOT-143 4	1	true	2.63,2.93,3.08, 4.38,4.63	-	Active High	Push-Pull Active High	140	280	-	-	-40	85
TS831	Micropower voltage supervisor with reset active low	SO-8,TO-92,TSSOP-8L	-	false	-	-	Low	-	-	-	-	-	-40	125
TS834	Micropower voltage supervisor with reset active low or high and integrated timer	SO-8	-	false	-	-	Low and High	-	-	-	-	250	-40	85

Smart Reset ICs

Overview

ST's smart reset ICs extend the functional capacity of existing buttons so that users can reset their frozen device with a long push of one or two buttons simultaneously. These devices integrate several useful features, such as:

- No need for a specific reset button – an existing button or combination of buttons can be used
- Customizable input delay time from 5 to 10 second, that ensures that inadvertent, short activation of the button(s) do not cause a system reset
- Choice of a single button or two simultaneous buttons to signal a reset
- Support for applications where the battery is unremovable
- Very small packages (DFN and UDFN) for minimal impact on board size

Reset and Supervisor ICs/Smart Reset ICs

Part Number	General Description	Package	Number of Monitored Voltages nom	Number of Outputs	Pulse delay adjustment method	Reset setup delay (S) min	Reset setup delay (S) max	Pulse width adjustment method	Reset pulse width (mS) min	Reset pulse width (mS) max	Power on reset/Low voltage detector output	Other (Comments)	Operating Temperature (°C) min	Operating Temperature (°C) max
SR1	4 pin Smart Reset	UFDFPN 1X1.45X0.6 6L PITCH0.5	0	1	factory-trimming	1,2,3,2,4,8,6	1,8,4,8,7,2,9	factory-programmed	140,240	280,480	false	customer test mode	-40	85
SR2	6 pin Smart Reset	QFN-6L P 0.4 mm	0	2	factory-trimming	3,2,4,8,6,8	12,4,8,7,2,9	factory-programmed	240	480	false	customer test mode	-40	85
STM6503	Dual push-button smart reset with user-adjustable setup delays	DFN-8L P 0.5 mm	1	1	three-state	2	10	factory-programmed	140	480	true	-	-40	85
STM6505	Dual push-button Smart Reset with user-adjustable setup delays	DFN-8L P 0.5 mm	2	2	capacitor-adjustable	-	-	factory-programmed	240	480	true	-	-40	85
STM6510	Dual push-button Smart Reset with capacitor-adjustable delays	DFN-8L P 0.5 mm	1	1	capacitor-adjustable	1	15	capacitor-adjustable	10	2240	true	-	-40	85
STM6513	Dual push-button Smart Reset with dual reset outputs and user-selectable setup delay	DFN-8L P 0.5 mm	1	2	three-state	2	10	capacitor-adjustable	10	2240	true	1 push-pull output	-40	85
STM6519	Single-pin, push button Smart Reset	UFDFPN 1X1.45X0.6 6L PITCH0.5	0	1	factory-trimming	1,2,3,2,4,8,6,8	1,8,12,4,8,7,2,9	factory-programmed	240	480	false	customer test mode	-40	85
STM6520	Dual push-button Smart Reset with push-button controlled output delay	DFN-8L P 0.5 mm	0	2	dual-state	7.5	12.5	-	-	-	false	1 push-pull output	-30	85
STM6522	Dual push-button Smart Reset with capacitor-adjustable setup delay	DFN-8L P 0.5 mm	0	2	capacitor-adjustable	2	15	factory-programmed	140	280	false	-	-40	85
STM6524	6-pin Smart Reset	QFN-6L P 0.4 mm	0	2	factory-trimming	3,2,4,8,6,8	12,4,8,7,2,9	factory-programmed	240	480	false	customer test mode	-40	85

Voltage Protection ICs

Overview

ST's voltage protection devices prevent external overvoltage (or undervoltage) peaks from damaging circuitry. They are commonly implemented on the power charging path of portable devices to prevent USB or AC charger power failure. ST's devices offer the advantage of very precise voltage thresholds, so that the protection is activated accurately, and without fail.

Reset and Supervisor ICs/Voltage Protection Ics

Part Number	General Description	Package	Overtoltage protection	Undervoltage Protection	Thermal Shutdown	R _{DS(on)} (Ω) typ	Operating Current typ	Standby Current typ	ESD protection (kV) (Contact)	ESD protection (kV) (Air)	Fault indication output (Active Low)	Chip Enable (Active Low)
STBP120	Overtoltage protection device with thermal shutdown	TDFN10 2.5x2x0.75	true	true	true	0.09	170	96	8	15	true	true
STBP112	Overtoltage protection device	PowerFLAT 2x2	true	true	true	0.165	140	80	8	15	true	true

Watchdog Timers

Overview

ST offers watchdog timers as standalone devices (separate from the microprocessor) for applications requiring a high security level.

These devices are a robust, reliable means of monitoring software code execution, or hardware failures, and can trigger appropriate action, such as system reboot, high-level interrupt generation and others.

Available in compact SOT23 and SC70 packages, watchdog timers can be added to space-conscious applications with minimal impact.



Reset and Supervisor ICs/Watchdog Timers

Part Number	General Description	Package	Watchdog timeout period (mS) typ	Chip Enable	Output Type	Active Output Level
STM6321	5-pin supervisor with watchdog timer and push-button reset	SOT23-5L	-	-	-	Active High, Active Low
STM706	5 V Supervisor	MiniSO-8,SO-8	-	-	-	Active Low
STM802T/S/R	3 V supervisor with battery switchover	SO-8	-	-	-	Active Low
STM804T/S/R	3 V supervisor with battery switchover	SO-8	-	-	-	Active High
STM805T/S/R	3 V supervisor with battery switchover	SO-8	-	-	-	Active High
STWD100	Watchdog timer circuit	SOT23-5L,SOT323-5L	102,1600,3.4,6.3	true	Open Drain,Push-Pull	Active Low

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Вологда (8172)26-41-59	Москва (495)268-04-70	Саратов (845)249-38-78	Челябинск (351)202-03-61
Воронеж (473)204-51-73	Мурманск (8152)59-64-93	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
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