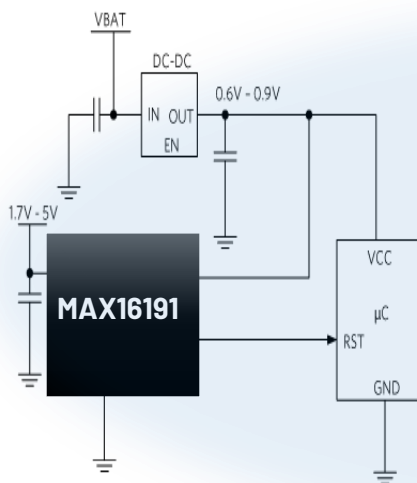


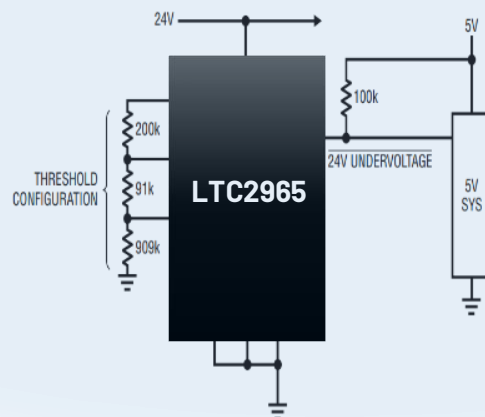
Voltage Monitors and Supervisors Product Highlights

Voltage supervisors monitor the supply voltages of a microprocessor-based system to ensure that the system starts up properly every time, that system errors are detected and minimized, and that the system returns safely from an error with little or no user intervention. Voltage monitors continuously check the power-supply output voltages and currents for over and under threshold levels. If a fault is detected, the supervisory IC automatically shuts down the system in an orderly fashion.

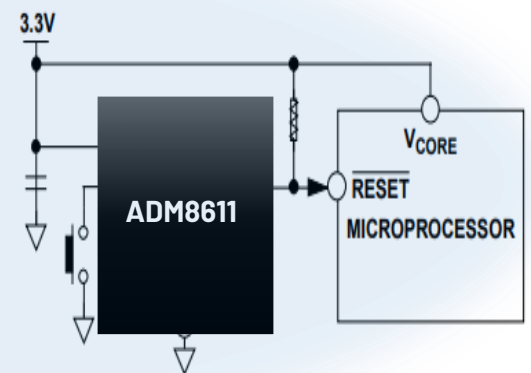
This document highlights notable supervisors with a technology focus on high accuracy, high voltage, and nanoPower.



High Accuracy



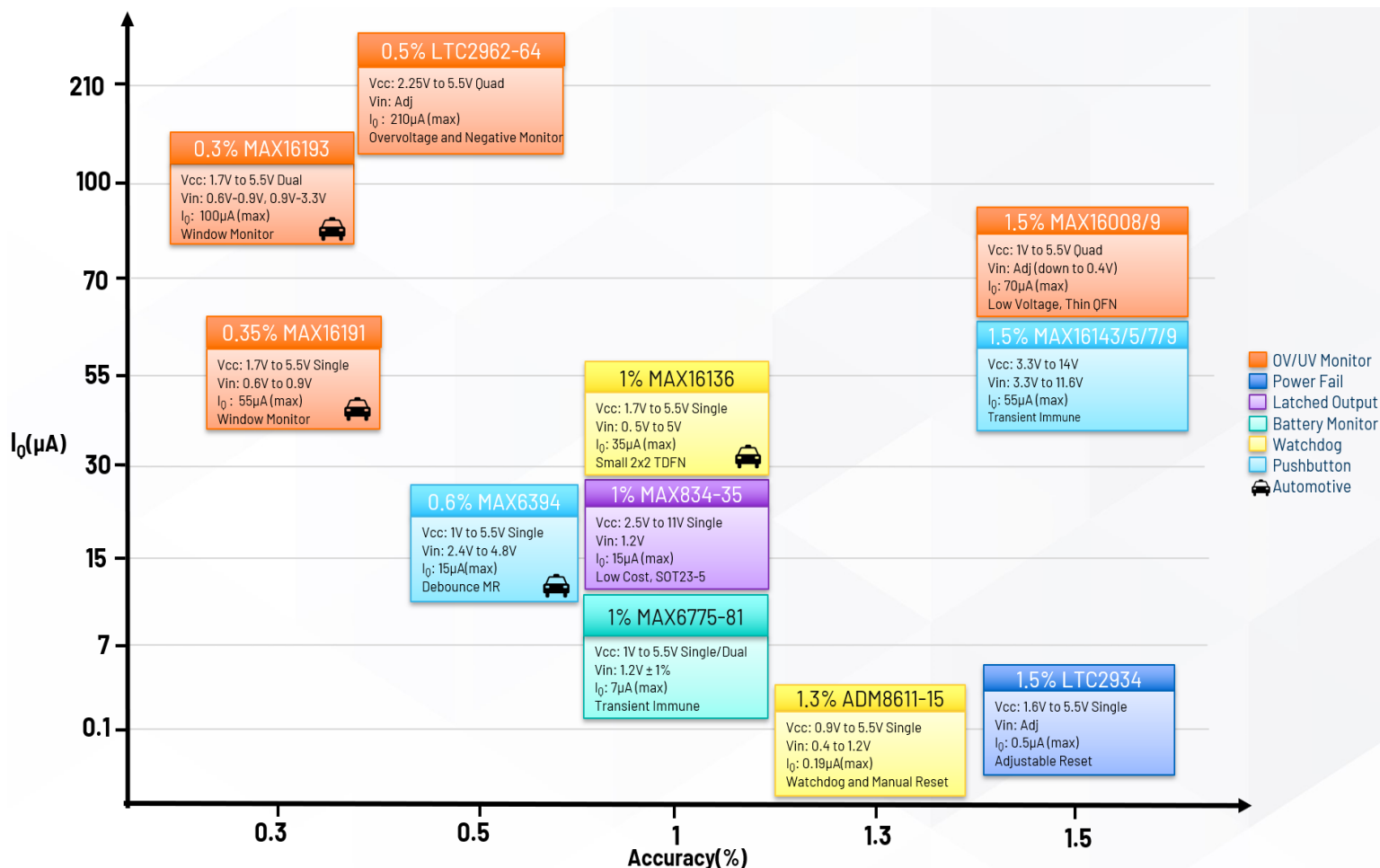
High Voltage



NanoPower

High Accuracy Voltage Supervisors

Analog Devices offers a wide range of ultrahigh precision voltage supervisors for increased system voltage margin and enhanced reliability.



As the industry moves toward low-voltage microprocessors, ASICs, DSPs, and FPGAs, the operating voltage ranges of power supplies narrows. This increases the demand for high-accuracy power supply and voltage supervisors such as the [MAX16191](#) and [MAX16193](#), which are ultrahigh-accuracy, single and multichannel window voltage supervisors with factory-programmed undervoltage and overvoltage thresholds.

ADI offers a wide range of supervisors with high accuracy, ranging from 1.5% to as high as 0.3% accuracy. The product highlights for this technology focus are shown in the above table, which includes multiple features to choose from, such as OV/UV monitors, power fail options, watchdogs, pushbuttons, and more.

The following pages gives the full range of high accuracy supervisors that ADI offers.

High Accuracy Voltage Supervisors

Part Number	# Monitor Voltage	Reset Threshold Accuracy	Supply Current (μ A)	Reset Pulse Width (min)	Watchdog Timer	Power fail Warning	Manual Reset	Window Monitor	Latched Output	Glitch Immune	High Voltage (>6V)	Negative Monitor	Programmable	Automotive	Max Temp	Functional Safety	Package
MAX16193	2	0.3	50	Adj				•						•	125		8-Pin TDFN, 8-Pin SOT23
MAX16191	1	0.35	30	Adj				•							125		8-Pin TDFN
LTC2962	4	0.5	140	Adj				•				•			125		16-Pin QFN
LTC2963	4	0.5	140	Adj				•				•			125		20-Pin QFN
LTC2964	4	0.5	140	Adj				•				•			125		20-Pin QFN
MAX6394	1	0.6	5	<1ms			•			•					125		3-Pin SOT23, 6-Pin WLP
LTC1326	3	0.75	20	200ms			•			•					85		8-Pin SO, MSOP
LTC1326-2.5	3	0.75	20	200ms			•			•					85		8-Pin SO, MSOP
LTC1536	3	0.75	100	200ms			•			•			•		85		8-Pin MSOP
LTC2937	6	0.75	1000	Adj				•			•		•		125		28-Pin QFN
ADM1184	4	0.8	24	Adj	•										85		10-Pin MSOP
ADM12914	4	0.8	62	Adj				•		•		•			125		16-Pin QSOP
MAX16160	4	1	17	Adj											125		6-Pin SOT23
LTC2933	6	1	700	Adj		•		•			•		•		85		16-Pin DFN
LTC2936	6	1	700	Adj		•		•			•		•		85		24-Pin QFN
MAX16062	8	1	45	Adj	•		•								125		24-Pin TQFN
MAX16063	4	1	50	Adj			•	•							125		8-Pin QFN
MAX16132	1	1	15	20us				•		•				•	125		8-Pin PDIP, SOIC, MSOP
MAX16133	2	1	15	20us				•		•				•	125		16-Pin PDIP, SOIC
MAX16134	3	1	15	<1ms				•		•				•	125		6-Pin SOT23, 16-Pin TQFN
MAX16135	4	1	15	20us				•		•				•	125		16-Pin SOIC
MAX16136	1	1	15	Adj	•			•	•					•	125	ASIL-D*	10-Pin TDFN, 16-Pin TQFN
MAX16137	1	1	12	Adj	•			•	•					•	125	ASIL-D*	8-Pin TDFN

*Enables Functional Safety Compliance at System Level

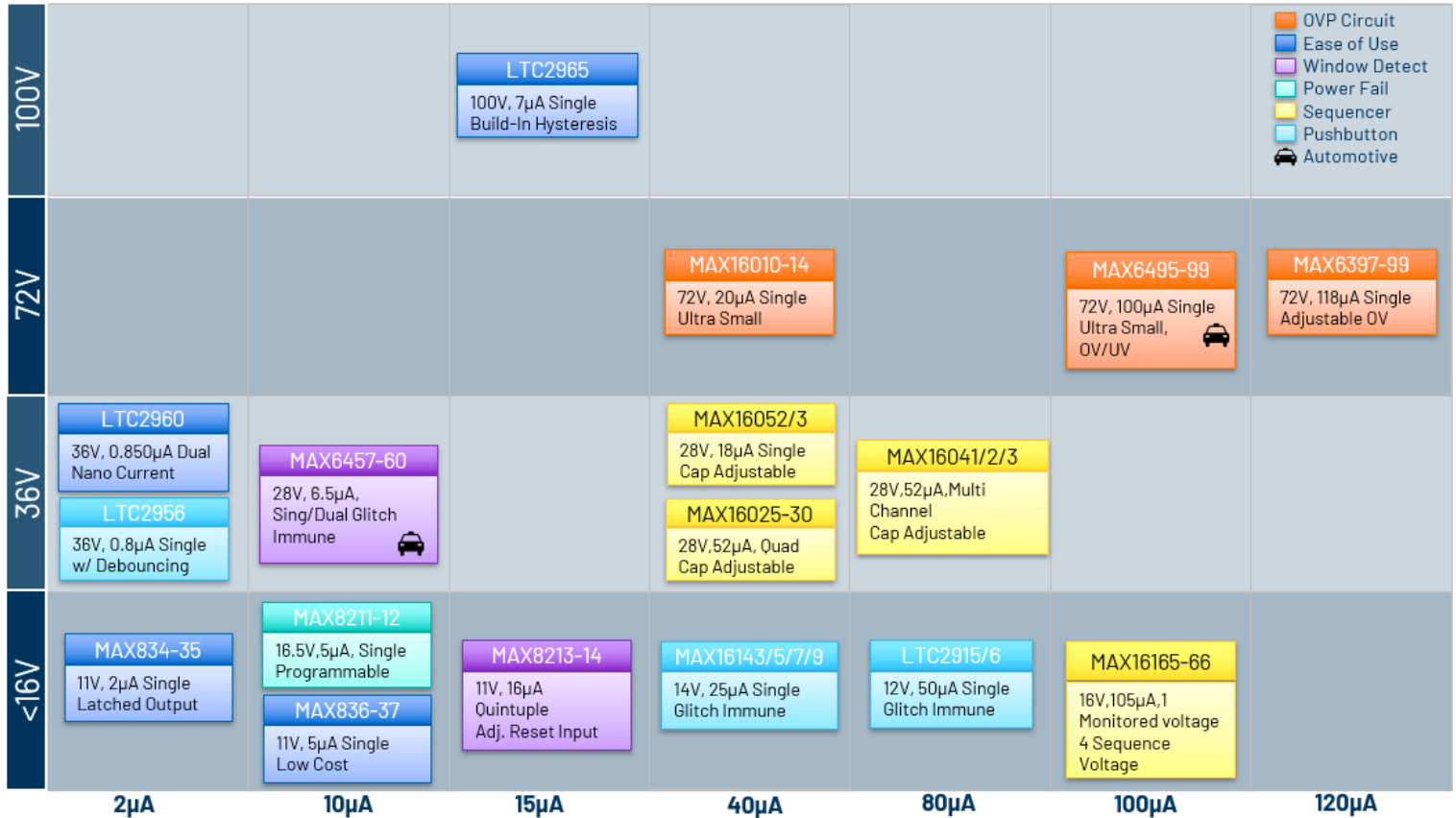
High Accuracy Voltage Supervisors

Part Number	# Monitor Voltage	Reset Threshold Accuracy	Supply Current (µA)	Reset Pulse Width (min)	Watchdog Timer	Power fail Warning	Manual Reset	Window Monitor	Latched Output	Glitch Immune	High Voltage (>6V)	Negative Monitor	Programmable	Automotive	Max Temp	Functional Safety	Package
MAX16138	1	1	12	Adj	•			•	•					•	125	ASIL-D*	8-Pin TDFN
MAX20478	2,3	1	125	Adj	•			•						•	125	ASIL-D	10-Pin TDFN
MAX20480	7	1	150	Adj	•			•					•	•	125	ASIL-D	16-Pin TQFN
MAX20481	7	1	150	Adj	•			•					•	•	125	ASIL-B	16-Pin TQFN
MAX16147	1	1	25	<1ms	•		•			•	•				125		8-Pin SOIC
MAX6775	1	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6776	1	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6777	1	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6778	1	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6779	2	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6780	2	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX6781	2	1	4	<1ms		•				•					85		5-Pin SC70, 6-Pin µDFN
MAX814	1	1	75	Adj		•	•	•		•					70		6-Pin SO and DIP
MAX815	1	1	75	Adj	•	•	•			•					70		8-Pin SO and DIP
MAX816	1	1	75	Adj		•	•			•					70		5-Pin SO and DIP
MAX8213	5	1	33	Adj				•		•	•				70		16-Pin DIP, 16-Pin SOIC
MAX8214	5	1	33	Adj				•		•	•				70		16-Pin DIP, SOIC, CDIP
MAX834	1	1	2.4	Adj	•				•		•				70		10-Pin MSOP/DFN
MAX835	1	1	2.4	Adj	•				•		•				70		8-Pin PDIP, SOIC, MSOP

*Enables Functional Safety Compliance at System Level

High Voltage Supervisors

Analog Devices offers a robust solution to ensure protection within a wide voltage range.



High voltage battery applications due to electrification as well as industrial automation are driving the need for high voltage supervisors. In these applications, supervisors should be able to accept a wide voltage range and be able to accurately monitor a high voltage supply. The above diagram provides the highlighted products suitable for these high voltage applications. It includes a range of products from supervisors to sequencers and overvoltage protection circuits.

ADI's [LTC2965](#) and [LTC2966](#) are the only voltage monitors in the market that can directly connect to high voltage supplies, greater than 60V, while maintaining a high 1.4% monitoring accuracy across all conditions, so promote their accuracy, flexibility, and integration of large resistive dividers. The LTC2965/66 consume very little current given their high voltage capabilities. The adjustable threshold, hysteresis and output polarity makes these parts extremely flexible, allowing customers to avoid factory-trimmed parts and copy-and-paste designs using our parts.

The following pages list the full range of high voltage supervisors that ADI offers.

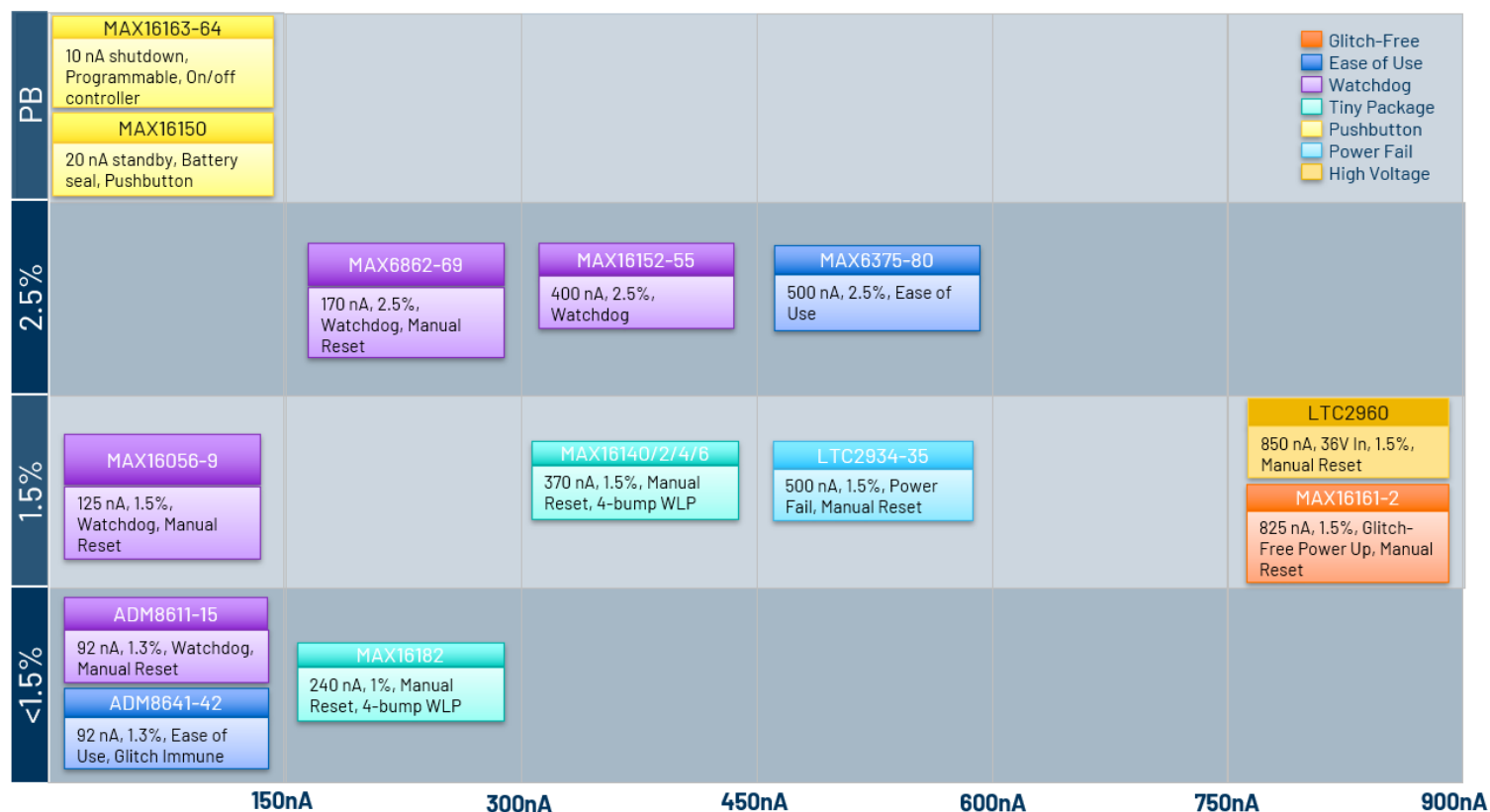
High Voltage Supervisors

Part Number	# Monitor Voltage	Accuracy (%)	Max Operating Voltage	Max Supply Current (µA)	Max Input Voltage	Reset Pulse Width (min)	Reset Output Configuration *	Power fail Warning	Manual Reset	Window Monitor	Latched Output	Automotive	Max Temp	Package
LTC2965	1	1.4	100	15	98	Adj	Active Pull-Up						125	16-Pin MS, 8-Pin DFN
LTC2966	2	1.4	100	15	98	Adj	Active Pull-Up						125	16-Pin MS, 8-Pin DFN
LTC2960-1	2	1.5	36	1.25	0.406	15 ms, 200 ms	36V OD		•				125	TSOT-23, 8-DFN
LTC2960-2	2	1.5	36	1.25	0.406	15 ms, 200 ms	36V OD		•				125	TSOT-23, 8-DFN
LTC2960-3	2	1.5	36	1.25	0.406	200 ms	Active Pull-Up		•				125	TSOT-23, 8-DFN
LTC2960-4	2	1.5	36	1.25	0.406	200 ms	Active Pull-Up		•				125	TSOT-23, 8-DFN
MAX16165	5	0.8	16	170	0.504		OD						125	
MAX16166	5	0.8	16	170	0.504		PP						125	
MAX16041	2	2.7	28	75	3.135	Adj	PP AL		•				125	
MAX16042	3	2.7	28	75	3.135	Adj	PP AL		•				125	
MAX16043	4	2.7	28	75	3.135	Adj	PP AL		•				125	
MAX16025	2	2.7	28	75	3.135	Adj	OD AL		•				125	16-pin TQFN
MAX16026	2	2.7	28	75	3.135	Adj	PP AL		•				125	16-pin TQFN
MAX16027	3	2.7	28	75	3.135	Adj	OD AL		•				125	16-pin TQFN
MAX16028	3	2.7	28	75	3.135	Adj	PP AL		•				125	16-pin TQFN
MAX16029	4	2.7	28	75	3.135	Adj	OD AL		•				125	16-pin TQFN
MAX16030	4	2.7	28	75	3.135	Adj	PP AL		•				125	16-pin TQFN
MAX16052	1	1.8	28	61	0.509	Adj	OD AH						125	6-pin SOT23
MAX16053	1	1.8	28	71	0.509	Adj	PP AH						125	6-pin SOT23
MAX6457	1	2.2	28	12.5	1.255	50 µs, 150 ms	OD AL				•		125	5-pin SOT23
MAX6458	1	2.2	28	12.5	1.255	50 µs, 150 ms	OD AL			•			125	5-pin SOT23
MAX6459	2	2.2	28	12.5	1.255	50 µs	OD AL			•		•	125	6-pin SOT23
MAX6460	1	2.2	28	12.5	1.255	50 µs	OD AL						125	6-pin SOT23
MAX8211	1		16.5	15	1.25		OD AL	•		•			125	8-PDIP, 8-SO, 8-µMAX, 8 TO-99
MAX8212	1		16.5	15	1.25		OD AL	•		•			125	8-PDIP, 8-SO, 8-µMAX, 8 TO-99
MAX16143	1	1.5	14	55	11.716	> 3.15s	OD AL						125	SOT23-5, 4-Bump WLP
MAX16145	1	1.5	14	55	11.716	> 3.15s	OD AH						125	SOT23-5, 4-Bump WLP
MAX16147	1	1.5	14	55	11.716	> 3.15s	PP AL		•				125	SOT23-5, 4-Bump WLP
MAX16149	1	1.5	14	55	11.716	> 3.15s	PP AH						125	SOT23-5, 4-Bump WLP
MAX834	1	1.25	11	15	1.231		OD				•		125	SOT23-5
MAX835	1	1.25	11	15	1.231		PP				•		125	SOT23-5
MAX836	1	1.25	11	15	1.231	Adj	OD						85	SOT143-4
MAX837	1	1.25	11	15	1.231	Adj	PP						85	SOT143-4

* OD = Open Drain, PP = Push-pull, AH = Active High, AL = Active Low

NanoPower Supervisors

Analog Devices offers a wide range of nanoPower supervisors for robust supply monitoring while enabling extension of battery life in power-constrained applications.



NanoPower supervisors are critical in applications where portability and power savings are of special consideration. These supervisors enable extended battery life while still providing robust monitoring and operation of the voltage supplies. These supervisors are also available in small form factors, enabling more space-savings in compact devices. Applications range from wearables and portable medical devices to home automation and IoT devices.

ADI's *ADM861x Family* has extremely low current consumption of 92nA typical and 190nA max, while achieving reset threshold accuracy of 1.3%. It is also available in a 6-WLCSP space-saving package. ADI also offers a wide range of parts with typical current consumption less than 1µA, as shown in the table above. This includes nanoPower pushbuttons that are useful in portable applications.

The following pages list the full range of nanoPower supervisors that ADI offers.

NanoPower Supervisors

Part Number	Voltage Supply	Reset Threshold Accuracy (%) Max	Supply Current (nA) Typ	Supply Current (nA) Max	Reset Pulse Width (min)	Watchdog Timer	Vin Monitoring	Manual Reset	Reset Output Configuration*	Reset Threshold Voltage	Max Temp	Features	Package
ADM8611	0.9 to 5.5V	1.3	92	190	200 ms			•	OD AL	2 to 4.63V	85		6-WLCSP
ADM8612	0.9 to 5.5V	1.3	92	190	200 ms		•	•	OD AL	0.5 to 1.9V	85		6-WLCSP
ADM8613	0.9 to 5.5V	1.3	92	190	200 ms	•			OD AL	2.32 to 4.63V	85	WD Disable	6-WLCSP
ADM8614	0.9 to 5.5V	1.3	92	190	200 ms	•			OD AL	2.32 to 4.63V	85	WD Disable, WD Select	6-WLCSP
ADM8615	0.9 to 5.5V	1.3	92	190	200 ms	•	•		OD AL	0.5 to 1.9V	85		6-WLCSP
ADM8641	0.9 to 5.5V	1.3	92	190					OD	2 to 4.63V	85		6-WLCSP
ADM8642	0.9 to 5.5V	1.3	92	190			•		OD	0.5 to 1.9V	85		6-WLCSP
MAX16056	1.1 to 5.5V	2.5	125	400	Adj	•		•	PP	1.575 to 4.625V	125	Adj WD Timeout, Adj Reset Timeout	8-TDFN
MAX16057	1.1 to 5.5V	2.5	125	400	Adj			•	PP	1.575 to 4.625V	125	Adj Reset Timeout	6-TDFN
MAX16058	1.1 to 5.5V	2.5	125	400	Adj	•		•	OD	1.575 to 4.625V	125	Adj WD Timeout, Adj Reset Timeout	8-TDFN
MAX16059	1.1 to 5.5V	2.5	125	400	Adj			•	OD	1.575 to 4.625V	125	Adj Reset Timeout	6-TDFN
MAX6854	1.1 to 5.5V	2.5	170	370	10 ms			•	PP AL	1.575 to 4.625V	85		SOT23-5
MAX6855	1.1 to 5.5V	2.5	170	370	10 ms			•	PP AH	1.575 to 4.625V	85		SOT23-5
MAX6856	1.1 to 5.5V	2.5	170	370	10 ms			•	OD AL	1.575 to 4.625V	85		SOT23-5
MAX6858	1.1 to 5.5V	2.5	170	370	<150 ms				PP AL	1.575 to 4.625V	85		SOT23-5
MAX6860	1.1 to 5.5V	2.5	170	370	<150 ms				OD AL	1.575 to 4.625V	85		SOT23-5
MAX6861	1.1 to 5.5V	2.5	170	370	<150 ms			•	PP AL	1.575 to 4.625V	85	Reset Timeout Select	SOT23-5
MAX6862	1.1 to 5.5V	2.5	170	370	<150 ms			•	PP AH	1.575 to 4.625V	85	Reset Timeout Select	SOT23-5
MAX6863	1.1 to 5.5V	2.5	170	370	<150 ms			•	OD AL	1.575 to 4.625V	85	Reset Timeout Select	SOT23-5
MAX6864	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	PP AL	1.575 to 4.625V	85		SOT23-5
MAX6865	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	PP AH	1.575 to 4.625V	85		SOT23-5
MAX6866	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	OD AL	1.575 to 4.625V	85		SOT23-5
MAX6867	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	PP AL	1.575 to 4.625V	85		SOT23-5
MAX6868	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	PP AH	1.575 to 4.625V	85		SOT23-5
MAX6869	1.1 to 5.5V	2.5	170	370	<150 ms	•		•	OD AL	1.575 to 4.625V	85		SOT23-5

* OD = Open Drain, PP = Push-pull, AH = Active High, AL = Active Low

NanoPower Supervisors

Part Number	Voltage Supply	Reset Threshold Accuracy (%) Max	Supply Current (nA) Typ	Supply Current (nA) Max	Reset Pulse Width (min)	Watchdog Timer	Vin Monitoring	Manual Reset	Reset Output Configuration*	Reset Threshold Voltage	Max Temp	Features	Package
MAX16140	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	OD	1.7 to 4.85V	125	Edge/Level Triggered MR	4-WLP
MAX16142	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	PP	1.7 to 4.85V	125	Edge/Level Triggered MR	4-WLP
MAX16144	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	OD	1.7 to 4.85V	125	Edge/Level Triggered MR	SOT23-5
MAX16146	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	PP	1.7 to 4.85V	125	Edge/Level Triggered MR	SOT23-5
MAX16156	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	OD	1.7 to 4.85V	125	Edge/Level Triggered MR	4-WLP
MAX16157	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	OD	1.7 to 4.85V	125	Edge/Level Triggered MR	SOT23-5
MAX16158	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	PP	1.7 to 4.85V	125	Edge/Level Triggered MR	4-WLP
MAX16159	1.7 to 5.5V	1.5	370	1200	<1.5 s			•	PP	1.7 to 4.85V	125	Edge/Level Triggered MR	SOT23-5
MAX16152	1.2 to 5.5V	2.5	400	900	16 to 256 ms	•		•	OD	1.5 to 5V	125		6-WLP
MAX16153	1.2 to 5.5V	2.5	400	900	16 to 256 ms	•		•	OD	1.5 to 5V	125		SOT23-6
MAX16154	1.2 to 5.5V	2.5	400	900	0.1 to 256 ms	•			OD	1.5 to 5V	125	WD Enable	6-WLP
MAX16155	1.2 to 5.5V	2.5	400	900	0.1 to 256 ms	•			OD	1.5 to 5V	125	WD Enable	SOT23-6
MAX6375	1 to 5.5V	2.5	500	1000					PP AL	2.2 to 3.08V	85		SOT23-3, SC70-3
MAX6376	1 to 5.5V	2.5	500	1000					PP AH	2.2 to 3.08V	85		SOT23-3, SC70-3
MAX6377	1 to 5.5V	2.5	500	1000					OD AL	2.2 to 3.08V	85		SOT23-3, SC70-3
MAX6378	1 to 5.5V	2.5	500	1000					PP AL	3.3 to 4.63V	85		SOT23-3, SC70-3
MAX6379	1 to 5.5V	2.5	500	1000					PP AH	3.3 to 4.63V	85		SOT23-3, SC70-3
MAX6380	1 to 5.5V	2.5	500	1000					OD AL	3.3 to 4.63V	85		SOT23-3, SC70-3
MAX6326	1 to 5.5V	2.5	500	1000	185 ms				PP AL	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX6327	1 to 5.5V	2.5	500	1000	185 ms				PP AH	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX6328	1 to 5.5V	2.5	500	1000	185 ms				OD AL	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX6346	1 to 5.5V	2.5	500	1000	185 ms				PP AL	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX6347	1 to 5.5V	2.5	500	1000	185 ms				PP AH	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX6348	1 to 5.5V	2.5	500	1000	185 ms				OD AL	2.2 to 4.63V	85		SOT23-3, SC70-3
MAX16161	1.7 to 5.5V	1.5	920	2400	<1.5 s			•	OD AL	1.7 to 4.85V	125	Glitch-free power up	4-WLP, SOT23-4
MAX16162	1.7 to 5.5V	1.5	825	2300	<1.5 s			•	OD AL	0.6 to 4.85V	125	Glitch-free power up	4-WLP, SOT23-4

* OD = Open Drain, PP = Push-pull, AH = Active High, AL = Active Low