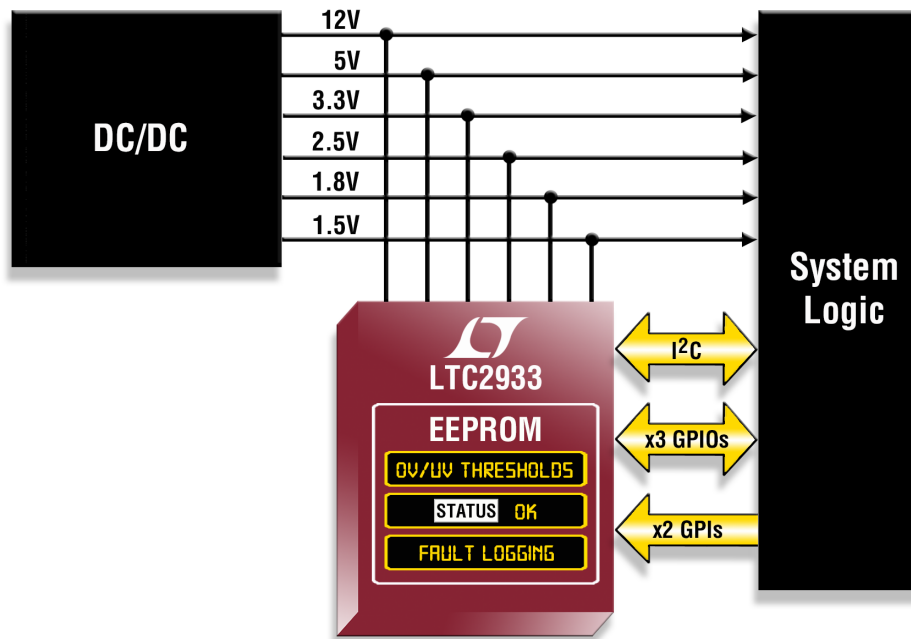


# Programmable Hex Voltage Supervisors



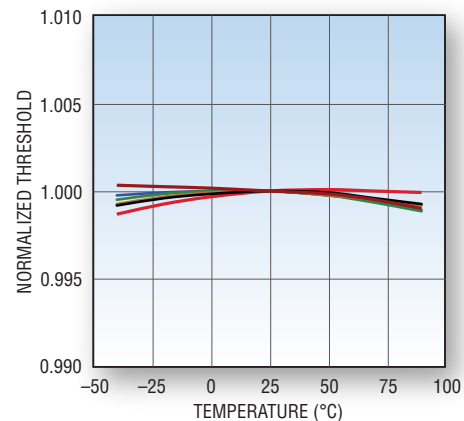
## EEPROM Stores User Configuration and Fault Log

The LTC<sup>®</sup>2933 and LTC2936 programmable voltage supervisors monitor six supply rails with EEPROM configurable voltage thresholds and two rails with resistor adjustable thresholds (via GPI). Independent overvoltage (OV) and undervoltage (UV) fault thresholds are available on each of the six EEPROM configurable inputs with  $\pm 1\%$  guaranteed accuracy over temperature. Two GPIs can be configured as manual reset, UV disable, margin enable, write protect (LTC2936 only) or auxiliary comparator inputs. Three GPIOs can be mapped to respond to any combination of power supply faults and GPI inputs, providing maximum design flexibility.

### Features

- Supervise 6 Power Supplies with  $\pm 1\%$  Guaranteed Accuracy Over Temperature
- I<sup>2</sup>C/SMBus Adjustable UV and OV Thresholds
- EEPROM for Storing Configuration and Fault History
- 256 Programmable Thresholds per Channel
- Supported by LTpowerPlay™ GUI
- Six Comparator Outputs (LTC2936)
- Two General Purpose Inputs
- Three General Purpose Inputs/Outputs
- Two Auxiliary Comparators to Monitor Two Voltages
- Programmable Output Type, Polarity and Delay

### OV/UV Threshold Accuracy vs Temperature



	Power Supply	Separate Supply Input	Threshold Range	Comparator Outputs	Response Time	I <sup>2</sup> C Addresses	Package
LTC2933	3.4V to 13.9V	No	0.2V to 13.9V	None	25 $\mu$ s	3	SSOP-16, 5mm x 4mm DFN-16
LTC2936	3.13V to 13.9V	Yes	0.2V to 5.8V	6	7.5 $\mu$ s	9	SSOP-24, 4mm x 5mm QFN-24



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Part #	# of Voltage Monitors (# of Adj Inputs)	Monitor Voltages (V)	Accuracy (%)	Reset Pulse Width	Supply Current (µA)	Watchdog Timer	Power Fail Warning	Manual Reset	OV Monitor	Negative Monitor	Comments	Temp Grades*	Package
LTC®2910	8 (8)	Adj	1.5	Adj	50				•	•	Resistor Programmable Thresholds, RST & RST Outputs, Shunt Regulator	C, I, H	SSOP-16, 5 × 3 DFN-16
LTC2933	6 (6)	Adj	1	Adj	700			•	•	•	µC Programmable, EEPROM, 256 Thresholds, One High Voltage Input, Two GPIOs, Three GPIOs, Two Auxilliary Comparators with Resistor Adjustable Thresholds	C, I	SSOP-16, 5 × 4 DFN-16
LTC2936	6 (6)	Adj	1	Adj	700			•	•	•	µC Programmable, EEPROM, 256 Thresholds, Six Comparator Outputs, Two GPIO, Three GPIO, Two Auxilliary Comparators with Resistor Adjustable Thresholds	C, I	SSOP-24, 4 × 5 QFN-24
LTC2939	6 (4)	5 to 1.2	1.5	Adj	80	Adj					16 Pin-Selectable Reset Threshold Combinations, Adj Reset and Watchdog Timers	C, I, H	MSOP-16
LTC2908	6 (5)	5, 3.3, 2.5, 1.8, 1.5	1.5	200ms	26						Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I	TSOT-8, 3 × 2 DFN-8
LTC2930	6 (4)	5 to 1.5	1.5	Adj	52			•			16 Pin-Selectable Reset Thresholds Combinations	C, I, H	3 × 3 DFN-12
LTC2931	6 (4)	5 to 1.5	1.5	Adj	52	Adj					16 Pin-Selectable Reset Thresholds Combinations, Separate Voltage Monitor Outputs	C, I, H	TSSOP-20
LTC2932	6 (4)	5 to 1.5	1.5	Adj	52						16 Pin-Selectable Reset Thresholds Combinations, Separate Voltage Monitor Outputs	C, I, H	TSSOP-20
LTC2900	4 (2)	5 to 1.5	1.5	Adj	43			•			16 Pin-Selectable Reset Threshold Combinations, Open Drain or Push-Pull Reset Output	C, I	MSOP-10, 3 × 3 DFN-10
LTC2938	4 (2)	5 to 1.2	1.5	Adj	80	Adj					16 Pin-Selectable Reset Thresholds	C, I, H	MSOP-16
LTC2901	4 (2)	5 to 1.5	1.5	Adj	43	Adj					16 Pin-Selectable Reset Thresholds, Separate Voltage Monitor Outputs, Open Drain or Push-Pull Reset Output	C, I	SSOP-16
LTC2902	4 (2)	5 to 1.5	1.5	Adj	43						16 Pin-Selectable Reset Thresholds, Separate Voltage Monitor Outputs, Open Drain or Push-Pull Reset Output	C, I	SSOP-16
LTC2903	4 (3)	5, 3.3, 2.5, 1.8, -5.2	1.5	200ms	20						Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I	TSOT-6
LTC2914	4 (4)	Adj	1.5		70			•	•		UV/OV Outputs, Optional Shunt Reg For High Voltage Operation	C, I, H	SSOP-16, 5 × 3 DFN-16
LTC2911	3 (2)	5, 3.3, 2.5, 1.8, 1.2	1.5	Adj	30		•				Margining Latch, Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I, H	3 × 2 DFN-8, TSOT-8
LTC1326	3 (1)	5, 3.3, 2.5	0.75	200ms	40			•			Reset and Soft Reset Outputs	C, I	MSOP-8, SO-8
LTC1536	3 (1)	5, 3.3	0.75	200ms	200			•			Reset and Soft Reset Outputs, Added Tests for PCI Conformity	C, I	MSOP-8, SO-8
LTC1726	3 (1)	5, 3.3, 2.5	1.5	Adj	20	Adj						C, I, H	MSOP-8, SO-8
LTC1727	3 (1)	5, 3.3, 3, 2.5	1.5	200ms	15						Separate Voltage Monitor Outputs	C, E, I	MSOP-8, SO-8
LTC1728	3 (1)	5, 3.3, 3, 2.5, 1.8	1.5	200ms	15							C, E, H	TSOT-5
LTC2919	3 (2)	5, 3.3, 2.5	1.5	Adj	50				•	•	Pin-Selectable Polarity for Negative and UV/OV Monitoring, Shunt Regulator, $V_{cc}$ Separate Voltage Monitor Outputs, Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I, H	MSOP-10, 3 × 2 DFN-10
LTC2909	3 (2)	5, 3.3, 2.5	1.5	Adj	50				•	•	Pin-Selectable Polarity for Negative and UV/OV Monitoring, Shunt Regulator, $V_{cc}$ Monitor, Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I	TSOT-8, 3 × 2 DFN-8
LTC2966	2 (2)	Adj	1.4		12		•	•			3.5V to 100V Operation, Resistor Programmable Thresholds, Internal High Value Resistive Dividers, Pin-Selectable Output Polarity	C, I, H	SO-10, 3 × 3 QFN-16
LTC2960	2(2)	Adj	1.5	15ms/200ms	0.85			•	•		2.5V to 36V Operation, Resistor Programmable Thresholds	C, I, H	TSOT-8, 2 × 2 DFN-8
LTC2913	2 (2)	Adj	1.5		44				•		Resistor Programmable Reset Thresholds, UV/OV Outputs, Shunt Regulator, Guaranteed Reset for $V_{cc} \geq 0.5V$	C, I, H	MSOP-10, 3 × 3 DFN-10
LTC1696	2 (2)	Adj	2		1.1mA				•		Resistor Programmable Reset Thresholds, Gate Drive for Crowbar	C, E	TSOT-6
LTC2904	2 (0)	5 to 1	1.5	200ms	65						9 Pin-Selectable Reset Thresholds	C, I	TSOT-8, 3 × 2 DFN-8
LTC2905	2 (0)	5 to 1	1.5	Adj	65						9 Pin-Selectable Reset Thresholds	C, I, H	TSOT-8, 3 × 2 DFN-8
LTC2906	2 (1)	5, 3.3, 2.5	1.5	200ms	50						Pin-Selectable and Resistor Programmable Reset Thresholds	C, I	TSOT-8, 3 × 2 DFN-8
LTC2907	2 (1)	5, 3.3, 2.5	1.5	Adj	54						Pin-Selectable and Resistor Programmable Reset Thresholds	C, I	TSOT-8, 3 × 2 DFN-8
LTC2934	2 (2)	Adj	1.5	15ms/200ms	0.5		•	•			Resistor Programmable Reset Threshold	C, I	TSOT-8, 2 × 2 DFN-8
LTC2965	1 (1)	Adj	1.4		6				•	•	3.5V to 100V Operation, Resistor Programmable Thresholds, Internal High Value Resistive Dividers, Pin-Selectable Output Polarity	C, I, H	MSOP-16, 3 × 3 DFN-8
LTC2935	1 (1)	1.6 to 3.5	1.5	200ms	0.5		•	•			8 Pin-Selectable Reset Thresholds	C, I	TSOT-8, 2 × 2 DFN-8
LTC2915	1 (1)	12 to 0.5	1.5	Adj	30						9 Pin-Selectable Reset Thresholds, 3 Tolerances	C, I, H	TSOT-8, 3 × 2 DFN-8
LTC2916	1 (1)	12 to 0.5	1.5	Adj	30			•			9 Pin-Selectable Reset Thresholds	C, I, H	TSOT-8, 3 × 2 DFN-8
LTC2917	1 (1)	12 to 0.5	1.5	Adj	30	Adj					9 Pin-Selectable Reset Thresholds, 3 Tolerances	C, I, H	MSOP-10, 3 × 2 DFN-10
LTC2918	1 (1)	12 to 0.5	1.5	Adj	30	Adj		•			9 Pin-Selectable Reset Thresholds	C, I, H	MSOP-10, 3 × 2 DFN-10
LTC2912	1 (1)	Adj	1.5	Adj	40				•		Resistor Programmable Reset Threshold, UV/OV Outputs, Shunt Regulator	C, I, H	TSOT-8, 3 × 2 DFN-8
LTC1232	1 (0)	5	2.5	600ms	500	•	•					C, I	DIP-8, SO-8
LTC1235	1 (0)	5	2	200ms	600	•	•	•			Conditional Battery Backup, RAM Protect	C	DIP-16, SO-16
LTC690	1 (0)	5	2	50ms	600	•	•				Battery Backup, 4.65V Reset	C, I	DIP-8, SO-8
LTC691	1 (0)	5	2	50ms	600	•	•				Battery Backup, RAM Protect, 4.65V Reset	C, I	DIP-16, SO-16
LTC694	1 (0)	5, 3.3	2	200ms	600	•	•				Battery Backup, 4.65V Reset	C, I	DIP-8, SO-8
LTC695	1 (0)	5, 3.3	2	200ms	600	•	•				Battery Backup, RAM Protect, 4.65V Reset	C, I	DIP-16, SO-16

\* C = 0°C to 70°C, E = -40°C to 85°C (Guaranteed by Design Only), I = -40°C to 85°C, H = -40°C to 125°C (100% Tested)