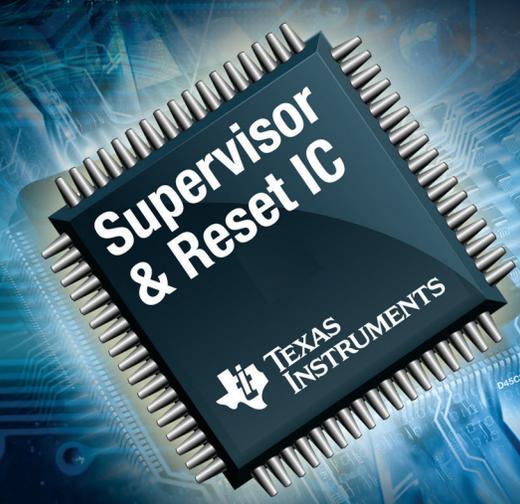
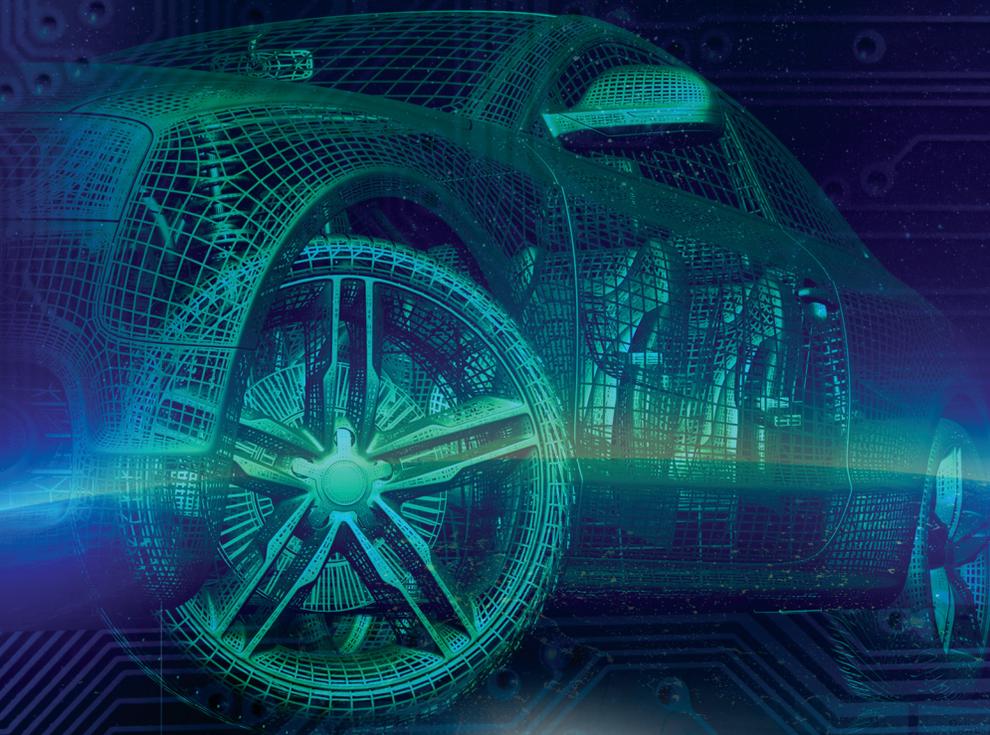


# Automotive Supervisor and Reset IC Selection Guide



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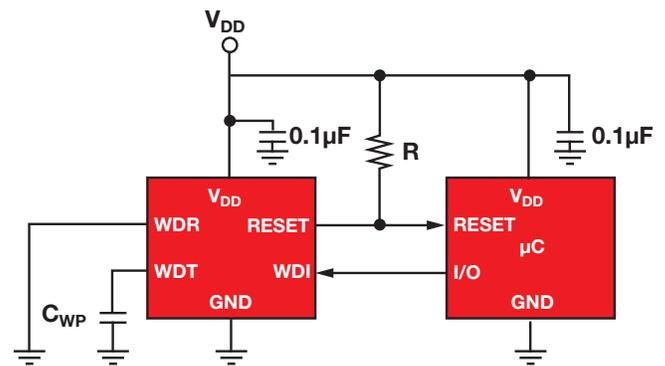
2016

# Supervisor and Reset ICs

## Introduction

Voltage supervisors, also known as reset ICs or voltage monitors, are used to monitor system health. These devices supervise voltage rails to address several system needs such as power concerns during system power on, fault conditions, or handshake with embedded processors. Our devices allow you to monitor up to four voltages with high accuracy, low power consumption, and a minimal footprint.

Supervisor and reset ICs can be found in many automotive applications such as ADAS (Advanced Driver Assist Systems) camera, radar, infotainment, sensor fusion and cluster.



## Automotive Qualified Devices

Device	Threshold Voltage (V)	Integrated W/D	Accuracy (%)	Iq (µA)	Active Reset (High/Low)	Reset Time-out (ms)	Temp Range	Package	Special Feature
TPS3700-Q1	Adj. (0.4 V min)	N	1	5.5	N/A	0	-40 to 125	SOT-23	Window Comparator
TPS3702-Q1	Adj. (0.4 V min)	N	0.9	7	N/A	0	-40 to 125	SOT-23	Window Comparator
TPS386000-Q1	Adj. (0.4 V min)	Y	0.25	12	Low	20, 300	-40 to 125	QFN	Quad Rail, Programmable Delay, Open-Drain
UCC2946-Q1	Adj. (1 V min)	Y	2	12	Low	200	-40 to 105	TSSOP	Watchdog Timer, Push-Pull
TPS3808G01-Q1	Adj. (0.4 V min)	N	1	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TPS3803-01-Q1	Adj. (0.4 V min)	N	1.5	3	Low	0.1	-40 to 125	SC-70	Push-Pull
TLC7701-Q1	Adj. (1 V min)	N	2	16	High Or Low	Programmable	-40 to 125	TSSOP	Push-Pull
TPS3808G12-Q1	1.12	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TPS3808G125-Q1	1.16	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TPS3803G15-Q1	1.4	N	1.5	3	Low	0.1	-40 to 125	SC-70	Open-Drain
TPS3808G15-Q1	1.4	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TPS3808G18-Q1	1.67	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open Drain
TPS3836E18-Q1	1.71	N	3	10	Low	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3837E18-Q1	1.71	N	3	10	High	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3838E18-Q1	1.71	N	3	10	High	10, 200	-40 to 125	SOT-23	Open-Drain
TPS3809J25-Q1	2.25	N	2	9	Low	200	-40 to 125	SOT-23	P2P compatible with MAX809, Push-Pull
TPS3823-25-Q1	2.25	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3836J25-Q1	2.25	N	2	10	Low	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3837J25-Q1	2.25	N	5	10	High	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3838J25-Q1	2.25	N	2	10	Low	10, 200	-40 to 125	SOT-23	Open-Drain
TPS3823-30-Q1	2.63	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3824-30-Q1	2.63	Y	2	15	High	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3809L30-Q1	2.64	N	2	9	Low	200	-40 to 125	SOT-23	P2P compatible with MAX809, Push-Pull
TPS3836L30-Q1	2.64	N	2	10	Low	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3837L30-Q1	2.64	N	2	10	High	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3838L30-Q1	2.64	N	2	10	Low	10, 200	-40 to 125	SOT-23	Open-Drain
TPS3808G30-Q1	2.79	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TPS3836H30-Q1	2.79	N	2	10	Low	10, 200	-40 to 125	SOT-23	Push-Pull

# Supervisor and Reset ICs

## Automotive Qualified Devices

Device	Threshold Voltage (V)	Integrated W/D	Accuracy (%)	Iq (µA)	Active Reset (High/Low)	Reset Time-out (ms)	Temp Range	Package	Special Feature
TLC7733-Q1	2.93	N	2	16	High Or Low	Programmable	-40 to 125	TSSOP	Push-Pull
TPS3306-15-Q1	2.93	Y	2	15	Low	100	-40 to 125	SOIC	Watchdog timer, Open-Drain
TPS3306-18-Q1	2.93	Y	2	15	Low	100	-40 to 125	SOIC	Watchdog timer, Open-Drain
TPS3306-20-Q1	2.93	Y	2	15	Low	100	-40 to 125	SOIC	Watchdog timer, Open-Drain
TPS3306-25-Q1	2.93	Y	2	15	Low	100	-40 to 125	SOIC	Watchdog timer, Open-Drain
TPS3307-18-Q1	2.93	N	2	40	Low	200	-40 to 125	SOIC	Push-Pull
TPS3809K33-Q1	2.93	N	2	9	Low	200	-40 to 125	SOT-23	P2P compatible with MAX809, Push-Pull
TPS3813K33-Q1	2.93	Y	2	9	Low	25	-40 to 125	SOT-23	Programmable Delay, Watchdog Window, Open-Drain
TPS3820-33-Q1	2.93	Y	2	15	Low	25	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3823-33-Q1	2.93	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3824-33-Q1	2.93	Y	2	15	High	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3825-33-Q1	2.93	N	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3828-33-Q1	2.93	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Open-Drain
TPS3836K33-Q1	2.93	N	5	10	Low	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3837K33-Q1	2.93	N	5	10	High	10, 200	-40 to 125	SOT-23	Push-Pull
TPS3838K33-Q1	2.93	N	5	10	Low	10, 200	-40 to 125	SOT-23	Open-Drain
TPS3805H33-Q1	3	N	1.5	3	Low	0.1	-40 to 125	SC-70	Push-Pull
TPS3808G33-Q1	3.07	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain
TLC7705-Q1	4.55	N	2	16	High Or Low	Programmable	-40 to 125	TSSOP	Push-Pull
TPS3306-33-Q1	4.55	Y	2	15	Low	100	-40 to 125	SOIC	Watchdog timer, Open-Drain
TPS3809I50-Q1	4.55	N	2	9	Low	200	-40 to 125	SOT-23	P2P compatible with MAX809, Push-Pull
TPS3813I50-Q1	4.55	Y	2	9	Low	25	-40 to 125	SOT-23	Watchdog timer, Open-Drain
TPS3820-50-Q1	4.55	Y	2	15	Low	25	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3823-50-Q1	4.55	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3824-50-Q1	4.55	Y	2	15	High	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3825-50-Q1	4.55	N	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Push-Pull
TPS3828-50-Q1	4.55	Y	2	15	Low	200	-40 to 125	SOT-23	Watchdog Timer, Open-Drain
TPS3808G50-Q1	4.65	N	0.5	2.4	Low	1.25 - 10,000	-40 to 125	SOT-23	Open-Drain

### Front End Power Supply Reference Design with Cold Crank Operation, Transient Protection, EMI Filter

Description	Features
This solution was designed to be a broadly applicable automotive off-battery front end power supply for 10-15W systems. There is a focus on EMI/EMC testing and compliance as well to help designers satisfy the regulatory requirements associated with producing an automotive electronic subsystem.	<ul style="list-style-type: none"> <li>• Wide-Vin front end power supply for 10-15W systems</li> <li>• Off-Battery operation with reverse battery protection</li> <li>• Designed and tested for severe cold-crank operation</li> <li>• Designed and tested to ISO 7637-2:2004 Pulse 1, 2a, 3a/b and 5b (clamped load dump)</li> <li>• Tested for CISPR25 Conducted and Radiated Emissions</li> <li>• Design includes the TPS3808G01-Q1 supervisor</li> </ul>
<b>Learn more at: <a href="http://www.ti.com/tool/TIDA-00699">www.ti.com/tool/TIDA-00699</a></b>	

### Automotive Power Reference Design for Low Power TDA3x Based Systems

Description	Features
This solution was designed to make an integrated, size-optimized power design for ADAS applications using the TDA3x SoC off of an automotive battery input. By targeting only applications with lower processing needs, we're able to choose devices and components which are smaller, compared to systems utilizing higher performance processors.	<ul style="list-style-type: none"> <li>• Complete TDA3x, DDRx, and CAN power solution</li> <li>• Highly-integrated, size-optimized design</li> <li>• Off-Battery operation</li> <li>• Full power up/down sequencing</li> <li>• Designed to meet ISO 7637-2:2004</li> <li>• Design includes the TPS3808G01-Q1 supervisor</li> </ul>
<b>Learn more at: <a href="http://www.ti.com/tool/TIDA-00530">www.ti.com/tool/TIDA-00530</a></b>	

### Optimized Automotive 1M Pixel Camera Module Design for Uncompressed Digital Video over Coax

Description	Features
The TIDA-00262 Reference Design is a high speed serial video interface to connect a remote automotive camera module to a display or machine vision processing system. It uses TI's FPD-Link III SerDes technology to transmit uncompressed MegaPixel video data, bidirectional control signals and power either over shielded twisted pair or coax cable.	<ul style="list-style-type: none"> <li>• Space optimized design fits on a single PCB 20x20 mm</li> <li>• Power supply optimized for small size and high efficiency</li> <li>• 1Mpixel image sensor AR0140AT from Aptina providing 10/12bit raw image data</li> <li>• Single Rosenberger Fakra coax connector for digital video, power, control and diagnostics</li> <li>• Diagnostic and Built In Self Test (BIST) for ASIL B Applications</li> <li>• This circuit is tested and includes design considerations and BOM analysis</li> <li>• Design includes the TPS3836E18-Q1 supervisor</li> </ul>
<b>Learn more at: <a href="http://www.ti.com/tool/TIDA-00262">www.ti.com/tool/TIDA-00262</a></b>	

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