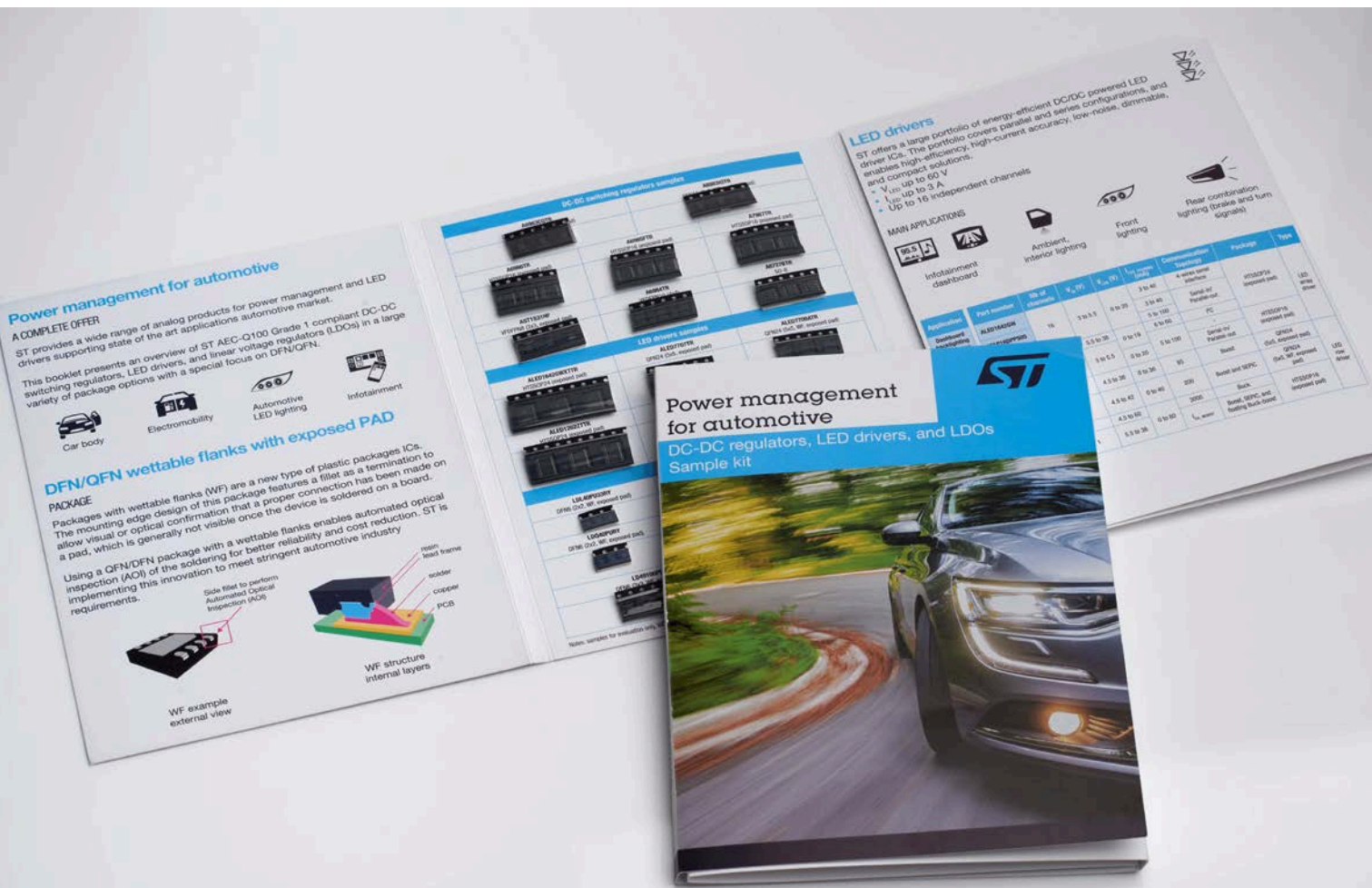




Order the Power Management for automotive sample kit!



Discover and test our automotive-grade DC-DC converters, LED drivers, and LDOs



LED drivers

ST offers a large portfolio of energy-efficient DC/DC powered LED driver ICs. The portfolio covers parallel and series configurations, and enables high-efficiency, high-current accuracy, low-noise, dimmable, and compact solutions.

- V_{in} up to 80 V
- I_{out} up to 5 A
- Up to 16 independent channels

MAIN APPLICATIONS

- Infotainment dashboard
- Ambient interior lighting
- Front lighting
- Rear combination lighting (brake and turn signals)

Device	Architecture	V _{in} (V)	I _{out} (A)	η (%)	Frequency (kHz)	Package	Temp. (°C)	Part
AL8800	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8800
AL8801	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8801
AL8802	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8802
AL8803	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8803
AL8804	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8804
AL8805	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8805
AL8806	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8806
AL8807	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8807
AL8808	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8808
AL8809	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8809
AL8810	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8810
AL8811	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8811
AL8812	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8812
AL8813	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8813
AL8814	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8814
AL8815	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8815
AL8816	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8816
AL8817	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8817
AL8818	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8818
AL8819	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8819
AL8820	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8820

Linear voltage regulators (LDOs)

ST low dropout (LDO) linear voltage regulators balance cost and performance in applications where the output current is less than the input current and the output voltage is close to the input value.

- V_{in} up to 80 V
- I_{out} up to 1.5 A
- Available adjustable and/or fixed V_{out} options
- Available LDOs for car battery connection and for post regulation

MAIN APPLICATIONS

- Infotainment dashboard
- Telematics control unit
- ADAS: car and foot cameras, radars, sensors

Device	Architecture	V _{in} (V)	I _{out} (A)	η (%)	Dropout (mV)	Package	Temp. (°C)	Part
AL8821	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8821
AL8822	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8822
AL8823	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8823
AL8824	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8824
AL8825	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8825
AL8826	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8826
AL8827	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8827
AL8828	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8828
AL8829	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8829
AL8830	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8830
AL8831	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8831
AL8832	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8832
AL8833	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8833
AL8834	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8834
AL8835	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8835
AL8836	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8836
AL8837	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8837
AL8838	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8838
AL8839	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8839
AL8840	Series	18-80	1.5	92	100	DFN	-40 to 125	AL8840

eDesignSuite and eDSim

eDesignSuite is a free online design tool that offers excellent support for engineers working on various applications. The smart tool includes the following design modules:

- Power management design center, including LED lighting design tool
- Thermal simulation for components
- Signal conditioning design tool
- MCU/FPGA calculator

eDSim is a fast and powerful electrical simulation tool for SMPS and analog ICs. Integrated in the eDesignSuite tool, it features enhanced accuracy and higher convergence speed for SMPS, with 10-50x faster simulation speeds than conventional analog SPICE simulators.

Power management for automotive

DC-DC regulators, LED drivers, and LDOs Sample kit

Power management for automotive

A COMPLETE OFFER

ST provides a wide range of analog products for power management and LED drivers supporting state-of-the-art applications automotive market.

This booklet presents an overview of ST AEC-Q100 Grade 1 compliant DC-DC switching regulators, LED drivers, and linear voltage regulators (LDOs) in a large variety of package options with a special focus on DFN/QFN.

DFN/QFN wettable flanks with exposed PAD

PACKAGE

Packages with wettable flanks (WF) are a new type of plastic packages ICs. The mounting edge design of this package features a fillet as a termination to allow visual or optical confirmation that a proper connection has been made on a pad, which is generally not visible once the device is soldered on a board.

Using a QFN/DFN package with a wettable flanks enables automated optical inspection (AOI) of the soldering for better reliability and cost reduction. ST is implementing this innovation to meet stringent automotive industry requirements.

DC-DC switching regulators

PRODUCT PORTFOLIO

ST monolithic DC-DC switching regulators are available in multiple package options offering competitive and high thermal performance.

- V_{in} up to 80 V
- I_{out} up to 2.3 A
- F_{sw} up to 2.3 MHz
- Block and isolated buck converters available

Architecture	Device	V _{in} (V)	I _{out} (A)	η (%)	Frequency (kHz)	Package	Temp. (°C)	Part
Block	AL8841	18-80	1.5	92	100	DFN	-40 to 125	AL8841
Block	AL8842	18-80	1.5	92	100	DFN	-40 to 125	AL8842
Block	AL8843	18-80	1.5	92	100	DFN	-40 to 125	AL8843
Block	AL8844	18-80	1.5	92	100	DFN	-40 to 125	AL8844
Block	AL8845	18-80	1.5	92	100	DFN	-40 to 125	AL8845
Block	AL8846	18-80	1.5	92	100	DFN	-40 to 125	AL8846
Block	AL8847	18-80	1.5	92	100	DFN	-40 to 125	AL8847
Block	AL8848	18-80	1.5	92	100	DFN	-40 to 125	AL8848
Block	AL8849	18-80	1.5	92	100	DFN	-40 to 125	AL8849
Block	AL8850	18-80	1.5	92	100	DFN	-40 to 125	AL8850
Block	AL8851	18-80	1.5	92	100	DFN	-40 to 125	AL8851
Block	AL8852	18-80	1.5	92	100	DFN	-40 to 125	AL8852
Block	AL8853	18-80	1.5	92	100	DFN	-40 to 125	AL8853
Block	AL8854	18-80	1.5	92	100	DFN	-40 to 125	AL8854
Block	AL8855	18-80	1.5	92	100	DFN	-40 to 125	AL8855
Block	AL8856	18-80	1.5	92	100	DFN	-40 to 125	AL8856
Block	AL8857	18-80	1.5	92	100	DFN	-40 to 125	AL8857
Block	AL8858	18-80	1.5	92	100	DFN	-40 to 125	AL8858
Block	AL8859	18-80	1.5	92	100	DFN	-40 to 125	AL8859
Block	AL8860	18-80	1.5	92	100	DFN	-40 to 125	AL8860
Block	AL8861	18-80	1.5	92	100	DFN	-40 to 125	AL8861
Block	AL8862	18-80	1.5	92	100	DFN	-40 to 125	AL8862
Block	AL8863	18-80	1.5	92	100	DFN	-40 to 125	AL8863
Block	AL8864	18-80	1.5	92	100	DFN	-40 to 125	AL8864
Block	AL8865	18-80	1.5	92	100	DFN	-40 to 125	AL8865
Block	AL8866	18-80	1.5	92	100	DFN	-40 to 125	AL8866
Block	AL8867	18-80	1.5	92	100	DFN	-40 to 125	AL8867
Block	AL8868	18-80	1.5	92	100	DFN	-40 to 125	AL8868
Block	AL8869	18-80	1.5	92	100	DFN	-40 to 125	AL8869
Block	AL8870	18-80	1.5	92	100	DFN	-40 to 125	AL8870
Block	AL8871	18-80	1.5	92	100	DFN	-40 to 125	AL8871
Block	AL8872	18-80	1.5	92	100	DFN	-40 to 125	AL8872
Block	AL8873	18-80	1.5	92	100	DFN	-40 to 125	AL8873
Block	AL8874	18-80	1.5	92	100	DFN	-40 to 125	AL8874
Block	AL8875	18-80	1.5	92	100	DFN	-40 to 125	AL8875
Block	AL8876	18-80	1.5	92	100	DFN	-40 to 125	AL8876
Block	AL8877	18-80	1.5	92	100	DFN	-40 to 125	AL8877
Block	AL8878	18-80	1.5	92	100	DFN	-40 to 125	AL8878
Block	AL8879	18-80	1.5	92	100	DFN	-40 to 125	AL8879
Block	AL8880	18-80	1.5	92	100	DFN	-40 to 125	AL8880
Block	AL8881	18-80	1.5	92	100	DFN	-40 to 125	AL8881
Block	AL8882	18-80	1.5	92	100	DFN	-40 to 125	AL8882
Block	AL8883	18-80	1.5	92	100	DFN	-40 to 125	AL8883
Block	AL8884	18-80	1.5	92	100	DFN	-40 to 125	AL8884
Block	AL8885	18-80	1.5	92	100	DFN	-40 to 125	AL8885
Block	AL8886	18-80	1.5	92	100	DFN	-40 to 125	AL8886
Block	AL8887	18-80	1.5	92	100	DFN	-40 to 125	AL8887
Block	AL8888	18-80	1.5	92	100	DFN	-40 to 125	AL8888
Block	AL8889	18-80	1.5	92	100	DFN	-40 to 125	AL8889
Block	AL8890	18-80	1.5	92	100	DFN	-40 to 125	AL8890
Block	AL8891	18-80	1.5	92	100	DFN	-40 to 125	AL8891
Block	AL8892	18-80	1.5	92	100	DFN	-40 to 125	AL8892
Block	AL8893	18-80	1.5	92	100	DFN	-40 to 125	AL8893
Block	AL8894	18-80	1.5	92	100	DFN	-40 to 125	AL8894
Block	AL8895	18-80	1.5	92	100	DFN	-40 to 125	AL8895
Block	AL8896	18-80	1.5	92	100	DFN	-40 to 125	AL8896
Block	AL8897	18-80	1.5	92	100	DFN	-40 to 125	AL8897
Block	AL8898	18-80	1.5	92	100	DFN	-40 to 125	AL8898
Block	AL8899	18-80	1.5	92	100	DFN	-40 to 125	AL8899
Block	AL8900	18-80	1.5	92	100	DFN	-40 to 125	AL8900
Block	AL8901	18-80	1.5	92	100	DFN	-40 to 125	AL8901
Block	AL8902	18-80	1.5	92	100	DFN	-40 to 125	AL8902
Block	AL8903	18-80	1.5	92	100	DFN	-40 to 125	AL8903
Block	AL8904	18-80	1.5	92	100	DFN	-40 to 125	AL8904
Block	AL8905	18-80	1.5	92	100	DFN	-40 to 125	AL8905
Block	AL8906	18-80	1.5	92	100	DFN	-40 to 125	AL8906
Block	AL8907	18-80	1.5	92	100	DFN	-40 to 125	AL8907
Block	AL8908	18-80	1.5	92	100	DFN	-40 to 125	AL8908
Block	AL8909	18-80	1.5	92	100	DFN	-40 to 125	AL8909
Block	AL8910	18-80	1.5	92	100	DFN	-40 to 125	AL8910
Block	AL8911	18-80	1.5	92	100	DFN	-40 to 125	AL8911
Block	AL8912	18-80</						



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Discover and test our **automotive-grade** DC-DC converters, LED drivers, and LDOs



22 commercial products

8 DC-DC switching regulators

6 LED drivers

8 Linear regulators (LDOs)



3 available samples for each of the 22 commercial products



[Learn more](#)



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A complete offer

Samples

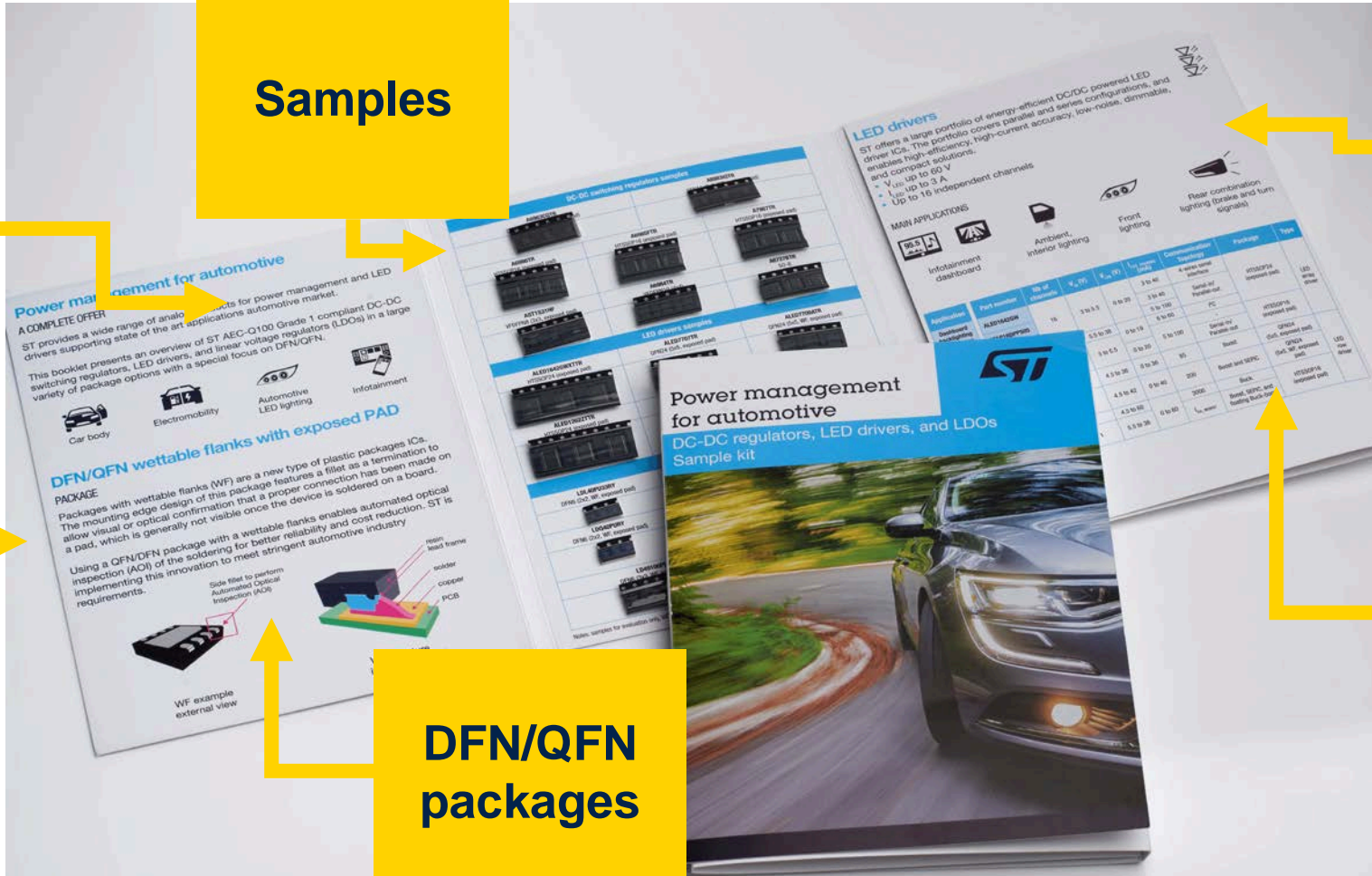
Overview of the product portfolio

Useful resources

DFN/QFN packages

Featured families

Learn more



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Product	Description	Package
DC-DC switching regulators		
A6727BTR	Automotive single-phase PWM controller	SO-8
A6983	Automotive-grade 38 V, 3 A synchronous step-down converter with 25 μ A quiescent current	QFN16 (3x3 WF)
A6983I	Automotive 38 V, 10 W synchronous iso-buck converter for isolated applications	QFN16 (3x3 WF)
A6984	36 V 400 mA synchronous step-down switching regulator	VFDFPN10 (4x4)
A6985F	Automotive 38 V, 500 mA synchronous step-down switching regulator with 30 μ A quiescent current	HTSSOP16
A6986	38 V, 2 A synchronous step-down switching regulator with 30 μ A quiescent current	HTSSOP16
A7987	61 V 3A asynchronous step-down switching regulator with adjustable current limitation for automotive	HTSSOP16
AST1S31HF	Up to 4 V, 3 A step-down 2.3 MHz switching regulator for automotive applications	VFDFPN (3x3)
LED drivers		
ALED1262ZT	Automotive-grade 12-channel LED driver with open detection, local dimming, bus driven and standalone operations	HTSSOP24 Exposed pad
ALED1642GW	16 Channels LED driver with error detection, current gain control and 12/16 bit-PWM brightness control for automotive applications	HTSSOP24 Exposed pad
ALED6000	Automotive 3A single channel LED driver with integrated DC-DC converter	HTSSOP16
ALED7707	6-row 85 mA LEDs driver with boost regulator for LCD panel backlights	QFN24 (5x5) exposed pad
ALED7709	Automotive LED driver 4-channel 200 mA with a DC-DC controller	QFN24 (5x5cWF) exposed pad
ALED8102S	8 Channels LED driver with direct switch control	HTSSOP16 Exposed pad
Linear regulators (LDOs)		
LDO40L	400 mA, 38 V low-dropout regulator, with 45 μ A quiescent current	DFN6 (3x3 WF) exposed pad
LDH40Y	200 mA low dropout LDO	DFN6 (2x2 WF) exposed pad
LDL40Y	200 mA low dropout LDO	DFN6 (2x2 WF) exposed pad
LDQ40LY	400 mA, 38 V low-dropout regulator, with 45 μ A quiescent current	DFN6 (2x2 WF) exposed pad
LD59150Y	1.5 A Low Dropout Linear Regulator with Programmable Soft-Start	DFN10 (3x3 WF) exposed pad
LD39100Y	1 A low quiescent current low noise voltage regulator	DFN6 (3x3 WF) exposed pad
LD49100Y	1 A, low quiescent current, low-noise voltage regulator with soft start - Automotive grade	DFN6 (3x3 WF) exposed pad
LDK130Y	300 mA low quiescent current very low noise LDO (automotive for SOT23-5L package)	SOT23-5L

