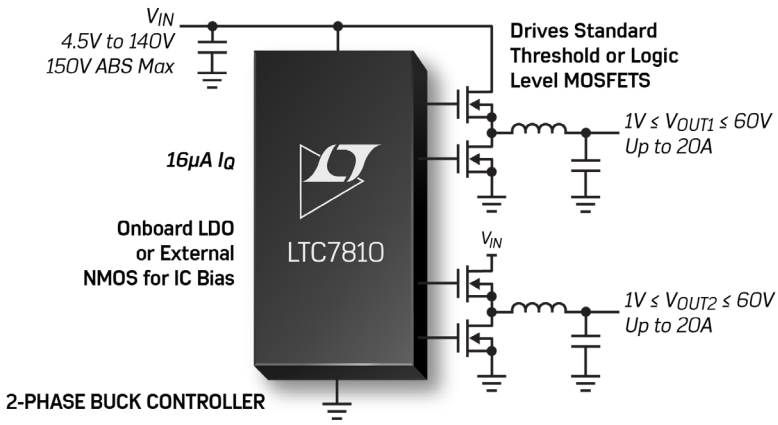
ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

POWER BY LINEAR™

80V TO 150V NON-ISOLATED DC/DC

Controllers, Monolithics & MOSFET Drivers

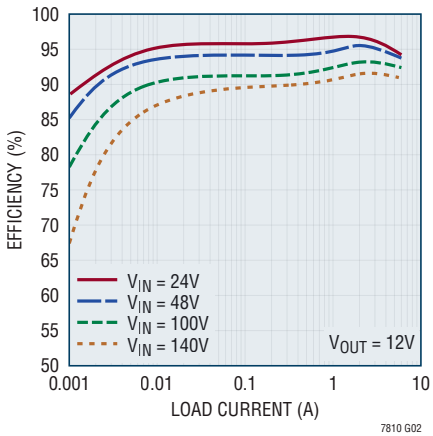


These new DC/DC switching regulator controllers, monolithics, and MOSFET gate drivers are designed to operate from a high input voltage or from an input that has high voltage transient excursions, eliminating the need for bulky and costly surge suppression devices. Many of them feature low quiescent currents and adjustable gate drive to enable the use of standard threshold or logic-level power MOSFETs to optimize performance in industrial control, transportation, robotic and datacom applications.

LTC7810 Features

- V_{IN} Range: 4.5V to 140V (150V Abs Max)
- V_{OUT} Range: 1V ≤ V_{OUT} ≤ 60V
- Easily Configured for 2-Phase Single Output
- Low I_Q: 16µA
- Drives Logic-Level or STD Threshold MOSFETs
- Optional Spread Spectrum Operation
- Very Low Dropout: 100% Duty Cycle Operation
- Phase-Lockable Frequency (75kHz to 720kHz)
- Onboard LDO or External NMOS LDO for V_{CC}
- 48-Lead 7mm × 7mm LQFP Package

Efficiency Curves at Differnt V_{IN}



Buck & Buck-Boost Controllers

Part Number	Topology	V_{IN} Range (V)	V_{OUT} Range (V)	Max I_{OUT} (A)	Package
LTC3895	Buck	4 to 140, 150 Abs Max	0.8 to 60	20	TSSOP-38 (31)
LTC7801	Buck	4 to 140, 150 Abs Max	0.8 to 60	20	TSSOP-24/QFN-24
LTC7810	Dual Buck	4 to 140, 150 Abs Max	1 to 60	20/Phase	eLQFP-48
LTC3810	Buck	6 to 100	0.8 to 0.93 V_{IN}	20	SSOP-28
LTC3703	Buck (Voltage Mode)	9 to 100	0.8 to 0.93 V_{IN}	20	SSOP-16, TSSOP-28
LTC3777	Buck-Boost w/Bias Generator	4.5 to 150	1.2 to 150	20	TSSOP-38 (31)
LTC3779	Buck-Boost	4.5 to 150	1.2 to 150	20	TSSOP-38 (31)
LT8705A	Buck-Boost	2.8 to 80	1.3 to 80	20	TSSOP-38 (31)
LTC3871	Bidirectional Buck/Boost	1.2 to 30/5 to 100	1.2 to 30/5 to 100	20/Phase	7mm × 7mm LQFP-48
LT8708/LT8708-1	Bidirectional Buck/Boost	2.8 to 80	1.3 to 80	20	5mm × 8mm QFN-40

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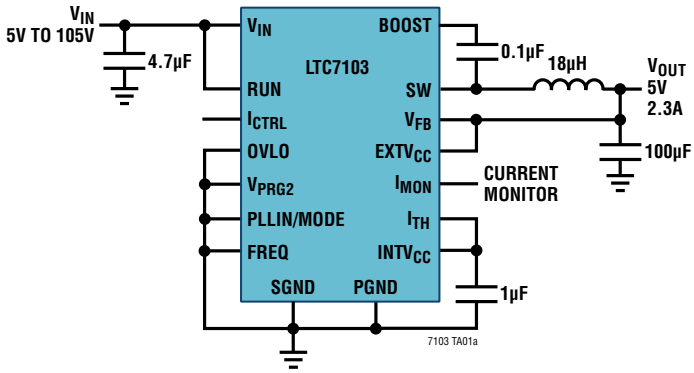
Monolithic Bucks

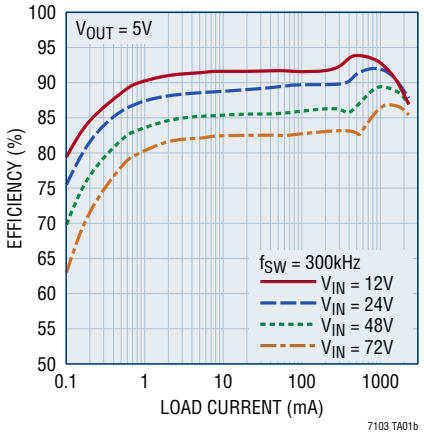
LTC7103: 5V to 105V Input to 5V/2.3A Output Step-Down Regulator



LTC7103 Features

- V_{IN} Range: 4.4V to 105V (110V Abs Max)
- EMI/EMC Emissions: CISPR 25 Compliant
- 2µA I_Q When Regulating 48 V_{IN} to 3.3 V_{OUT}
- Brick Wall Current Limit
- Low Minimum On-Time: 40ns
- Wide V_{OUT} Range: 1V to V_{IN}
- 100% Duty Cycle Operation
- Selectable Fixed Frequency: 200kHz to 2MHz
- 5mm × 6mm QFN-36 Package

Efficiency Curves at Different V_{IN}

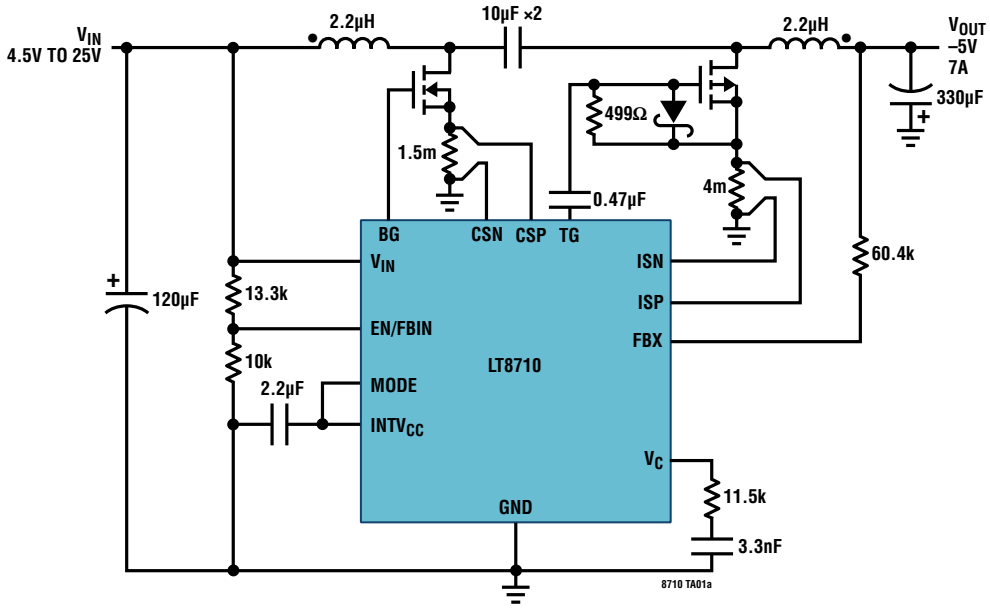


Monolithic Buck Converters

Part Number	Quiescent/Current (µA)	V_{IN} Range (V)	V_{OUT} Range (V)	Max I_{OUT} (A)	Package
LTC3639	12	4 to 150	0.8 to V_{IN}	100mA	MSOP-16(12)
LTC3638	12	4 to 150	0.8 to V_{IN}	250mA	MSOP-16(12)
LTC7138	12	4 to 140	0.8 to V_{IN}	400mA	MSOP-16(12)
LTC7103	2	4.4 to 105	1 to V_{IN}	2.3	5mm × 6mm QFN-36
LT8630	7	3 to 100	0.8 to 60	600mA	TSSOP-20
LT8631	7	3 to 100	0.8 to 60	1	TSSOP-20

Multitopology Devices

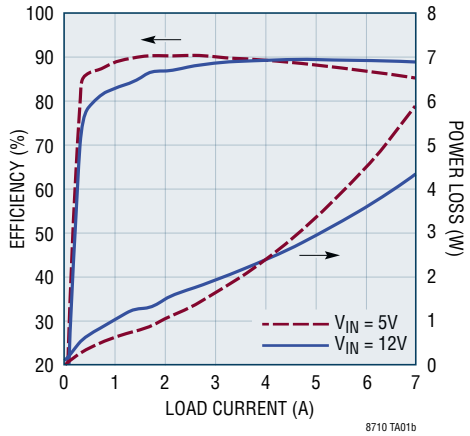
LT8710: Synchronous Inverter Generates –5V/7A from a 4.5V to 25V Input



LT8710 Features

- Synchronous SEPIC/Inverting/Boost Controller
- Wide Input Range: 4.5V to 80V
- Rail-to-Rail Output Current Monitor and Control
- Input Voltage Regulation for High Impedance Inputs
- C/10 or Power Good Indication Pin
- MODE Pin for Forced CCM or Pulse-Skipping Operation
- Switching Frequency Up to 750kHz
- Can Be Synchronized to an External Clock
- High Gain EN/FBIN Pin Accepts Slowly Varying Input Signals
- Thermally Enhanced 20-Lead TSSOP Package

Efficiency/Power Loss Curves



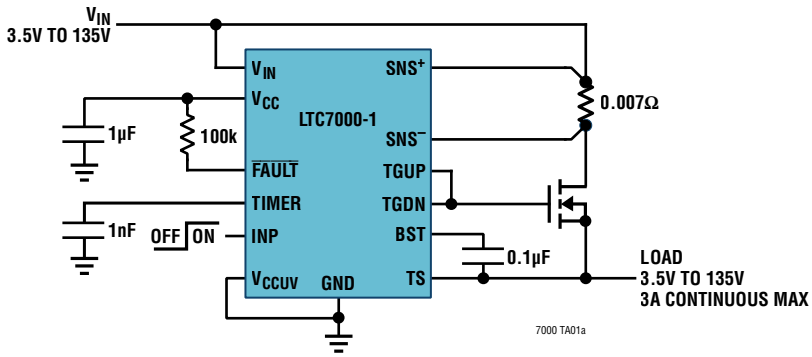
Multitopology Devices

Part Number	Topology	V_{IN} Range (V)	V_{OUT} Range (V)	Max I_{OUT} (A)	Package
LT3758	Boost, Flyback, SEPIC and Inverting	5.5 to 100	Depends on External Components	3	3mm × 3mm DFN-10, MSOP-10
LT8710	Synchronous SEPIC/Inverting/Boost	4.5 to 80	Depends on External Components	10	TSSOP-20
LTC3896	Synchronous Inverter	4 to 140, 150 Abs Max	–0.8 to –60V	20	TSSOP-38
LT8714	Synchronous 4-Quadrant	4.5 to 80	Depends on External Components	10	TSSOP-20
LT3796	Buck, Boost, SEPIC LED Driver	6 to 100	Depends on External Components	3	TSSOP-28

MOSFET Gate Drivers

LTC7000/LTC7000-1

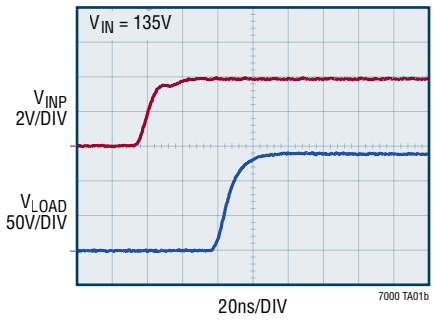
The LTC7000/-1 are fast high-side N-channel MOSFET gate drivers that operate from input voltages up to 135V. They contain an internal charge pump that fully enhances an external N-channel MOSFET switch, allowing them to remain on indefinitely. Their powerful driver can easily drive large gate capacitances with very short transition times, making them also well suited for high frequency switching applications that require a fast turn-on and/or turn-off time.



LTC7000 Features

- V_{IN} Range: 3.5V to 135V (150V Abs Max)
- Internal Charge Pump for 100% Duty Cycle
- 1Ω Pull-Down, 2.2Ω Pull-Up
- Fast Turn-On and Turn-Off Times
- Short-Circuit Protected
- Adjustable Current Trip Threshold
- Current Monitor Output
- Automatic Restart Timer
- Open-Drain Fault Flag
- Adjustable Turn-On Slew Rate
- Gate Driver Supply from 3.5V to 15V
- CMOS Compatible Input
- MSOP-16 Packages with High Voltage Spacing

Turn-On Waveform



	LTC7000	LTC7000-1
Package	16-Lead MSOP MSE16	16-Lead MSOP MSE16(12)
High Voltage Pin Spacing	0.157mm	0.657mm
RUN/OVLO/I_{SET}/I_{MON} Pins	Yes	No

MOSFET Gate Drivers

Part Number	Topology	V_{IN} Range (V)	V_{OUT} Range (V)	Max I_{OUT} (A)	Package
LTC7000/LTC7000-1	Protected High-Side NMOS Gate Driver	3.5 to 150	3.5 to 150	Up to 50+	MSOP-16/MSOP-16(12)
LTC7001	High-Side NMOS Gate Driver	3.5 to 150	3.5 to 150	Up to 50+	MSOP-10
LTC4444	Synchronous N-Channel MOSFET Driver	Up to 114	Up to 100	Up to 50+	MSOP-8
LTC4440A-5	High-Side NMOS Gate Driver	Up to 80, 100 Abs Max	Up to 80, 100 Abs Max	Up to 50+	MSOP-8/SOT-23

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