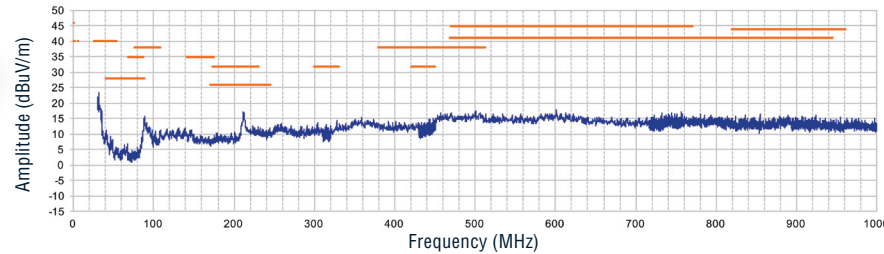
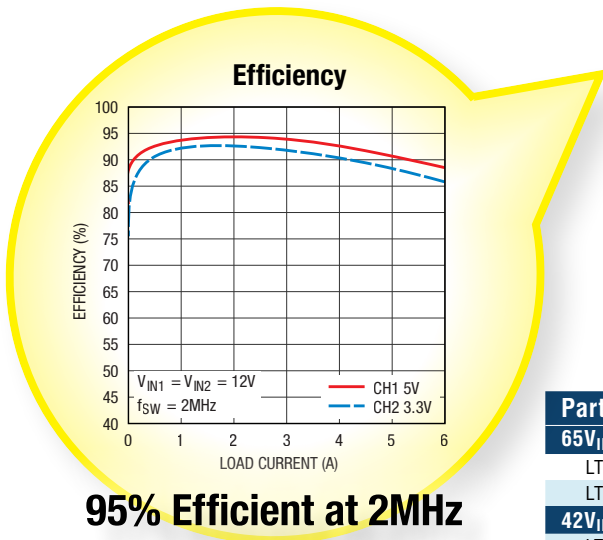


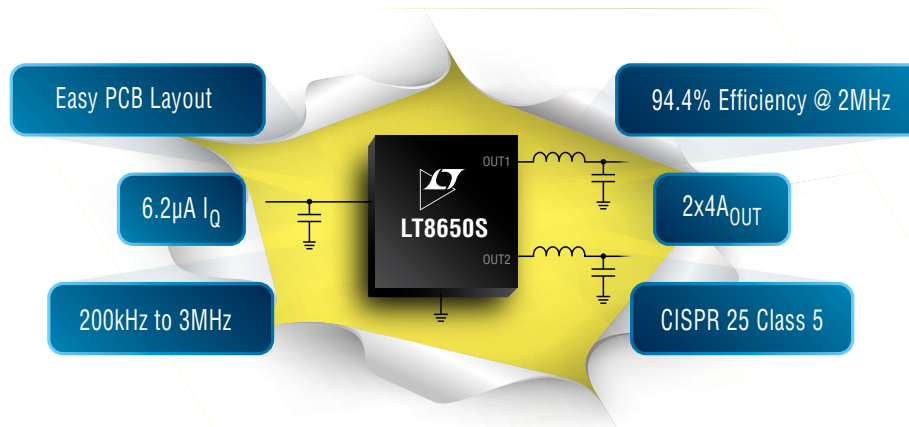
SILENT SWITCHER 2

High Efficiency • High Frequency • Low EMI



LT8650S EMI/EMC Curve 5V@3.8A, 3.3V@4.2V,
 $f_{SW} = 2MHz$ with Spread Spectrum

Part Number	Silent Switcher Family	V_{IN} Range (V)	I_{OUT} (A)	$V_{OUT(MIN)}$ (V)	Frequency	I_Q (μA)	Package
65V_{IN(MAX)}							
LT8641	Silent Switcher	3.0 to 65	3.5	0.8	200kHz to 3MHz	2.5	3x4 QFN-18
LT8645S	Silent Switcher 2	3.4 to 65	8	0.8	200kHz to 2.2MHz	2.5	4x6 LQFN-32
42V_{IN(MAX)}							
LT8606	Low EMI	3.0 to 42	350mA	0.8	200kHz to 2.2MHz	3	2x2 DFN, MSOP10E
LT8607	Low EMI	3.0 to 42	750mA	0.8	200kHz to 2.2MHz	3	2x2 DFN, MSOP10E
LT8608	Low EMI	3.0 to 42	1.5	0.8	200kHz to 2.2MHz	2.5	2x2 DFN, MSOP10E
LT8609S	Silent Switcher 2	3.0 to 42	2/3 Peak	0.8	200kHz to 2.2MHz	2.5	3x3 LQFN-16
LT8609A	Low EMI	3.0 to 42	2/3 Peak	0.8	200kHz to 2.2MHz	2.5	3x3 DFN, MSOP10E
LT8614	Silent Switcher	3.4 to 42	4	0.97	200kHz to 2.2MHz	2.5	3x4 QFN-18
LT8653S	Silent Switcher 2	3.0 to 42	2x2/3 Peak	0.8	200kHz to 3MHz	6	3x4 LQFN-20
LT8640/-1	Silent Switcher	3.4 to 42	5/7 Peak	0.97	200kHz to 3MHz	2.5	3x4 QFN-18
LT8640S	Silent Switcher 2	3.4 to 42	5/7 Peak	0.97	200kHz to 3MHz	2.5	4x4 LQFN-24
LT8643S	Silent Switcher 2	3.4 to 42	5/7 Peak	0.97	200kHz to 3MHz	230	4x4 LQFN-24
LT8650S	Silent Switcher 2	3.0 to 42	2x4/6 Peak	0.8	200kHz to 3MHz	6.2	4x6 LQFN-32
LT8648S	Silent Switcher 2	3.0 to 42	15	0.6	200kHz to 3MHz	6	4x7 LQFN-36
18V_{IN(MAX)}							
LT8642S	Silent Switcher 2	2.8 to 18	10	0.6	200kHz to 3MHz	240	4x4 LQFN-24
LTC7151S	Silent Switcher 2	3.1 to 20	15	0.6	400kHz to 3MHz	2mA	4x5 LQFN-28
LTC7150S	Silent Switcher 2	3.1 to 20	20	0.6	400kHz to 3MHz	2mA	5x6 BGA-42
LT8652S	Silent Switcher 2	3.0 to 18	8+8	0.6	300kHz to 3MHz	6	4x7 LQFN-36
5V_{IN(MAX)}							
LTC3307/8/9	Silent Switcher	2.25 to 5.5	3/4/6	0.5	500kHz to 5MHz	45	2x2 LQFN-12
LTC3315	Silent Switcher	2.25 to 5.5	2+2	0.5	500kHz to 5MHz	70	2x2 LQFN-12
LTC3310S	Silent Switcher 2	2.25 to 5.5	10	0.5	500kHz to 5MHz	1.3mA	3x3 LQFN-18
LT8647S	Silent Switcher 2	2.8 to 8	7	0.6	300kHz to 4MHz	140	3x4 LQFN-20
LT8644S	Silent Switcher 2	2.8 to 8	15	0.6	300kHz to 4MHz	145	4x4 LQFN-24

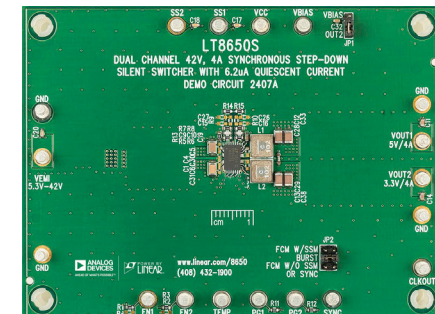


Silent Switcher 2 Unrivaled Ease-of-Use

Faster • Smaller • Quieter

The LT8650S combines high efficiency at high frequencies and an ultralow EMI design to deliver a very compact dual output 4A (6A peak) synchronous step-down solution. It delivers efficiency as high as 94.4% ($12V_{IN}$ to $5V_{OUT}$) with a switching frequency of 2MHz offering a very compact solution footprint. The LT8650S's unique Silent Switcher^{®2} architecture uses four internal input capacitors as well as internal BST and $INTV_{CC}$ capacitors to minimize the area of the hot loops. Additionally, its fast, clean, low overshoot switching edges enable both high efficiency operation, at high switching frequencies, and low EMI/EMC emissions. The internal construction uses copper pillars in lieu of bond wires and an integrated ground plane to further reduce EMI/EMC emissions. This improved EMI/EMC performance is not sensitive to PCB layout, simplifying design and reducing risk even when using two layer PC boards. The LT8650S can easily pass the automotive CISPR 25, Class 5 peak EMI limits with a 2MHz switching frequency over its entire load range. Spread spectrum frequency modulation is also available to further lower EMI/EMC levels.

- 4A from Each Channel Simultaneously
- Up to 6A on Either Channel
- Silent Switcher Architecture:
 - Ultralow EMI/EMC Emissions on Any PCB
 - Eliminates PCB Layout Sensitivity
 - Internal Bypass Capacitors Reduce Radiated EMI
 - Optional Spread Spectrum Modulation
- Wide Input Voltage Range: 3.0V to 42V
- 94.4% Efficiency at 2MHz
- Ultralow Quiescent Current
- Burst Mode[®] Operation:
 - $6.2\mu A I_Q$, Output Ripple $10mV_{P-P}$
- Fast Minimum Switch-On Time: 40ns
- Adjustable and Synchronizable: 300kHz to 3MHz
- Output Soft-Start and Tracking
- Small Thermally Enhanced 4mm x 6mm 32-Pin LGA Package



LT8650S Demo Board (DC2407A)

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