

FEATURES

- High Efficiency: Up to 94%
- Wide Input Voltage Range: 4V to 14V
- 4A DC, 5A Peak Output Current Each Channel
- 0.6V to 5.5V Output Voltage
- Integrated Power N-Channel MOSFETs
- Adjustable Frequency 800kHz to 4MHz
- Output Tracking
- Up to 5.5W Power Dissipation ($T_A = 60^{\circ}\text{C}$, 200 LFM, No Heat Sink)
- $\pm 1.5\%$ Total Output Voltage Regulation
- Ripple: Typical Value Less Than 10.95mV
- Current Mode Operation for Excellent Line and Load Transient Response
- Internal Temperature Sensing Diode Output
- Overvoltage, Current and Temperature Protection
- 9mm \times 15mm \times 5.01mm BGA Package
- Adopting Soft Error Protection Technology
- AEC-Q100 Qualified for Automotive Applications

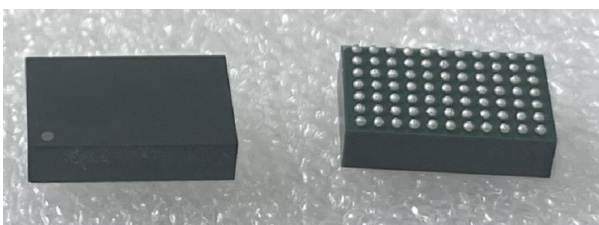
APPLICATIONS

- Point of Load Power Supply
- Portable Instruments
- Distributed Power Systems
- Battery-Powered Equipment

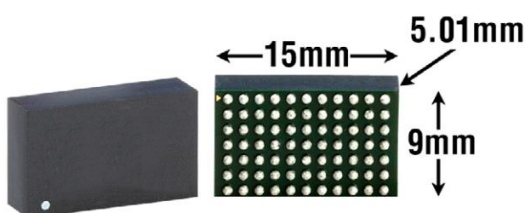
DESCRIPTION

The HL4644 is a quad DC/DC step-down μ Module (micromodule) regulator with 4A per output. Outputs can be paralleled in an array for up to 16A capability. Included in the package are the switching controllers, power FETs, inductors and support components. Operating over an input voltage range of 4V to 14V or 2.375V to 14V with an external bias supply, the HL4644 supports an output voltage range of 0.6V to 5.5V. Its high efficiency design delivers 4A continuous (5A peak) output current per channel. Only bulk input and output capacitors are needed.

HL4644



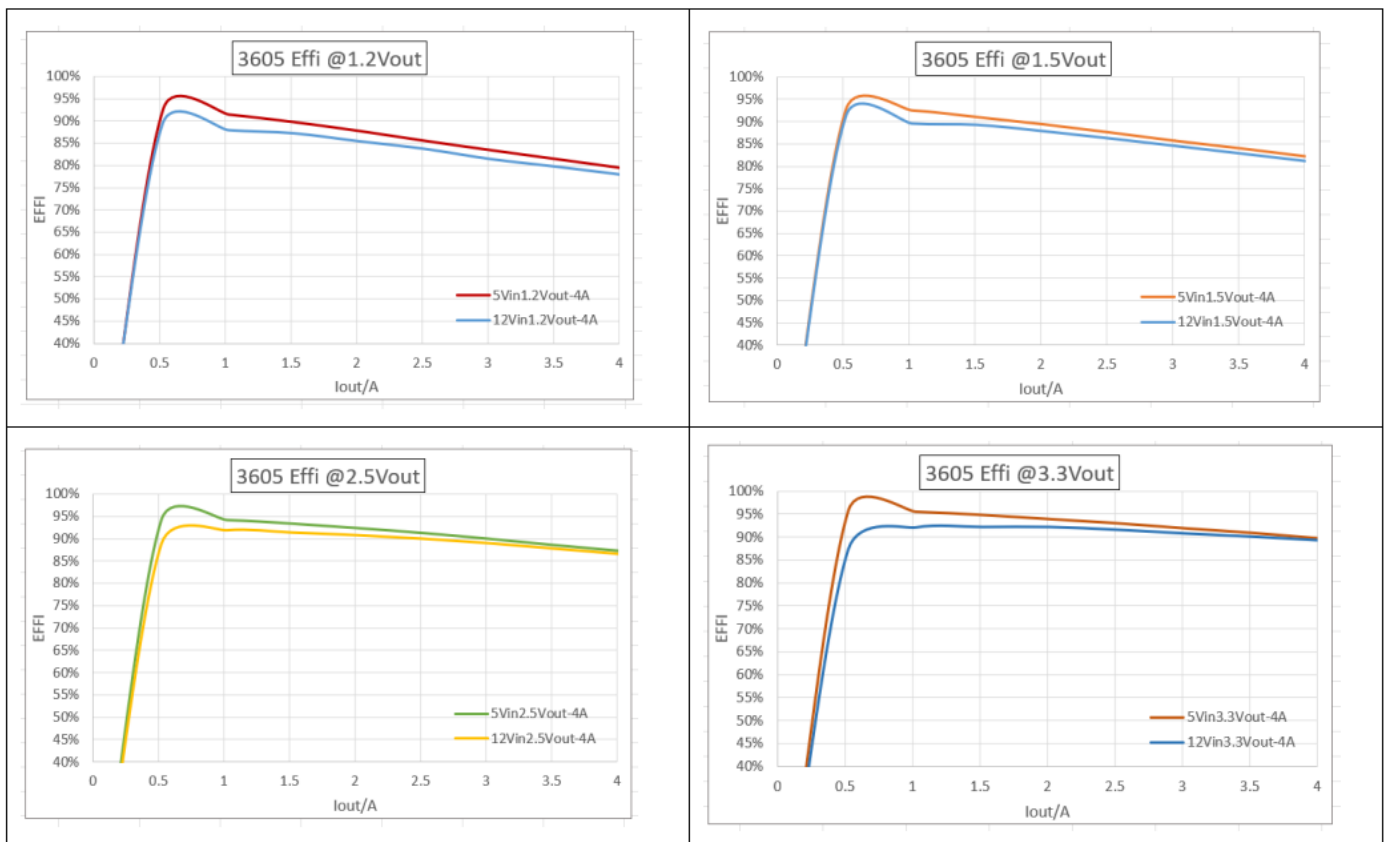
HLL4644



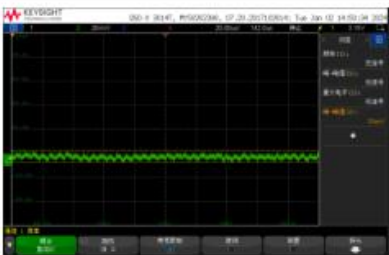
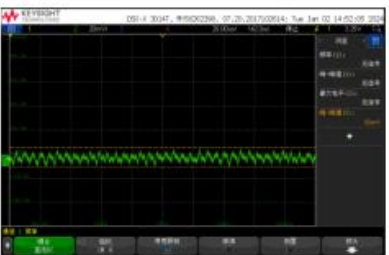
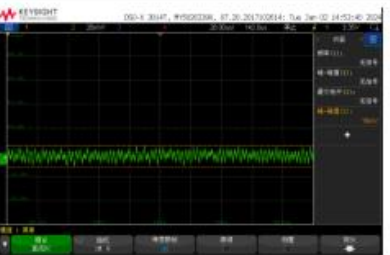
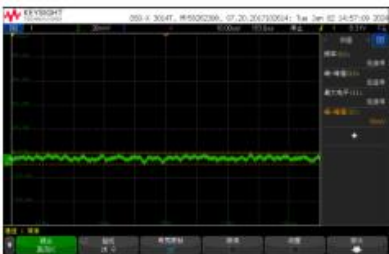

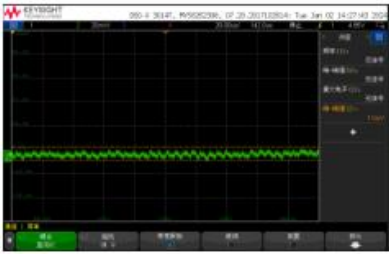

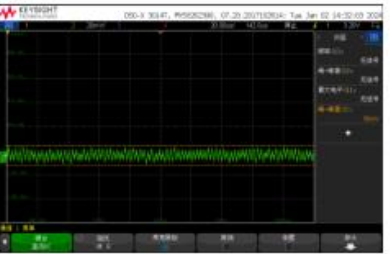
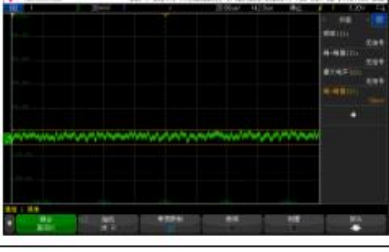
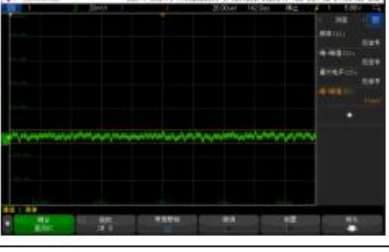
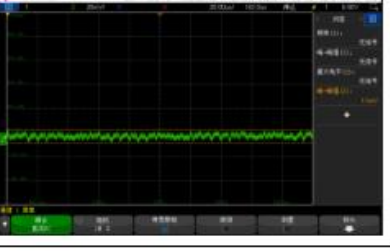
LTM4644 VS HL4644

Parameter	LTM4644	HL4644	Contrast
efficiency	94%	94%	consistent
Ripple	10.5mA	10.95mA	consistent
Vin	4V ~ 14V	4V ~ 14V	consistent
Vout	0.6V ~ 5.5V	0.6V ~ 5.5V	consistent
current	16A	16A	consistent
protect	Over voltage, over current, over temperature	Over voltage, over current, over temperature	consistent
package	BGA77 (9*15*5)	BGA77 (9*15*5)	consistent
certification	no	AEC-Q100	advanced
Independent	no	yes	advanced
radiation	no	yes	advanced

Efficiency



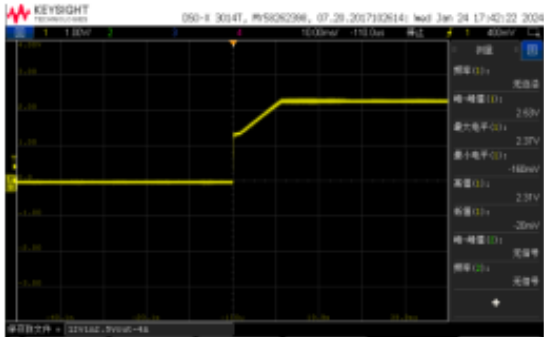
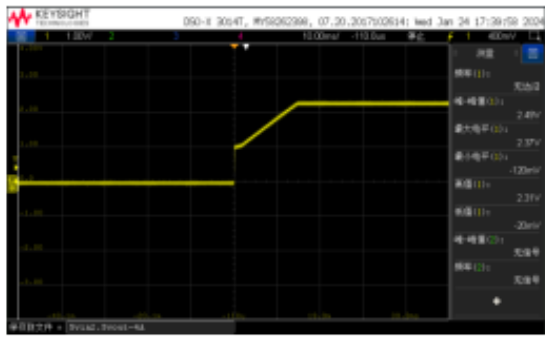
Ripple

$V_{OUT} = 1.2V$	0A	2A	4A
$V_{IN} = 5V$			
$V_{IN} = 12V$			
$V_{OUT} = 1.5V$	0A	2A	4A
$V_{IN} = 5V$			
$V_{IN} = 12V$			

Temperature test

Low Temperature -40°C		
VOUT = 2.5V	VIN = 5V	VIN = 12V
0A		
4A		
Low Temperature-55°C		
VOUT = 2.5V	VIN = 5V	VIN = 12V
0A		

4A



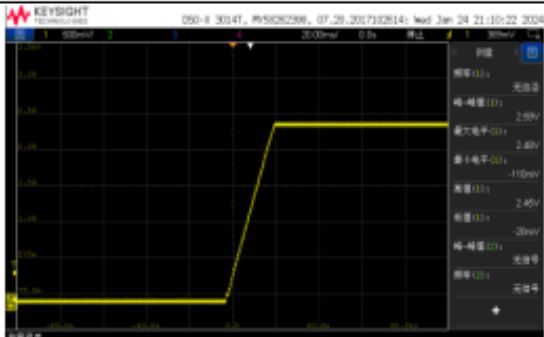
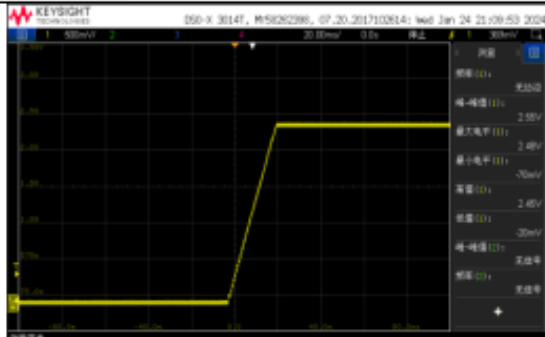
High Temperature 125°C

VOUT = 2.5V

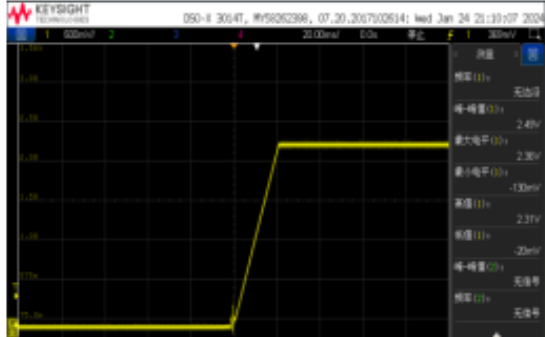
V_{IN} = 5V

V_{IN} = 12V

0A



4A



Output dynamics

