

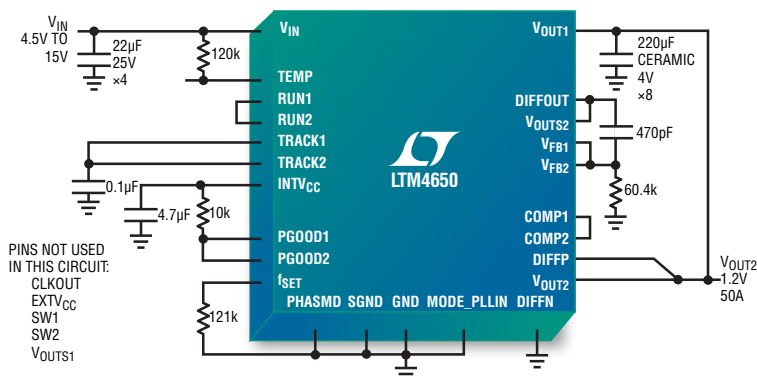
High Power, High Efficiency µModule Power Products

- 92% Efficiency at 5V_{IN} to 1.8V_{OUT} 50A
- 86% Efficiency at 12V_{IN} to 1.0V_{OUT} 50A

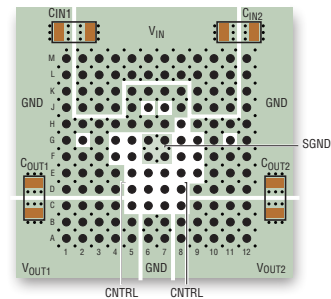
The LTM®4650 is a DC/DC step-down µModule® (power module) that can deliver dual 25A or single 50A in a 16mm x 16mm x 5.01mm BGA package. The efficiency is 92% at 5V_{IN} to 1.8V_{OUT}, 50A, and 86% at 12V_{IN} to 1.0V_{OUT}, 50A. Excellent efficiency and enhanced package technology management ease thermal issues in high power applications. The LTM4650 can be paralleled with multiple LTM4650s to deliver up to 300A with six devices in parallel. The LTM4650 is pin compatible with the LTM4630 (dual 18A or single 36A) and the LTM4620 (dual 13A or single 26A).

Pin Compatible µModule Power Products: from Dual 8A (Single 16A) Up to Dual 25A (Single 50A)

	LTM4628	LTM4620	LTM4620A	LTM4630	LTM4630A	LTM4630-1	LTM4650
V _{IN} Range	4.5V to 26.5V	4.5V to 16V		4.5V to 15V			
V _{OUT} Range	0.6V to 5.5V	0.6V to 2.5V	0.6V to 5.3V	0.6V to 1.8V	0.6V to 5.3V	0.6V to 1.8V	0.6V to 1.8V
I _{OUT}	Dual 8A, Single 16A	Dual 13A, Single 26A		Dual 18A, Single 36A			Dual 25A, Single 50A
V _{OUT} Accuracy	±1.5%					±0.8% (-1A), ±1.5% (-1B)	±1.5%
Compensation	Internal					External	Internal
Efficiency							
12V to 1.2V at 16A	86%	86%	88%	87%	88%	87%	88%
12V to 1.2V at 26A	NA	83%	85%	87%	87%	87%	88%
12V to 1.2V at 36A	NA	NA	NA	86%	86%	86%	88%
12V to 1.2V at 50A	NA	NA	NA	NA	NA	NA	87%
Package Type	LGA, BGA	LGA, BGA		LGA, BGA	LGA	BGA	BGA
Package (mm)	15 x 15 x 4.32 (LGA) 15 x 15 x 4.92 (BGA)	15 x 15 x 4.41 (LGA) 15 x 15 x 5.01 (BGA)		16 x 16 x 4.41 (LGA) 16 x 16 x 5.01 (BGA)	16 x 16 x 4.41	16 x 16 x 5.01	16 x 16 x 5.01
Compatibility	Pin Compatible						



LTM4650: 1.2V_{OUT} at 50A



LTM4650 Recommended PCB Layout
Pin Compatible with the LTM4630 (Dual 18A, Single 36A),
the LTM4620 (Dual 13A, Single 26A) and the LTM4628
(Dual 8A, Single 16A)

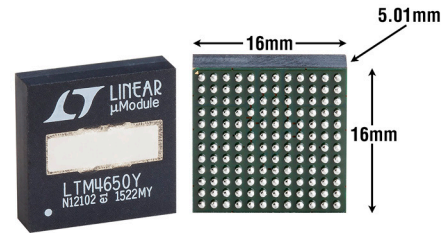


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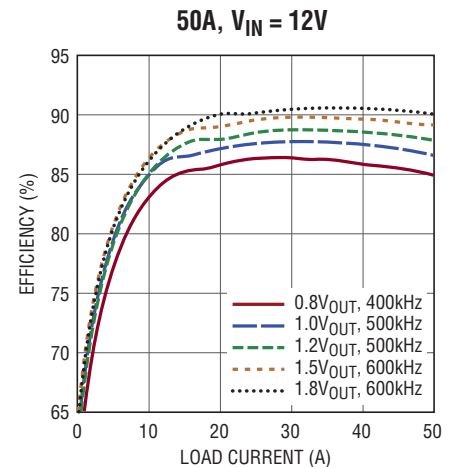
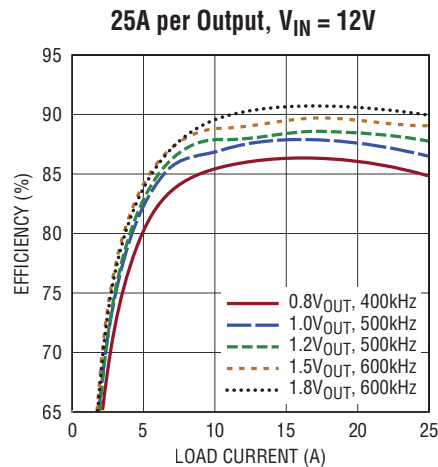
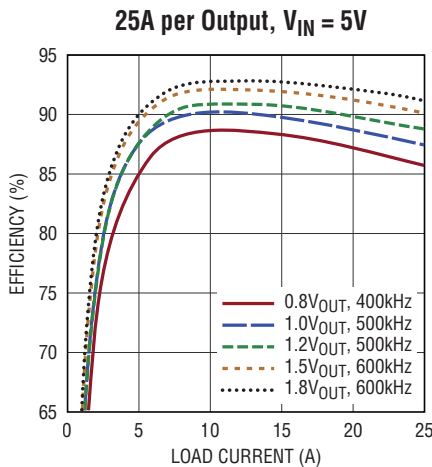
High Power, High Efficiency μModule Products

LTM4650: Dual 25A, Single 50A DC/DC μModule Regulator

- Input Voltage Range: 4.5V to 15V
- Output Voltage Range: 0.6V to 1.8V
- ±1.5% Maximum Total DC Output Error Over Line, Load and Temperature
- Differential Remote Sense Amplifier
- Multiphase Parallel Current Sharing with Multiple LTM4650s
- Pin Compatible with the LTM4628 (Dual 8A, Single 16A), LTM4620 (Dual 13A, Single 26A) and LTM4630 (Dual 18A, Single 36A)

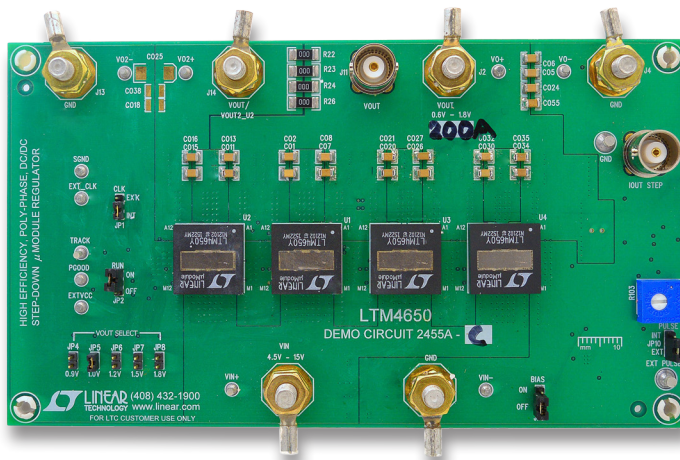


LTM4650 Efficiency



LTM4650 200A Output Demo Board

$V_{IN} = 4.5V$ to $15V$, $V_{OUT} = 0.9V$ to $1.8V$, 200A



LTM4650 200A Efficiency

Efficiency at $V_{IN} = 12V$, $V_{OUT} = 0.95V$

