TEXAS INSTRUMENTS

VinMin = 10.0V
VinMax = 12.0V
Vout = 3.3V
Iout = 1.0A

Device = LM25119QPSQ/NOPB
Topology = Buck
Created = 8/24/16 1:41:46 AM
BOM Cost = $5.18
Total Pd = 0.85W
Footprint = 434.0 mm^2
BOM Count = 40
tSim Id = 1

WEBENCH $^®$ Thermal Simulation Report

Design : 4049284/20 LM25119QPSQ/NOPB
LM25119QPSQ/NOPB 10.0V-12.0V to 5.00V @ 1.0A

Operating Condition

Name	Value
VIN_OP	12.0V
	NaNA

Ambient Temperature

Name	Temperature

Air Flow

Name	Direction

Edge Temperature

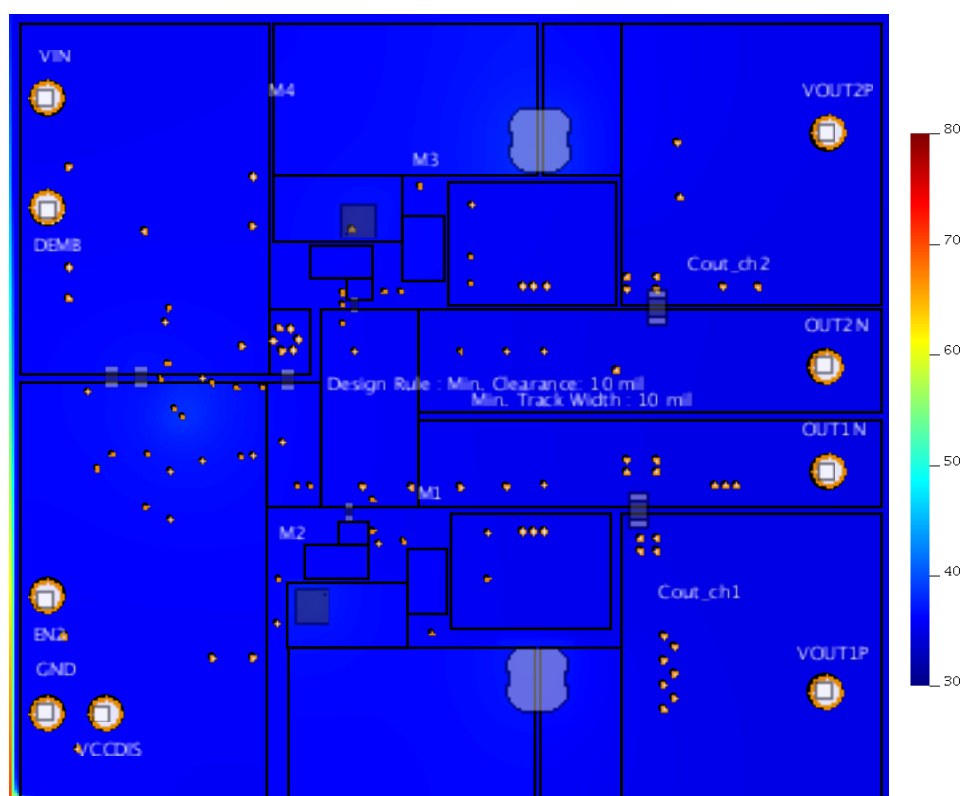| Name	Temperature	Thermal Type

My Comments
No comments

BOM

Component Name(s)	Part Number	Max Temp	Power Dissipation	Manufacture	Properties	Qty	Price	Footprint

Copyright © 2016, Texas Instruments Incorporated   1   ti.com/webench

WEBENCH$^®$ Assembly Document   LM25119QPSQ/NOPB : LM25119QPSQ/
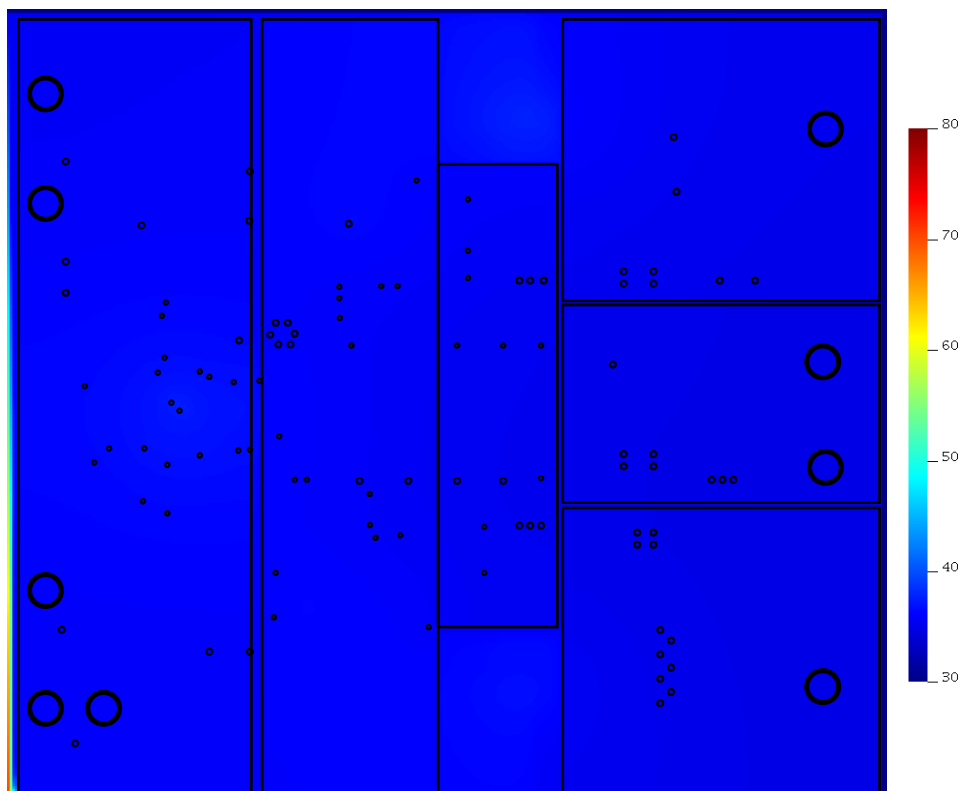NOPB 10.0V-12.0V to 5.00V @ 1.0A   August 24, 2016 01:50:18 GMT-07:00

Thermal Images

Thermal Top Image

Thermal Bottom Image

WEBENCH® Assembly Document   LM25119QPSQ/NOPB : LM25119QPSQ/
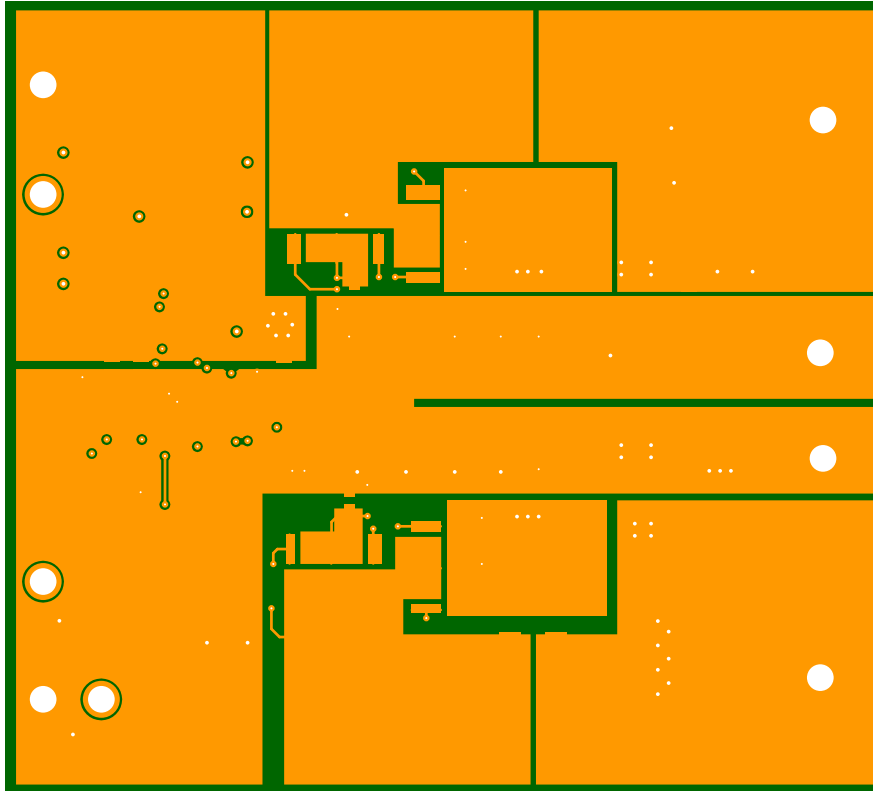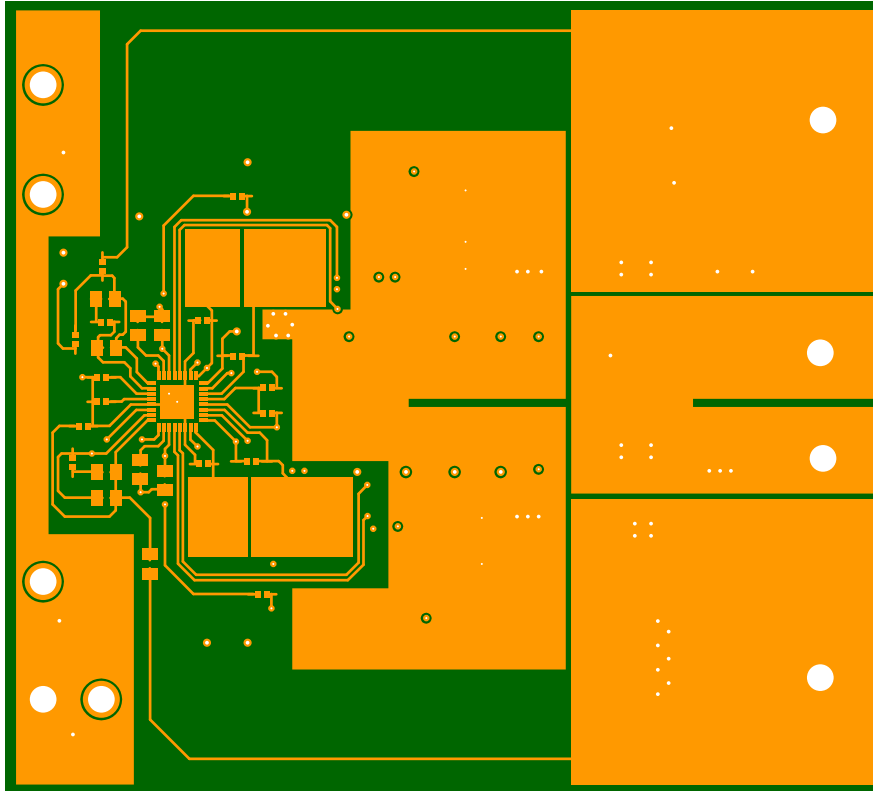NOPB 10.0V-12.0V to 5.00V @ 1.0A   August 24, 2016 01:50:18 GMT-07:00
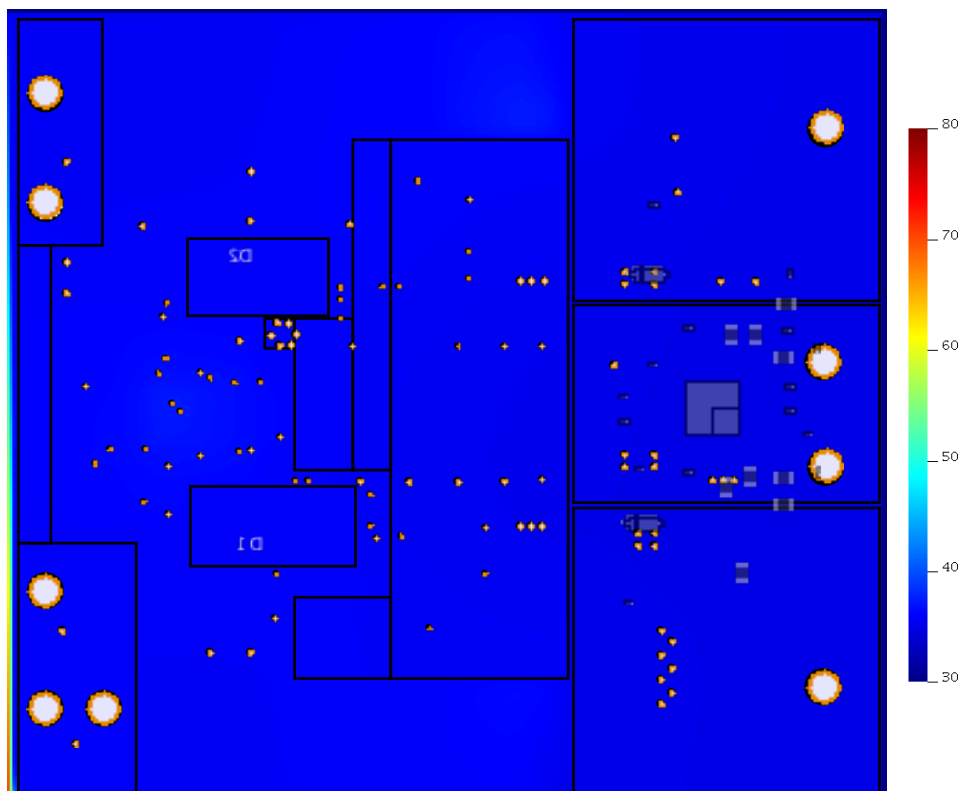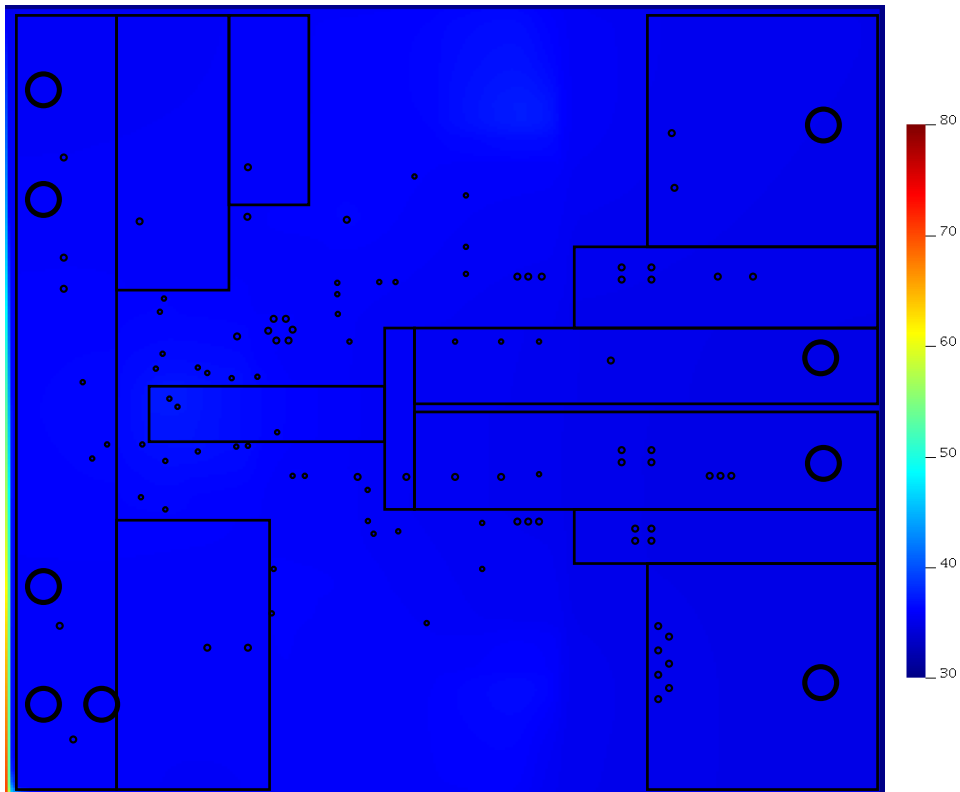
Thermal MID1 Image

Thermal MID2 Image

PCB Top Image

PCB Bottom Image

WEBENCH® Assembly Document   LM25119QPSQ/NOPB : LM25119QPSQ/
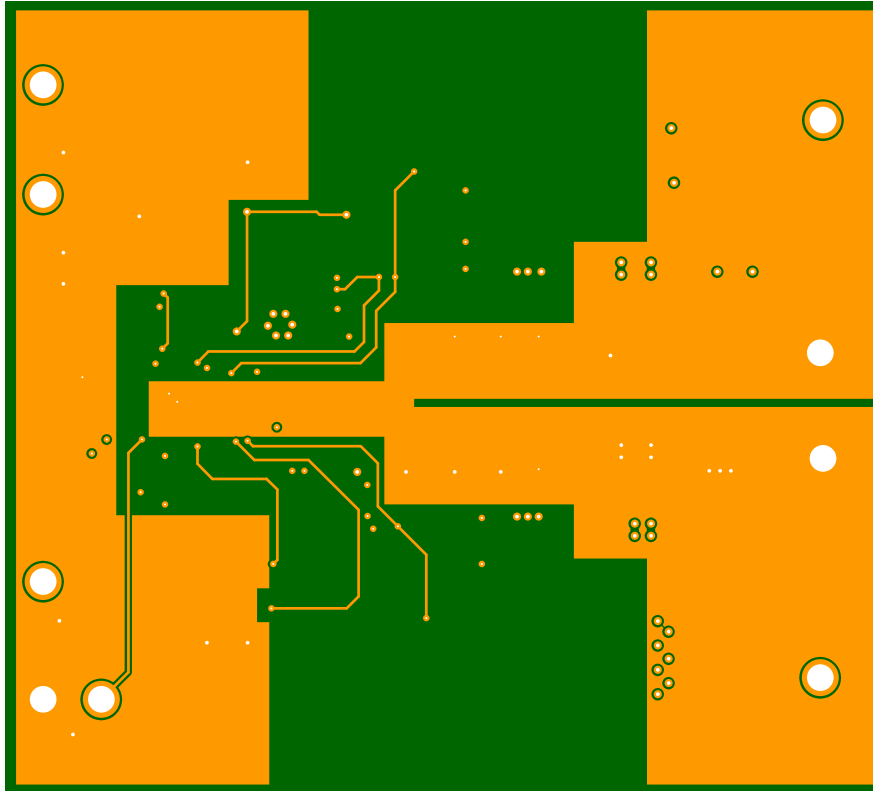NOPB 10.0V-12.0V to 5.00V @ 1.0A   August 24, 2016 01:50:18 GMT-07:00
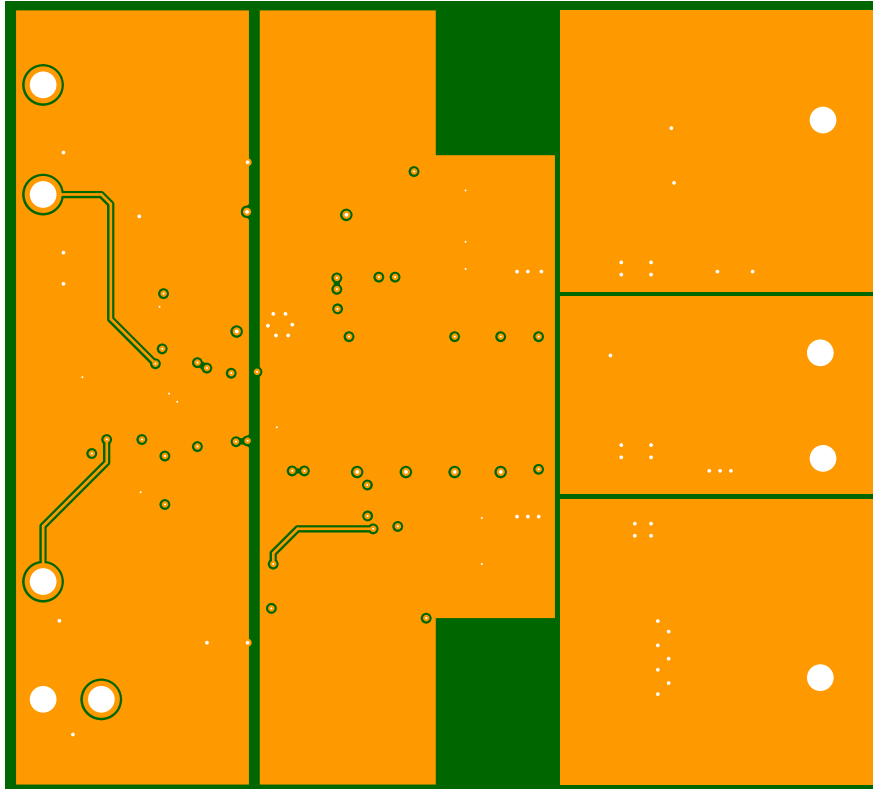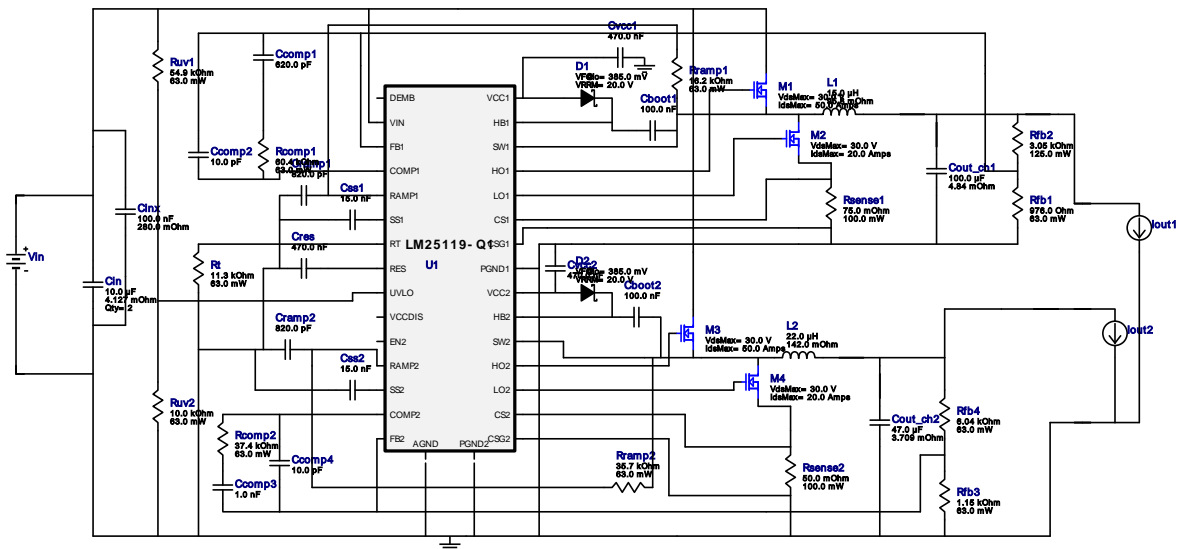
PCB MID1 Image

PCB MID2 Image

Schematic

Design Assistance

1. Outline The LM5119 is a dual synchronous buck controller intended for step-down regulator applications from a high voltage or widely varying input supply. The control method is based upon current mode control utilizing an emulated current ramp. Current mode control provides inherent line feed-forward, cycle-by-cycle current limiting and ease of loop compensation. The use of an emulated control ramp reduces noise sensitivity of the pulse-width modulation circuit, allowing reliable control of very small duty cycles necessary in high input voltage applications. Sequencing the 2 outputs The LM(2)5119 contains an enable function allowing shutdown control of channel2, independent of channel1. If the EN2 pin is pulled below 2.0V, channel2 enters shutdown mode. If the EN2 input is greater than 2.5V, channel2 returns to normal operation. Diode Emulation A fully synchronous buck regulator implemented with a freewheel MOSFET rather than a diode has the capability to sink current from the output in certain conditions such as light load, over-voltage or pre-bias startup. The LM(2)5119 provides a diode emulation feature that can be enabled to prevent reverse (drain to source) current flow in the low side free-wheel MOSFET.

2. **LM25119-Q1** Product Folder : http://www.ti.com/product/LM25119Q : contains the data sheet and other resources.