

VinMin = 10.0V VinMax = 17.5V Vout = 25.2V Iout = 4.0A Device = TPS43060RTER
Topology = Boost
Created = 9/18/16 11:09:12 PM
BOM Cost = \$5.53
Total Pd = 5.29W
Footprint = 666.0 mm²
BOM Count = 26
tSim Id = 1

WEBENCH [®] Thermal Simulation Report

Design : $3943919/57 \ TPS43060RTER$ TPS43060RTER 10.0V-17.5V to 25.20V @ 4.0A

Operating Condition

Name	Value		
VIN_OP	10.0V		
IOUT_OP	4.0A		

Ambient Temperature

Name	Temperature				
Ambient_plus_Z	30.0				
Ambient_minus_Z	30.0				

Air Flow

Name	Direction
Flow_Type	Convection
Flow_Rate	0.0LFM
Flow_Direction	Top to Bottom

Edge Temperature

Name	Temperature	Thermal Type			
Edge_plus_X (Right)		Insulated			
Edge_minus_X (Left)		Insulated			
Edge_plus_Y (Top)		Insulated			
Edge_minus_Y (Bottom)		Insulated			

My Comments

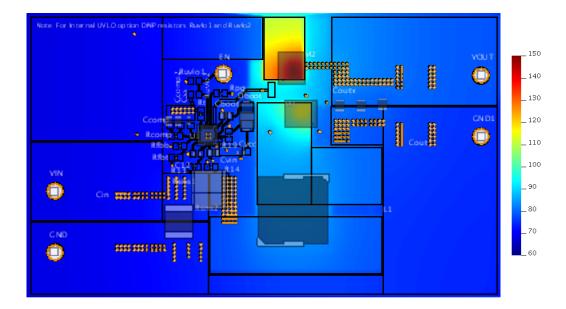
No comments

BOM

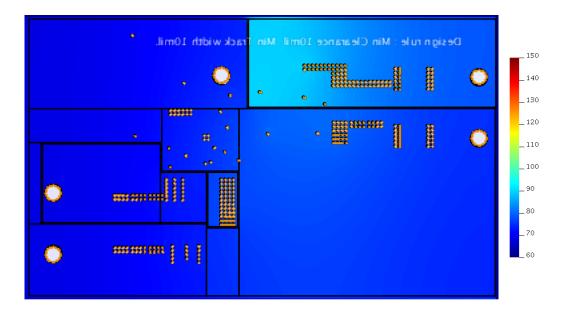
Component Name(s)	Part Number	Max Temp	Power Dissipation	Manufacture	Properties	Qty	Price	Footprint
Rsns1	PMR100HZPFU8L00	77°C	0.218W	Rohm		1	\$0.16	2512 43.16 mm ²
pcb_bottom		91°C						
M1	CSD18504Q5A	115°C	1.346W	Texas Instruments	VdsMax=40.0V IdsMax=50.0Amps	1	\$0.37	TRANS_NexFET_Q5A
								55.2 mm ²
M2 CSD1850	CSD18504Q5A	148°C	1.887W	Texas Instruments	VdsMax=40.0V ldsMax=50.0Amps	1	\$0.37	•
								TRANS_NexFET_Q5A 55.2 mm ²

Component Name(s)	Part Number	Max Temp	Power Dissipation	Manufacture	Properties	Qty	Price	Footprint
L1	SRP1270-4R7M	85°C	1.527W	Bourns	L=4.7E-6H DCR=0.0112Ohm	1	\$0.6	
								SRP1270 246.49 mm ²
Rsns2	PMR100HZPFU8L00	77°C	0.218W	Rohm		1	\$0.16	
								2512 43.16 mm ²
Cin	KCM55WR7YA336MH01K	73°C	0.00W	MuRata	VDC=35.0V ESR=0.0Ohm IRMS=0.0A Cap=3.3E-5F	1	\$1.51	KCM55W 59.13 mm ²
Cout	GRM32ER71J106KA12L	81°C	0.00W	MuRata	VDC=63.0V ESR=0.0Ohm IRMS=0.0A Cap=1.0E-5F	3	\$0.27	1210_280 14.7 mm ²
U1	TPS43060RTER	76°C	0.095W	Texas Instruments		1	\$1.25	S-PVQFN-N16 16.81 mm ²
pcb_top		148°C						

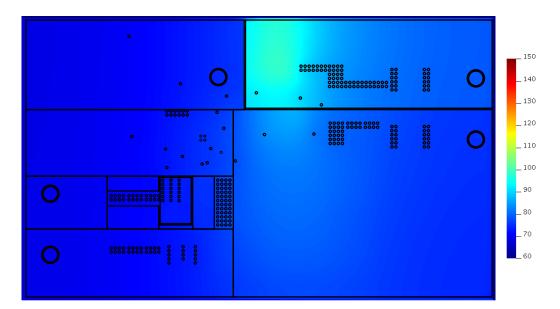
Thermal Images



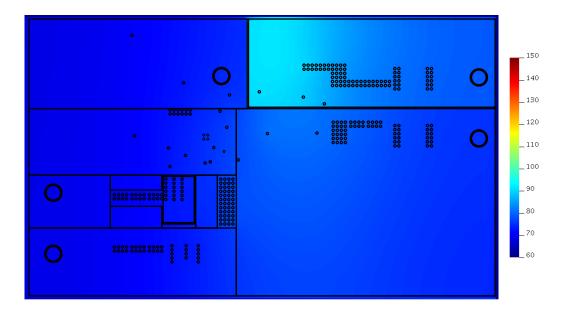
Thermal Top Image



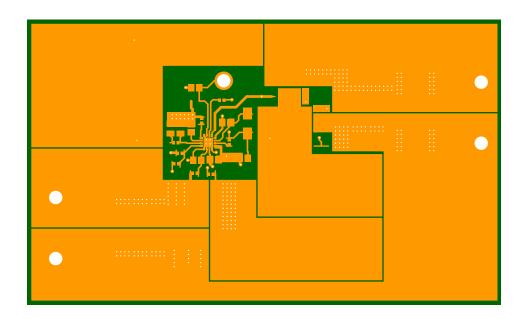
Thermal Bottom Image



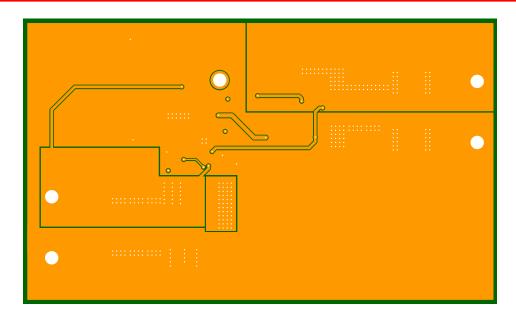
Thermal MID1 Image



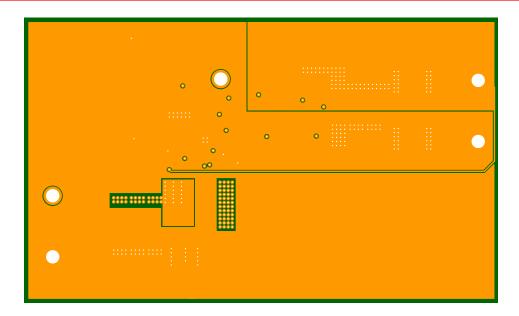
Thermal MID2 Image



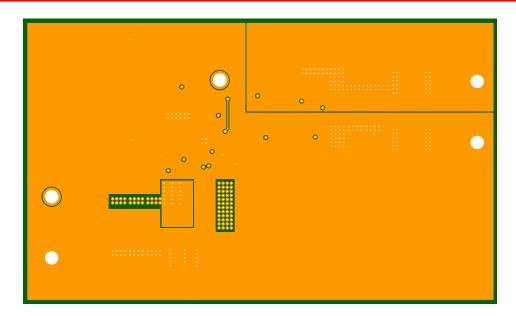
PCB Top Image



PCB Bottom Image

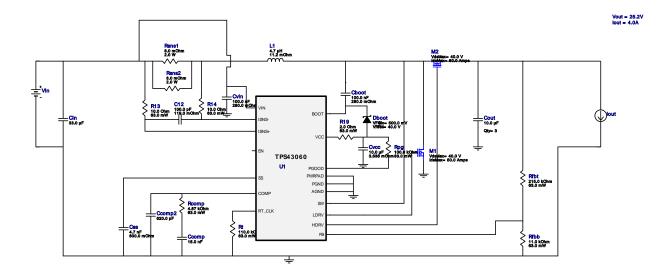


PCB MID1 Image



PCB MID2 Image

Schematic



Design Assistance

- 1. Feature Highlights: Low Quiescent Current Boost Controller, Wide Vin Range 4.5V to 38V Vin, 58V Vout, 7.5V Gate Drive optimized for standard MOSFET Thresholds Thermal Shutdown
- 2. TPS43060 Product Folder: http://www.ti.com/product/TPS43060: contains the data sheet and other resources.

Texas Instruments' WEBENCH simulation tools attempt to recreate the performance of a substantially equivalent physical implementation of the design. Simulations are created using Texas Instruments' published specifications as well as the published specifications of other device manufacturers. While Texas Instruments does update this information periodically, this information may not be current at the time the simulation is built. Texas Instruments does not warrant the accuracy or completeness of the specifications or any information contained therein. Texas Instruments does not warrant that any designs or recommended parts will meet the specifications you entered, will be suitable for your application or fit for any particular purpose, or will operate as shown in the simulation in a physical implementation. Texas Instruments does not warrant that the designs are production worthy.

You should completely validate and test your design implementation to confirm the system functionality for your application prior to production.

Use of Texas Instruments' WEBENCH simulation tools is subject to Texas Instruments' Site Terms and Conditions of Use. Prototype boards based on WEBENCH created designs are provided AS IS without warranty of any kind for evaluation and testing purposes and are subject to the terms of the Evaluation License Agreement.