

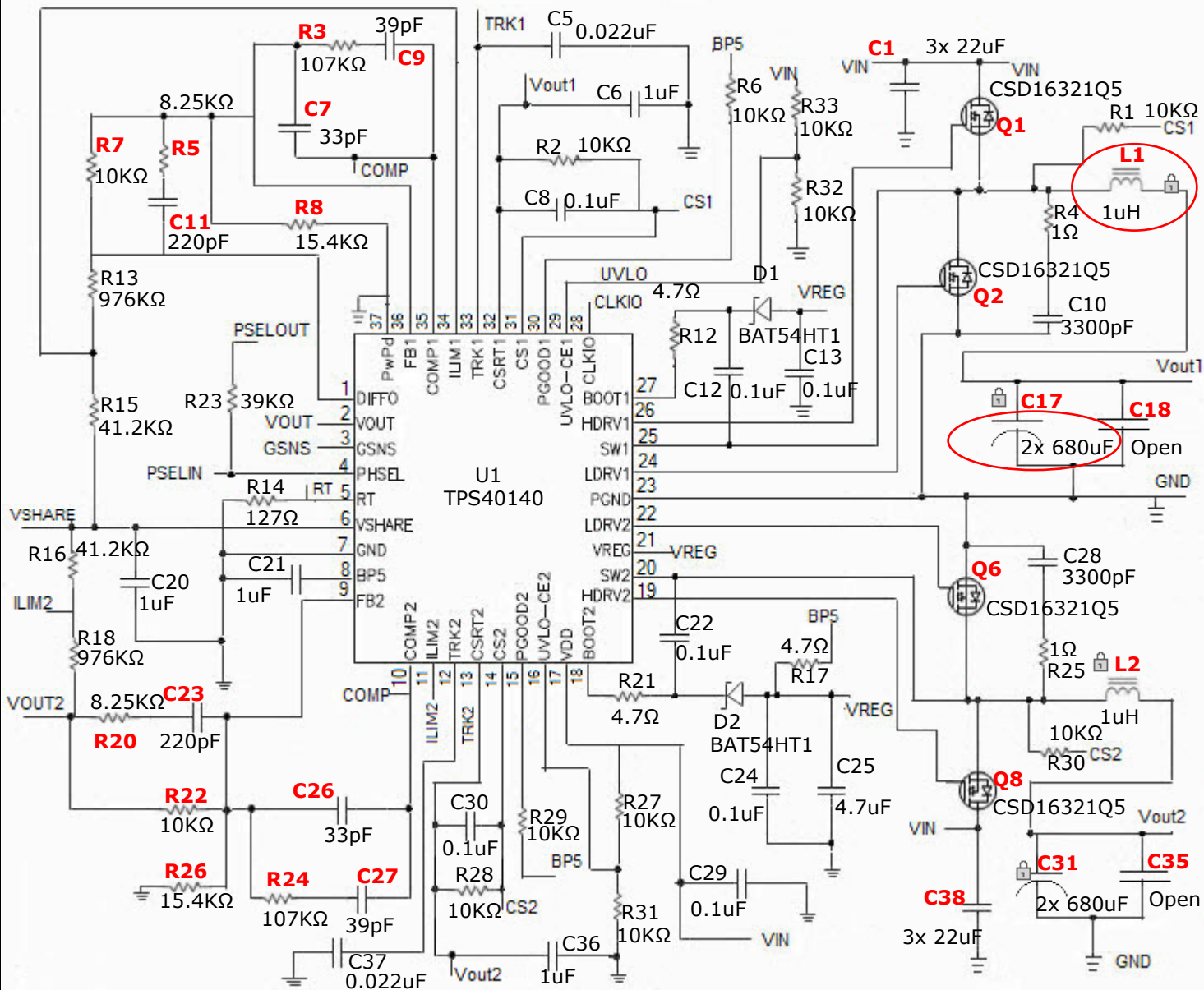
SwitcherPro Design Report Schematic

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A

Vout2: 1.15V **Iout2:** 22A



SwitcherPro Design Report

Analysis - Main

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A

Parameter Units-Symbol	User Input Minimum	User Input Nominal	User Input Maximum	Default Input Minimum	Default Input Nominal	Default Input Maximum	Calculated Minimum	Calculated Nominal	Calculated Maximum
Input Voltage Volts - V	10.00	-	14.00	-	-	-	-	-	-
Input Ripple mVp-p - mVp-p	-	-	-	-	-	280	-	-	225.9
UVLO(Start) Volts - V	-	-	-	-	-	-	-	-	-
UVLO(Stop) Volts - V	-	-	-	-	-	-	-	0.50	-
Switching Frequency KHz - KHz	-	-	-	-	300	-	-	-	-
Slow Start ms - ms	-	-	-	-	8.00	-	-	-	-
Estimated PCB Area mm ² - mm ²	-	-	-	-	-	-	-	2470	-
Max Component Height mm - mm	-	-	-	-	-	25	-	-	13

SwitcherPro Design Report

Analysis - Output1

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A

Parameter Units-Symbol	User Input Minimum	User Input Nominal	User Input Maximum	Default Input Minimum	Default Input Nominal	Default Input Maximum	Calculated Minimum	Calculated Nominal	Calculated Maximum
Output Voltage Volts - V	-	1.150	-	-	-	-	1.088	-	1.222
Output Ripple mVp-p - mVp-p	-	-	-	-	-	23	-	-	14.1
Output Current Amps - A	-	-	22.000	0.001	-	-	-	-	-
Inductor Peak to Peak Current Amps - A	-	-	-	-	-	-	4.503	-	4.692
Current Limit Threshold Amps - A	-	-	-	-	10.000	-	-	-	-
Gain Margin dB - dB	-	-	-	-10	-	-	-	-36	-
Phase Margin Deg. - Deg.	-	-	-	60	-	-	-	62	-
Upper FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Lower FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Duty Cycle % - %	-	-	-	-	-	-	8.8	-	12.4
On Time Min (switch) ns - ns	-	-	-	-	-	-	245.8	-	516.1
Cross Over Frequency KHz - KHz	-	-	-	-	-	-	-	58	-

SwitcherPro Design Report

Analysis - Output2

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A

Parameter Units-Symbol	User Input Minimum	User Input Nominal	User Input Maximum	Default Input Minimum	Default Input Nominal	Default Input Maximum	Calculated Minimum	Calculated Nominal	Calculated Maximum
Output Voltage Volts - V	-	1.150	-	-	-	-	1.088	-	1.222
Output Ripple mVp-p - mVp-p	-	-	-	-	-	10	-	-	14.1
Output Current Amps - A	-	-	22.000	0.001	-	-	-	-	-
Inductor Peak to Peak Current Amps - A	-	-	-	-	-	-	4.503	-	4.692
Current Limit Threshold Amps - A	-	-	-	-	10.000	-	-	-	-
Gain Margin dB - dB	-	-	-	-10	-	-	-	-36	-
Phase Margin Deg. - Deg.	-	-	-	60	-	-	-	62	-
Upper FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Lower FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Duty Cycle % - %	-	-	-	-	-	-	8.8	-	12.4
On Time Min (switch) ns - ns	-	-	-	-	-	-	245.8	-	516.1
Cross Over Frequency KHz - KHz	-	-	-	-	-	-	-	58	-

SwitcherPro Design Report Stress Results

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A

Device	Rated Voltage	Calculated Voltage	Rated Current (RMS)	Calculated Current (RMS)	Error Message	Power	Calculated Max Temp
C1 (High Freq. Input Cap)	25V	14.1V	10A	2.42A	-	35mW	-
C17 (Bulk Output Cap)	2.5V	1.16V	5.6A	0.68A	-	6mW	-
L1 (Output Inductor)	-	-	30A	22A	-	875mW	-
Q1 (Power Switch)	25V	14.1V	100A	7.76A	-	1.1W	66°C
Q2 (Sync. Rectifier)	25V	14.1V	100A	21A	-	1.1W	65°C
Rsns (Current Sense Resistor)	-	-	-	0A	-	0W	-
C38 (High Freq. Input Cap)	25V	14V	10A	2.42A	-	35mW	-
C31 (Bulk Output Cap)	2.5V	1.15V	5.6A	0.68A	-	6mW	-
L2 (Output Inductor)	-	-	30A	22A	-	875mW	-
Q8 (Power Switch)	25V	14V	100A	7.76A	-	1.1W	66°C
Q6 (Sync. Rectifier)	25V	14V	100A	21A	-	1.1W	65°C
Rsns2 (Current Sense Resistor)	-	-	-	0A	-	0W	-

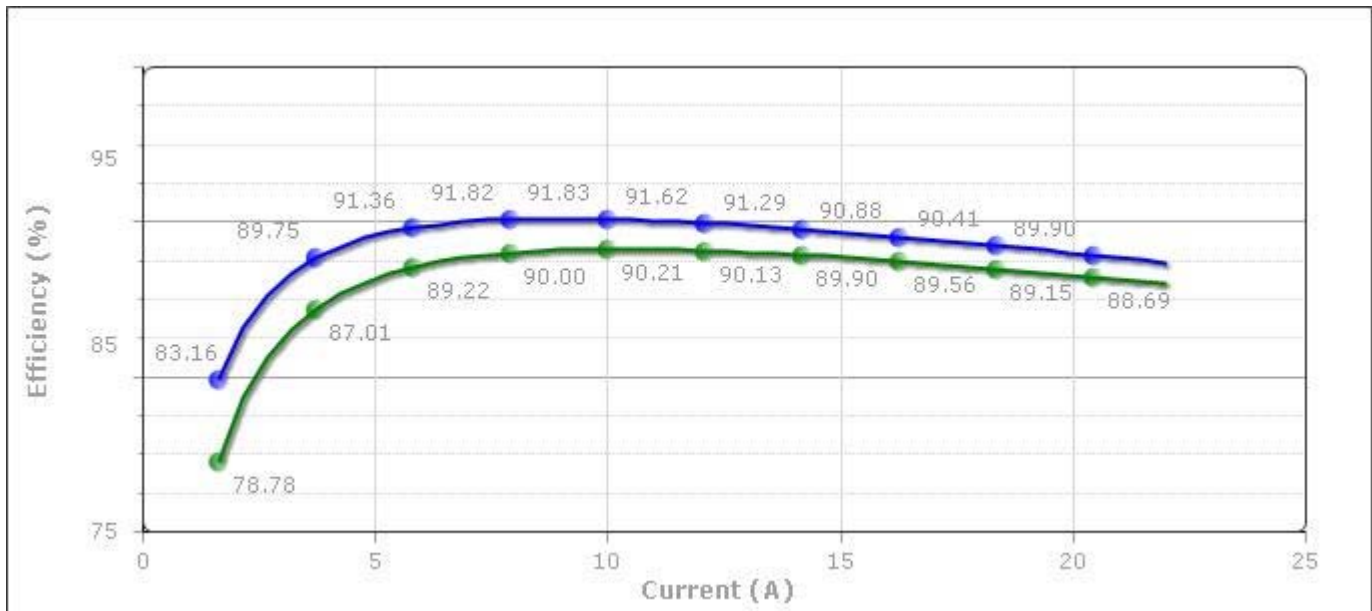
SwitcherPro Design Report

Efficiency - Output1

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A



— Efficiency For Vin Max
— Efficiency For Vin Min

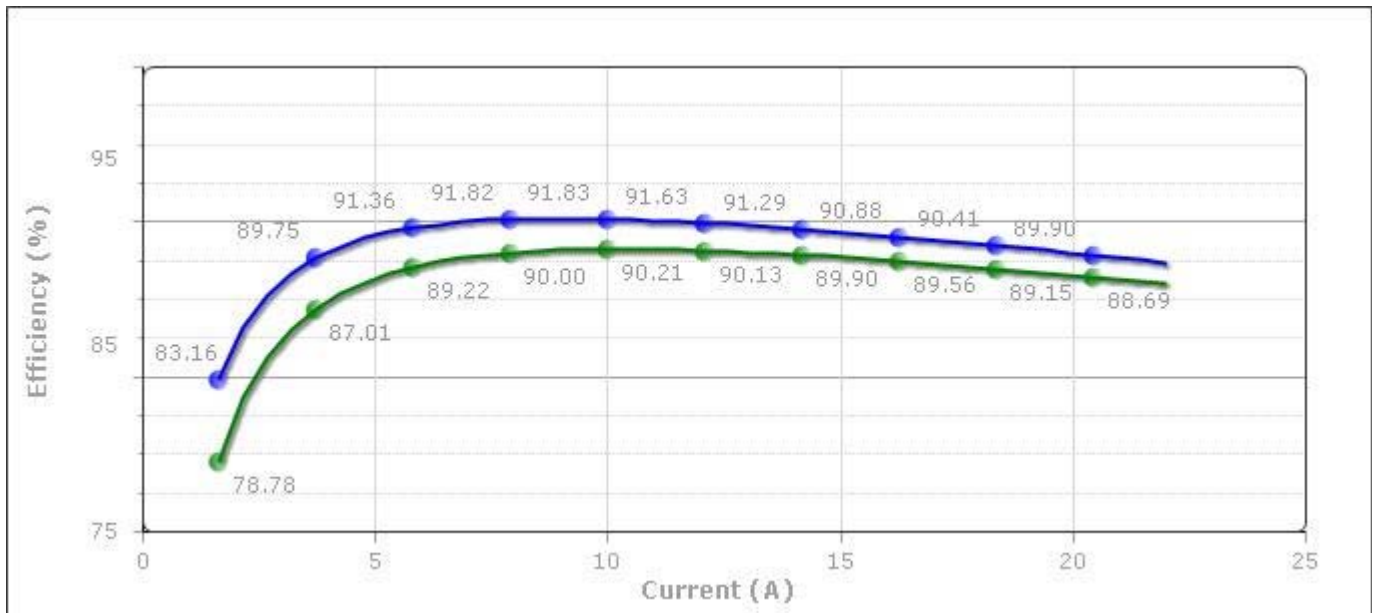
SwitcherPro Design Report

Efficiency - Output2

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A



— Efficiency For Vin Max
— Efficiency For Vin Min

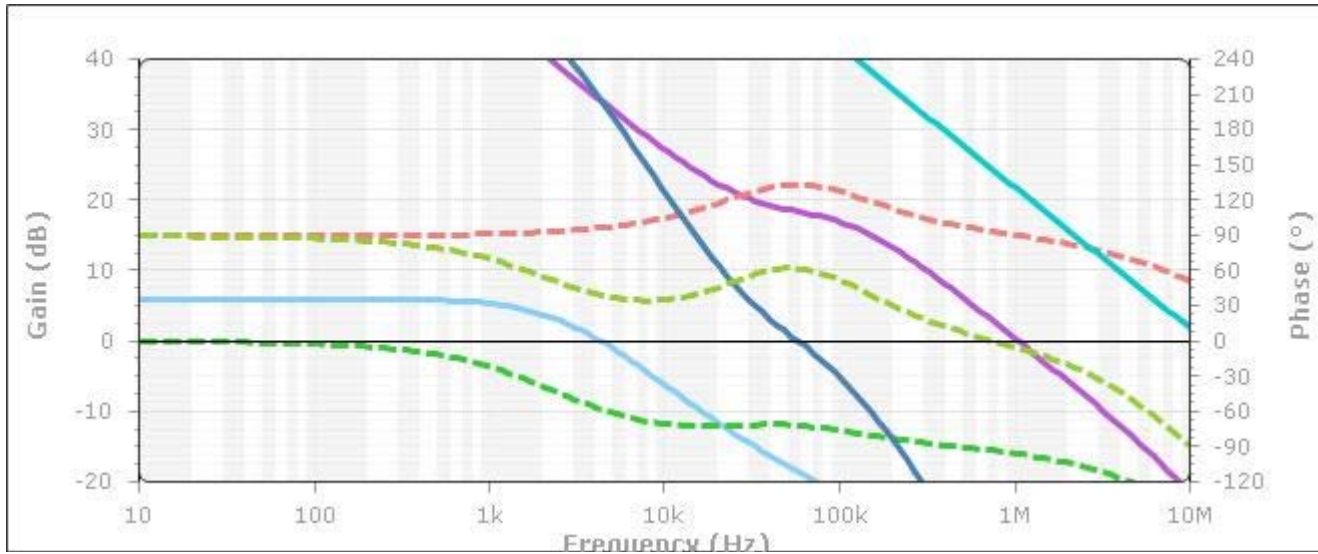
SwitcherPro Design Report

Loop Response - Output1

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A



- Power Stage Gain
- Power Stage Phase
- Compensation Gain
- Compensation Phase
- Error Amp Gain
- Total Gain
- Total Phase

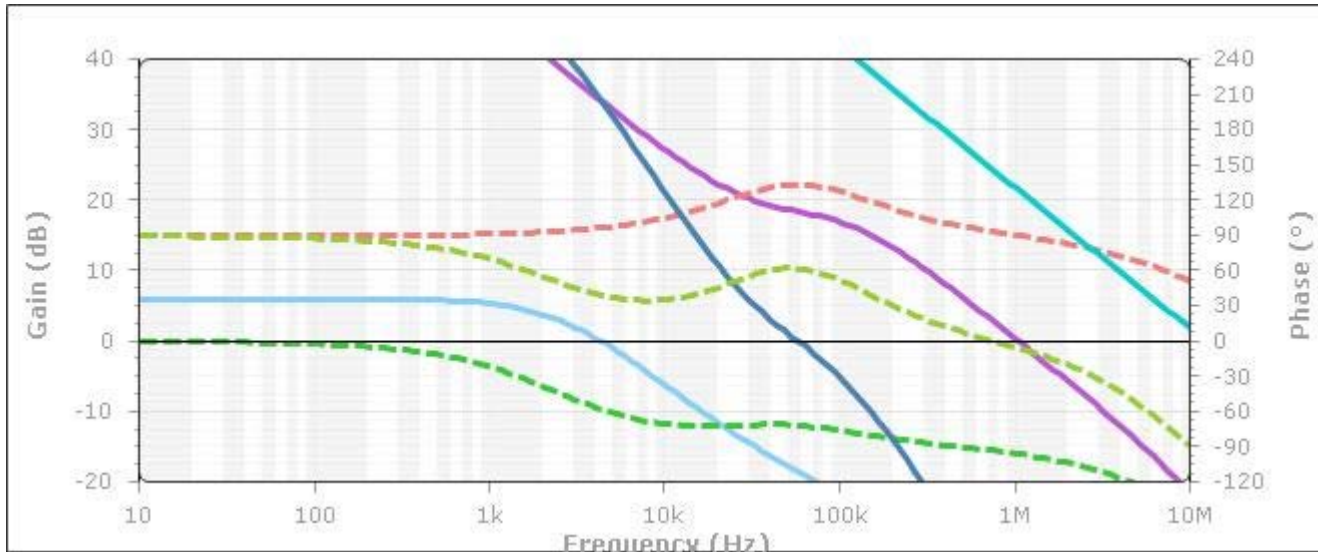
SwitcherPro Design Report

Loop Response - Output2

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A



- Power Stage Gain
- Power Stage Phase
- Compensation Gain
- Compensation Phase
- Error Amp Gain
- Total Gain
- Total Phase

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 22A **Vout2:** 1.15V **Iout2:** 22A

Name	Quantity	Part Number	Description	Manufacturer	Package	Area(mm ²)	Height(mm)
C1	3	GRM32ER71E226KE15L	Capacitor, 8, 22uF, 25V, 10%	Murata Manufacturing	1210	8	2
C10	1	Standard	Capacitor, Ceramic, 3300pF, 63V, 10%	Standard	2820	36	3
C11	1	Standard	Capacitor, Ceramic, 220pF, 4V, 20%	Standard	0603	2	1
C12	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C13	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C17	2	2R5TPD680M6	Capacitor, POSCAP, 680uF, 2.5V, 20%	SANYO Electric	TPD-D4D	31	3
C20	1	Standard	Capacitor, Ceramic, 1uF, 10V, 10%	Standard	0603	2	1
C21	1	Standard	Capacitor, Ceramic, 1uF, 10V, 1%	Standard	0603	2	1
C22	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C23	1	Standard	Capacitor, Ceramic, 220pF, 4V, 20%	Standard	0603	2	1
C24	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C25	1	Standard	Capacitor, Ceramic, 4.7uF, 10V, 10%	Standard	0805	3	1
C26	1	Standard	Capacitor, Ceramic, 33pF, 4V, 20%	Standard	0603	2	1
C27	1	Standard	Capacitor, Ceramic, 39pF, 4V, 20%	Standard	0603	2	1
C28	1	Standard	Capacitor, Ceramic, 3300pF, 63V, 10%	Standard	2820	36	3
C29	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C30	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C31	2	2R5TPD680M6	Capacitor, POSCAP, 680uF, 2.5V, 20%	SANYO Electric	TPD-D4D	31	3
C36	1	Standard	Capacitor, Ceramic, 1uF, 20V, 10%	Standard	0603	2	1
C37	1	Standard	Capacitor, Ceramic, 0.022uF, 20V, 1%	Standard	0805	3	1
C38	3	GRM32ER71E226KE15L	Capacitor, 8, 22uF, 25V, 10%	Murata Manufacturing	1210	8	2
C5	1	Standard	Capacitor, Ceramic, 0.022uF, 20V, 1%	Standard	0805	3	1
C6	1	Standard	Capacitor, Ceramic, 1uF, 20V, 10%	Standard	0603	2	1

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V

VinMax: 14V

Vout: 1.15V

Iout: 22A

Vout2: 1.15V

Iout2: 22A

Name	Quantity	Part Number	Description	Manufacturer	Package	Area(mm ²)	Height(mm)
C7	1	Standard	Capacitor, Ceramic, 33pF, 4V, 20%	Standard	0603	2	1
C8	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C9	1	Standard	Capacitor, Ceramic, 39pF, 4V, 20%	Standard	0603	2	1
D1	1	BAT54HT1	Diode, Schottky, 30V, 0.2A	On Semiconductor	SOD-323	2	0
D2	1	BAT54HT1	Diode, Schottky, 30V, 0.2A	On Semiconductor	SOD-323	2	0
L1	1	SER2013-102	Inductor, 1uH, 30A, 1.8mΩ	Coilcraft	Standard	392	12
L2	1	SER2013-102	Inductor, 1uH, 30A, 1.8mΩ	Coilcraft	Standard	392	12
Q1	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
Q2	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
Q6	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
Q8	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
R1	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R12	1	Standard	Resistor, SurfaceMount, 4.7Ω, 100mW, 5%	Standard	0603	2	1
R13	1	Standard	Resistor, SurfaceMount, 976KΩ, 100mW, 1%	Standard	0603	2	1
R14	1	Standard	Resistor, SurfaceMount, 127Ω, 100mW, 1%	Standard	0603	2	1
R15	1	Standard	Resistor, SurfaceMount, 41.2KΩ, 100mW, 1%	Standard	0603	2	1
R16	1	Standard	Resistor, SurfaceMount, 41.2KΩ, 100mW, 1%	Standard	0603	2	1
R17	1	Standard	Resistor, SurfaceMount, 4.7Ω, 100mW, 5%	Standard	0603	2	1
R18	1	Standard	Resistor, SurfaceMount, 976KΩ, 100mW, 1%	Standard	0603	2	1
R2	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R20	1	Standard	Resistor, SurfaceMount, 8.25KΩ, 100mW, 1%	Standard	0603	2	1
R21	1	Standard	Resistor, SurfaceMount, 4.7Ω, 100mW, 5%	Standard	0603	2	1
R22	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R23	1	Standard	Resistor, SurfaceMount, 39KΩ, 100mW, 1%	Standard	0603	2	1

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dualoutput_1.15v@22a

Part: TPS40140

VinMin: 10V

VinMax: 14V

Vout: 1.15V

Iout: 22A

Vout2: 1.15V **Iout2:** 22A

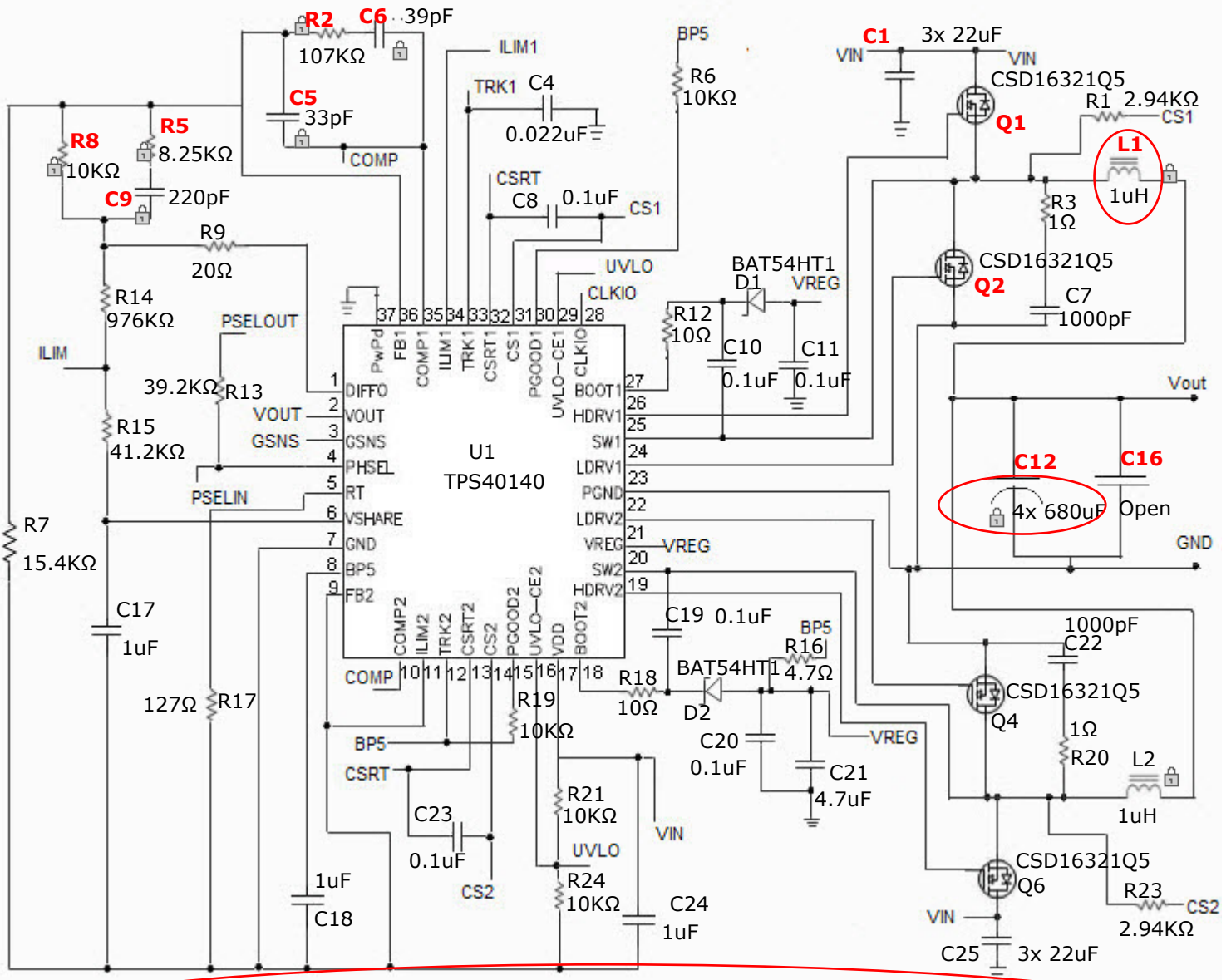
Name	Quantity	Part Number	Description	Manufacturer	Package	Area(mm ²)	Height(mm)
R24	1	Standard	Resistor, SurfaceMount, 107K Ω , 62mW, 1%	Standard	0603	2	1
R25	1	Standard	Resistor, SurfaceMount, 1 Ω , 250mW, 1%	Standard	1210	8	1
R26	1	Standard	Resistor, SurfaceMount, 15.4K Ω , 100mW, 1%	Standard	0603	2	1
R27	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R28	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R29	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R3	1	Standard	Resistor, SurfaceMount, 107K Ω , 62mW, 1%	Standard	0603	2	1
R30	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R31	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R32	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R33	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R4	1	Standard	Resistor, SurfaceMount, 1 Ω , 250mW, 1%	Standard	1210	8	1
R5	1	Standard	Resistor, SurfaceMount, 8.25K Ω , 100mW, 1%	Standard	0603	2	1
R6	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R7	1	Standard	Resistor, SurfaceMount, 10K Ω , 100mW, 1%	Standard	0603	2	1
R8	1	Standard	Resistor, SurfaceMount, 15.4K Ω , 100mW, 1%	Standard	0603	2	1
Rsns	0	Standard	Resistor, SurfaceMount, 1.6m Ω , 100mW, 1%	Standard	0603	2	1
Rsns2	0	Standard	Resistor, SurfaceMount, 1.6m Ω , 100mW, 1%	Standard	0603	2	1
U1	1	TPS40140	IC, Controller, 36 pins	Texas Instruments, Inc.	PQFP	45	1

SwitcherPro Design Report Schematic

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2



⚠ Gain margin for this design, 5.9dB, is lower than the minimum recommended value! Minimum recommended value for this design is 6dB. Low gain warning!

SwitcherPro Design Report

Analysis - Main

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Parameter Units-Symbol	User Input Minimum	User Input Nominal	User Input Maximum	Default Input Minimum	Default Input Nominal	Default Input Maximum	Calculated Minimum	Calculated Nominal	Calculated Maximum
Input Voltage Volts - V	10.00	-	14.00	-	-	-	-	-	-
Input Ripple mVp-p - mVp-p	-	-	-	-	-	280	-	-	225.9
UVLO(Start) Volts - V	-	-	-	-	-	-	-	-	-
UVLO(Stop) Volts - V	-	-	-	-	-	-	-	0.50	-
Switching Frequency KHz - KHz	-	-	-	-	300	-	-	-	-
Slow Start ms - ms	-	-	-	-	8.00	-	-	-	-
Estimated PCB Area mm ² - mm ²	-	-	-	-	-	-	-	2283	-
Max Component Height mm - mm	-	-	-	-	-	25	-	-	13

SwitcherPro Design Report

Analysis - Output1

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Parameter Units-Symbol	User Input Minimum	User Input Nominal	User Input Maximum	Default Input Minimum	Default Input Nominal	Default Input Maximum	Calculated Minimum	Calculated Nominal	Calculated Maximum
Output Voltage Volts - V	-	1.150	-	-	-	-	1.088	-	1.222
Output Ripple mVp-p - mVp-p	-	-	-	-	-	23	-	-	7.0
Output Current Amps - A	-	-	22.000	0.001	-	-	-	-	-
Inductor Peak to Peak Current Amps - A	-	-	-	-	-	-	4.503	-	4.692
Current Limit Threshold Amps - A	-	-	-	-	10.000	-	-	-	-
Gain Margin dB - dB	-	-	-	-10	-	-	-	-6	-
Phase Margin Deg. - Deg.	-	-	-	60	-	-	-	50	-
Upper FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Lower FET RDSon mOhms - mΩ	-	-	-	-	-	-	2	-	2
Duty Cycle % - %	-	-	-	-	-	-	8.8	-	12.4
On Time Min (switch) ns - ns	-	-	-	-	-	-	245.8	-	516.1
Cross Over Frequency KHz - KHz	-	-	-	-	-	-	-	52	-

SwitcherPro Design Report Stress Results

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Device	Rated Voltage	Calculated Voltage	Rated Current (RMS)	Calculated Current (RMS)	Error Message	Power	Calculated Max Temp
C1 (High Freq. Input Cap)	25V	14.1V	10A	2.42A	-	35mW	-
C12 (Bulk Output Cap)	2.5V	1.16V	5.6A	0.34A	-	3mW	-
L1 (Output Inductor)	-	-	30A	22A	-	875mW	-
Q1 (Power Switch)	25V	14.1V	100A	7.76A	-	1.1W	66°C
Q2 (Sync. Rectifier)	25V	14.1V	100A	21A	-	1.1W	65°C
Rsns (Current Sense Resistor)	-	-	-	0A	-	0W	-
L2 (Output Inductor)	-	-	30A	22A	-	875mW	-
Q6 (Power Switch)	25V	14.1V	100A	7.76A	-	1.1W	66°C
Q4 (Sync. Rectifier)	25V	14.1V	100A	21A	-	1.1W	65°C
C25 (High Freq. Input Cap)	25V	14.1V	10A	2.42A	-	35mW	-

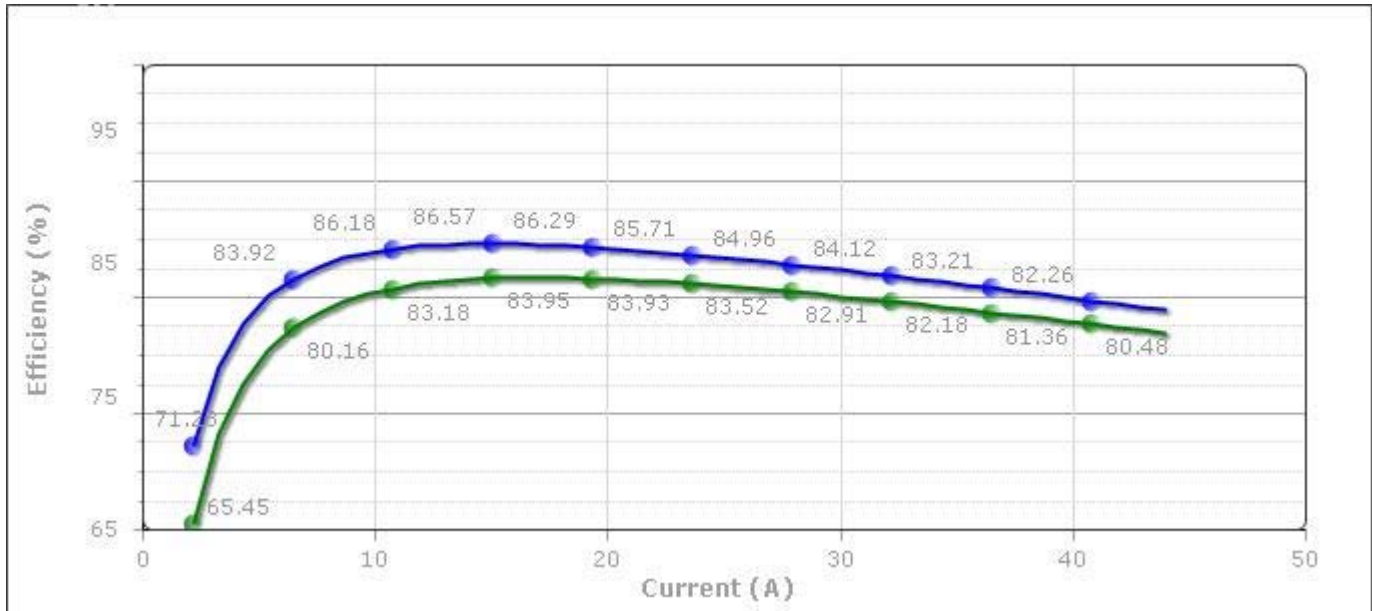
SwitcherPro Design Report

Efficiency

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2



— Efficiency For Vin Max
— Efficiency For Vin Min

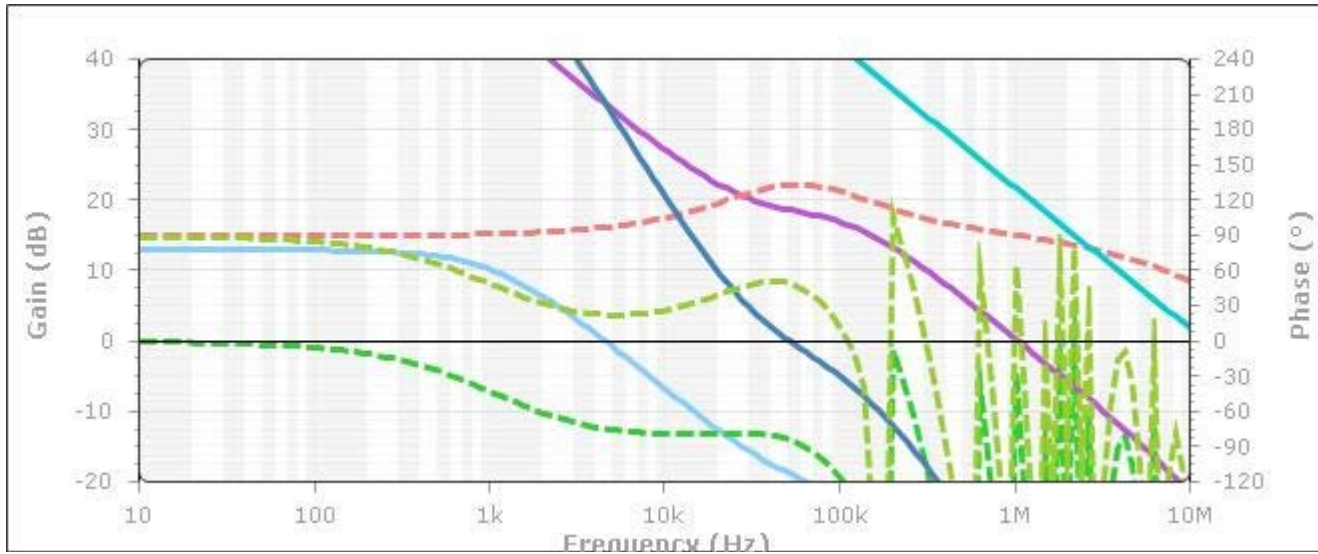
SwitcherPro Design Report

Loop Response

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2



- Power Stage Gain
- Power Stage Phase
- Compensation Gain
- Compensation Phase
- Error Amp Gain
- Total Gain
- Total Phase

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Name	Quantity	Part Number	Description	Manufacturer	Package	Area(mm ²)	Height(mm)
C1	3	GRM32ER71E226KE15L	Capacitor, 8, 22uF, 25V, 10%	Murata Manufacturing	1210	8	2
C10	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C11	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C12	4	2R5TPD680M6	Capacitor, POSCAP, 680uF, 2.5V, 20%	SANYO Electric	TPD-D4D	31	3
C17	1	Standard	Capacitor, Ceramic, 1uF, 20V, 10%	Standard	0603	2	1
C18	1	Standard	Capacitor, Ceramic, 1uF, 20V, 10%	Standard	0603	2	1
C19	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C20	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C21	1	Standard	Capacitor, Ceramic, 4.7uF, 10V, 10%	Standard	0805	3	1
C22	1	Standard	Capacitor, Ceramic, 1000pF, 2.5V, 20%	Standard	0603	2	1
C23	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C24	1	Standard	Capacitor, Ceramic, 1uF, 20V, 10%	Standard	0603	2	1
C25	3	GRM32ER71E226KE15L	Capacitor, 8, 22uF, 25V, 10%	Murata Manufacturing	1210	8	2
C4	1	Standard	Capacitor, Ceramic, 0.022uF, 20V, 1%	Standard	0805	3	1
C5	1	Standard	Capacitor, Ceramic, 33pF, 4V, 20%	Standard	0603	2	1
C6	1	Standard	Capacitor, Ceramic, 39pF, 4V, 20%	Standard	0603	2	1
C7	1	Standard	Capacitor, Ceramic, 1000pF, 2.5V, 20%	Standard	0603	2	1
C8	1	Standard	Capacitor, Ceramic, 0.1uF, 20V, 10%	Standard	0603	2	1
C9	1	Standard	Capacitor, Ceramic, 220pF, 4V, 20%	Standard	0603	2	1
D1	1	BAT54HT1	Diode, Schottky, 30V, 0.2A	On Semiconductor	SOD-323	2	0
D2	1	BAT54HT1	Diode, Schottky, 30V, 0.2A	On Semiconductor	SOD-323	2	0
L1	1	SER2013-102	Inductor, 1uH, 30A, 1.8mΩ	Coilcraft	Standard	392	12
L2	1	SER2013-102	Inductor, 1uH, 30A, 1.8mΩ	Coilcraft	Standard	392	12
Q1	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Name	Quantity	Part Number	Description	Manufacturer	Package	Area(mm ²)	Height(mm)
Q2	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
Q4	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
Q6	1	CSD16321Q5	Transistor, NFET, 25V, 100A, 3mΩ	Texas Instruments, Inc.	QFN 5x6	31	1
R1	1	Standard	Resistor, SurfaceMount, 2.94KΩ, 100mW, 1%	Standard	0603	2	1
R12	1	Standard	Resistor, SurfaceMount, 10Ω, 100mW, 1%	Standard	0603	2	1
R13	1	Standard	Resistor, SurfaceMount, 39.2KΩ, 100mW, 1%	Standard	0603	2	1
R14	1	Standard	Resistor, SurfaceMount, 976KΩ, 100mW, 1%	Standard	0603	2	1
R15	1	Standard	Resistor, SurfaceMount, 41.2KΩ, 100mW, 1%	Standard	0603	2	1
R16	1	Standard	Resistor, SurfaceMount, 4.7Ω, 100mW, 1%	Standard	0603	2	1
R17	1	Standard	Resistor, SurfaceMount, 127Ω, 100mW, 1%	Standard	0603	2	1
R18	1	Standard	Resistor, SurfaceMount, 10Ω, 100mW, 1%	Standard	0603	2	1
R19	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R2	1	Standard	Resistor, SurfaceMount, 107KΩ, 62mW, 1%	Standard	0603	2	1
R20	1	Standard	Resistor, SurfaceMount, 1Ω, 250mW, 1%	Standard	1210	8	1
R21	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R23	1	Standard	Resistor, SurfaceMount, 2.94KΩ, 100mW, 1%	Standard	0603	2	1
R24	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R3	1	Standard	Resistor, SurfaceMount, 1Ω, 250mW, 1%	Standard	1210	8	1
R5	1	Standard	Resistor, SurfaceMount, 8.25KΩ, 100mW, 1%	Standard	0603	2	1
R6	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R7	1	Standard	Resistor, SurfaceMount, 15.4KΩ, 50mW, 1%	Standard	0201	1	1
R8	1	Standard	Resistor, SurfaceMount, 10KΩ, 100mW, 1%	Standard	0603	2	1
R9	1	Standard	Resistor, SurfaceMount, 20Ω, 100mW, 10%	Standard	0603	2	1

SwitcherPro Design Report

Bill of Materials

Design Name: tps40140_dual phase_1.15v@44a

Part: TPS40140

VinMin: 10V **VinMax:** 14V **Vout:** 1.15V **Iout:** 44A **Phases:** 2

Name	Quantity	Part Number	Description	Manufacturer	Package Area(mm ²)	Height(mm)	
Rsns	0	Standard	Resistor, SurfaceMount, 1.6mΩ, 100mW, 1%	Standard	0603	2	1
U1	1	TPS40140	IC, Controller, 36 pins	Texas Instruments, Inc.	PQFP	45	1