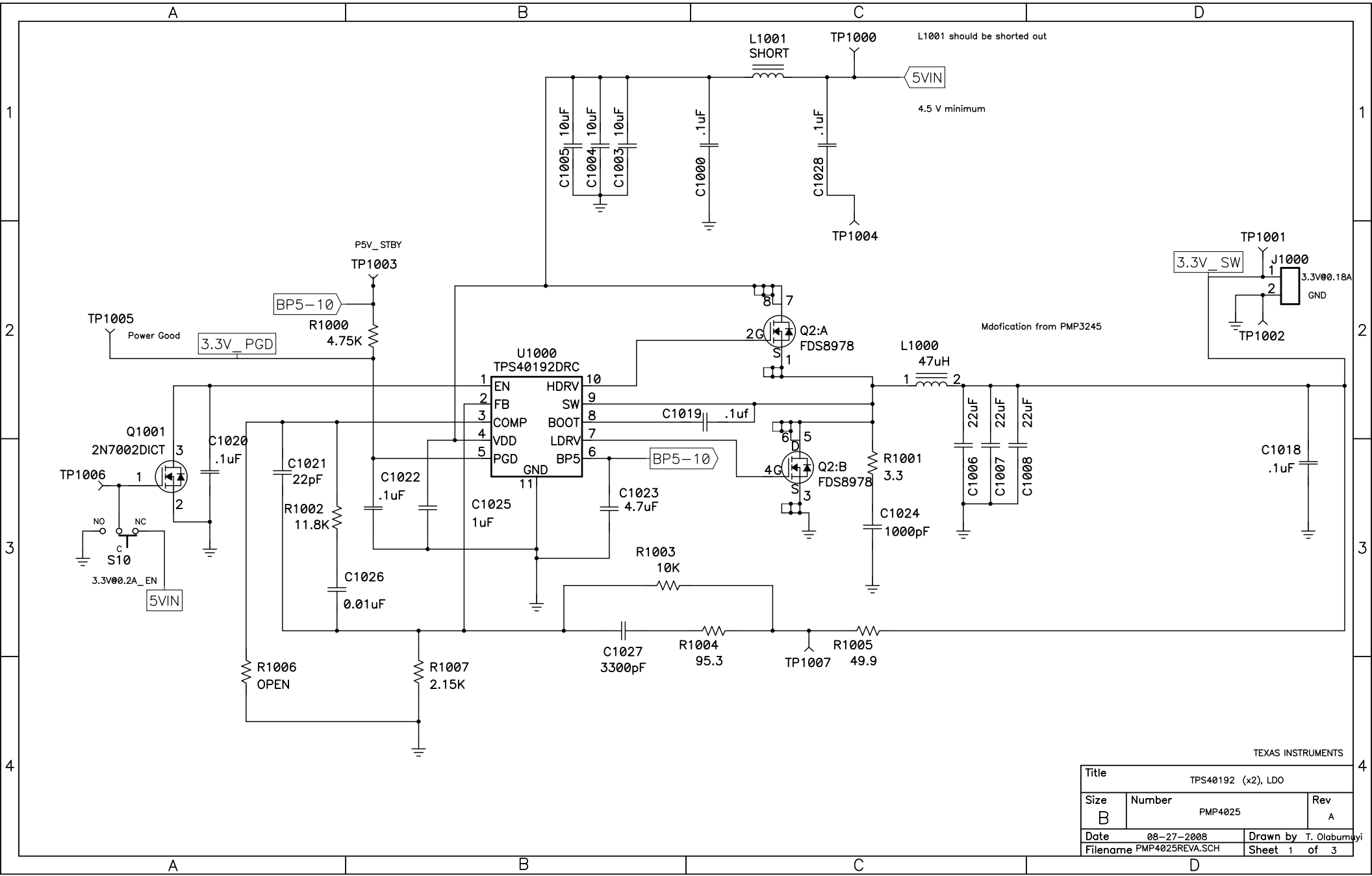
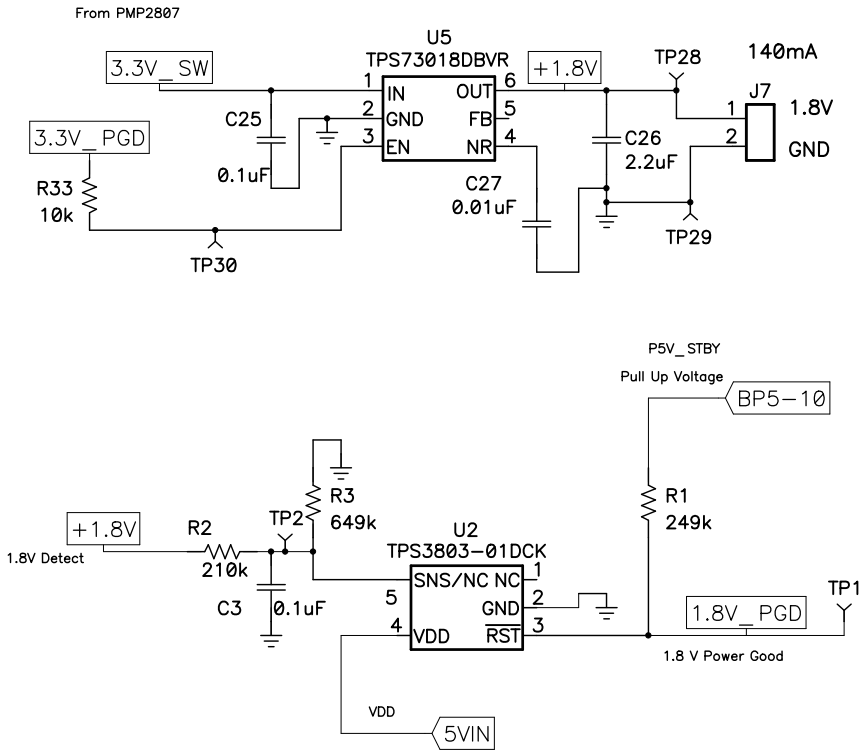
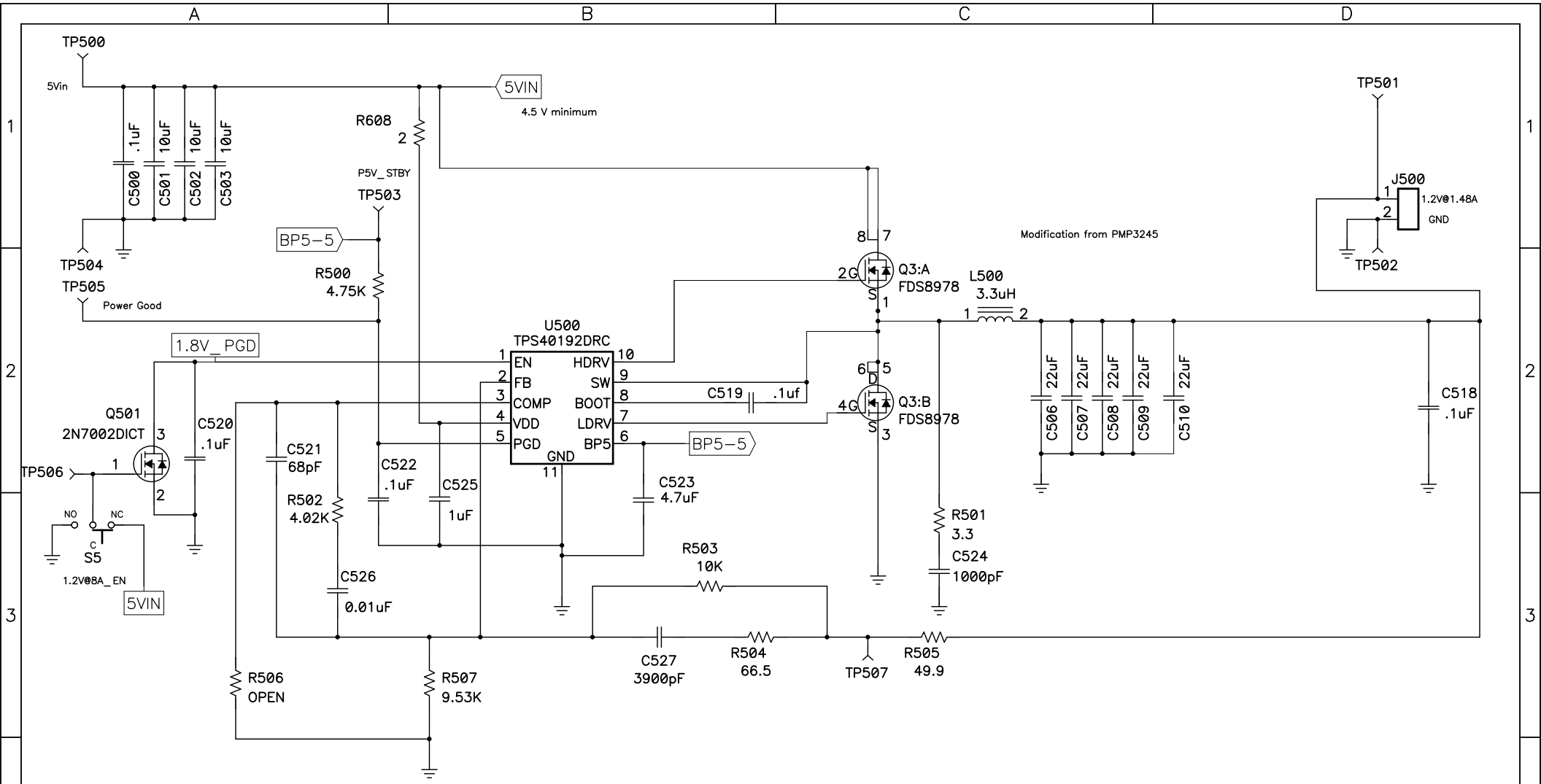

L1001
SHORT
TP1000
L1001 should be shorted out
5VIN
4.5 V minimum
C1005 10uF
C1004 10uF
C1003 10uF
C1000 .1uF
C1028 .1uF
TP1004
P5V_STBY
TP1003
BP5-10
R1000
4.75K
TP1005
Power Good
3.3V_PGD
U1000
TPS40192DRC
EN
FB
COMP
VDD
PGD
GND
HDRV
SW
BOOT
LDRV
BP5
Q2:A
FDS8978
Q2:B
FDS8978
L1000
47uH
Mdofication from PMP3245
TP1001
3.3V_SW
J1000
3.3V@0.18A
GND
TP1002
C1019 .1uf
C1018 .1uF
22uF
C1006
C1007
C1008
Q1001
2N7002DICT
TP1006
C1020 .1uF
C1021 22pF
R1002 11.8K
C1022 .1uF
C1025 1uF
C1023 4.7uF
R1001 3.3
C1024 1000pF
NO
NC
C
S10
3.3V@0.2A_EN
5VIN
C1026 0.01uF
R1003 10K
R1006 OPEN
R1007 2.15K
C1027 3300pF
R1004 95.3
TP1007
R1005 49.9
TEXAS INSTRUMENTS
Title
TPS40192 (x2), LDO
Size
B
Number
PMP4025
Rev
A
Date
08-27-2008
Drawn by
T. Olabumuyi
Filename
PMP4025REVA.SCH
Sheet 1 of 3



TEXAS INSTRUMENTS

Title: TPS40192 (x2), LDO		
Size: B	Number: PMP4025	Rev: A
Date: 08-27-2008		Drawn by: Olabumuyi
Filename: PMP4025REVA.SCH		Sheet 1 of 1



TEXAS INSTRUMENTS

Title	TPS40192 (x2), LDO	
Size B	Number PMP4025	Rev A
Date 08-27-2008	Drawn by T. Olabumuyi	
Filename PMP4025REVA.SCH	Sheet 3 of 3	

Filename: PMP4025REVA_bom.xls
Date: 09/17/2008

PMP4025REVA BOM

COUNT	RefDes	Value	Description	Size	Part Number	Mfr
8	C1000, C1018, C1020, C1022, C1028, C518, C520, C522	.1uF	Capacitor, Ceramic, 16V, X7R, 10%	0402	C1005X7R1C104K	TDK
3	C1003, C1004, C1005	10uF	Capacitor, Ceramic, 16V, X5R, 10%	0805	GRM21BR61C106KE15L	Murata
8	C1006, C1007, C1008, C506, C507, C508, C509, C510	22uF	Capacitor, Ceramic, 6.3V, X5R, 10%	0805	C2012X5R0J226K	TDK
2	C1019, C519	.1uf	Capacitor, Ceramic, 25V, X7R, 10%	0603	C1608X7R1E104K	TDK
1	C1021	22pF	Capacitor, Ceramic, 50V, COG, 5%	0603	C1608COG1H100D	TDK
2	C1023, C523	4.7uF	Capacitor, Ceramic, 10V, X5R, 10%	0805	C2012X5R1A475K	TDK
2	C1024, C524	1000pF	Capacitor, Ceramic, 50V, X7R, 10%	0603	C1608X7R1H102K	TDK
2	C1025, C525	1uF	Capacitor, Ceramic, 50V, X7R, 10%	0603	C1608X7R1H105K	TDK
1	C1026	0.01uF	Capacitor, Ceramic, 50V, X7R, 10%	0603	C1608X7R1H332K	TDK
1	C1027	3300pF	Capacitor, Ceramic, 50V, X7R, 10%	0603	C1608X7R1H102K	TDK
1	C25	0.1uF	Capacitor, Ceramic, 0.1-uF, 50-V, X7R, 15%	0603	Std	TDK
1	C26	2.2uF	Capacitor, Ceramic, 16V, X7R	0805	std	std
1	C27	0.01uF	Capacitor, Ceramic, 0.01uF, 50-V, X7R, 15%	0603	Std	TDK
1	C3	0.1uF	Capacitor, Ceramic, 25V, X5R, 10%	0603	C1608X5R1E104KC	TDK
1	C500	.1uF	Capacitor, 0.1uF, 6.3V, Ceramic, +/-15%	201	C0603X5R0J104K	TDK
3	C501, C502, C503	10uF	Capacitor, Ceramic, 6.3V, X5R, 10%	0805	GRM21BR60J106KE15L	Murata
1	C521	68pF	Capacitor, Ceramic, 68p, 50V, COG, 5%	0603	std	std
1	C526	0.01uF	Capacitor, Ceramic, 0.01u, 50V, X7R, 10%	0603	std	std
1	C527	3900pF	Capacitor, Ceramic, 3900p, 50V, X7R, 10%	0603	std	std
2	J1000, J500	ED555/2DS	Terminal Block, 2-pin, 15-A, 5.1mm	0.40 x 0.35 inch	D120/2DS	OST
1	J7	ED1609-ND	Terminal Block, 2-pin, 15-A, 5.1mm	0.40 x 0.35	ED1609	
1	L1000	47uH	Inductor, SMT, 1.15A, 216milliohm	0.300 sq"	DR74-470-R	Coiltronics
1	L1001	OPEN	Inductor, SMT, yyA, zzmilliohm	0.255 x 0.270 inch	IHLP2525CZ-01	Vishay
1	L500	3.3uH	Inductor, SMT, 3.39A, 18.3milliohm	0.300 sq"	DR74-3R3-R	Coiltronics
2	Q1001, Q501	2N7002DICT	MOSFET, N-ch, 60-V, 115-mA, 1.2-Ohms	SOT23	2N7002DICT	Vishay-Liteon
2	Q2, Q3	FDS8978	MOSFET, NChan 30V, 7.5A , 18 milliOhm	SO8	FDS8978	Fairchild
1	R1	249k	Resistor, Chip, 1/16-W, 1%	0603	Std	Std
2	R1000, R500	4.75K	Resistor, Chip, 1/16W, 1%	0402	Std	Std
2	R1001, R501	3.3	Resistor, Chip, 1/10W, 1%	0805	Std	Std
1	R1002	11.8K	Resistor, Chip, 1/16W, 1%	0603	Std	Std
	R1003	10K	Resistor, Chip, 1/16W, 1%	0603	Std	Std
1	R1004	95.3	Resistor, Chip, 1/16W, 1%	0603	Std	Std
2	R1005, R505	49.9	Resistor, Chip, 1/16W, 1%	0603	Std	Std
2	R1006, R506	OPEN	Resistor, Chip, 1/16W, yy%	0603	Std	Std
1	R1007	2.15K	Resistor, Chip, 1/16W, 1%	0603	Std	Std
1	R2	210k	Resistor, Chip, 1/16-W, 1%	0603	Std	Std
1	R3	649k	Resistor, Chip, 1/16-W, 1%	0603	Std	Std
2	R33	10k	Resistor, Chip, 1/16W, 1%	0603	Std	Std
1	R502	4.02K	Resistor, Chip, 4.02k, 1/16W, 1%	0603	Std	Std
1	R503	10K	Resistor, Chip, 10k, 1/16W, 1%	0603	Std	Std
1	R504	66.5	Resistor, Chip, 66.5ohms, 1/16W, 1%	0603	Std	Std
1	R507	9.53K	Resistor, Chip, 9.53K, 1/16W, 1%	0603	Std	Std
1	R608	2	Resistor, Chip, 1/16W, 1%	0402	Std	Std
2	S5, S10	EG1218	Switch, SPDT, Slide, PC-mount,	0.457 x 0.157 inch	EG1218	E_Switch
2	TP1, TP2	5011	Test Point, Black, Thru Hole	0.125 x 0.125 inch	5011	Keystone
14	TP28, TP30, TP1000, TP1001, TP1003, TP1005, TP1006, TP1007, TP500, TP501, TP503, TP505, TP506, TP507	5000	Test Point, Red, Thru Hole Color Keyed	0.100 x 0.100 inch	5000	Keystone
5	TP29, TP1002, TP1004, TP502, TP504	5001	Test Point, Black, Thru Hole Color Keyed	0.100 x 0.100 inch	5001	Keystone
2	U1000, U500	TPS40192DRC	IC, Cost Optimized Mid Vin High Freq. Sync. Buck controller	DRC10	TPS40192DRC	TI
1	U2	TPS3803-01DCK	IC, Voltage Detector	SOP-5 (DCK)	TPS3803-01DCK	TI
1	U5	TPS73018DBVR	IC, UltraLow-Noise, High PSRR, Fast RF 200 mA, LDO Regulator	SOT23-6	TPS73018DBVR	TI

DM643x – TPS40192 & TPS73018 - (PMP4025-RevA) 9/17/08

The following test report includes measurements for the following output voltage rails for 5V input:

A. **Start Up Waveform for all outputs**
B. **1.2V @ 1.48A Using the TPS40192 Device**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (50% to 100%, Load Step)
3. Load Regulation
4. Efficiency
5. Switch Node
6. Frequency Response

C. **3.3V @ 0.18A Using the TPS40192 Device**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (25% to 100% Load Step)
3. Load Regulation
4. Efficiency
5. Switch Node
6. Frequency Response

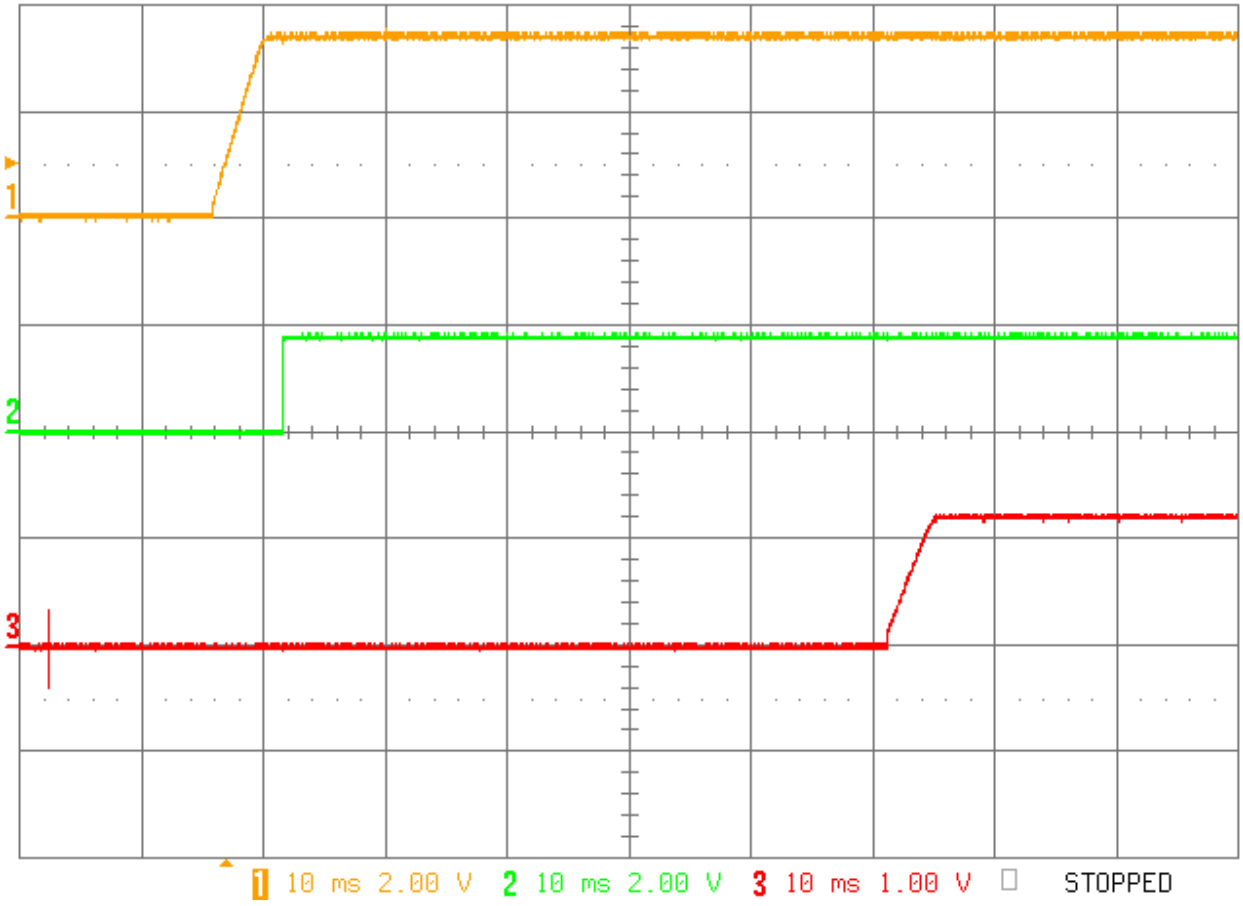
D. **1.8V @ 0.14A Using the TPS73018 Device - LDO**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (50% to 100% Load Step, & 25% to 100% Load Step)

DM643x – TPS40192 (x 2) & TPS73018 Test Report

A Start Up Waveform All Outputs – TPS 40192 (x2) & TPS 73018

Sequence is 3.3V, 1.8V and 1.2V, with 5V input

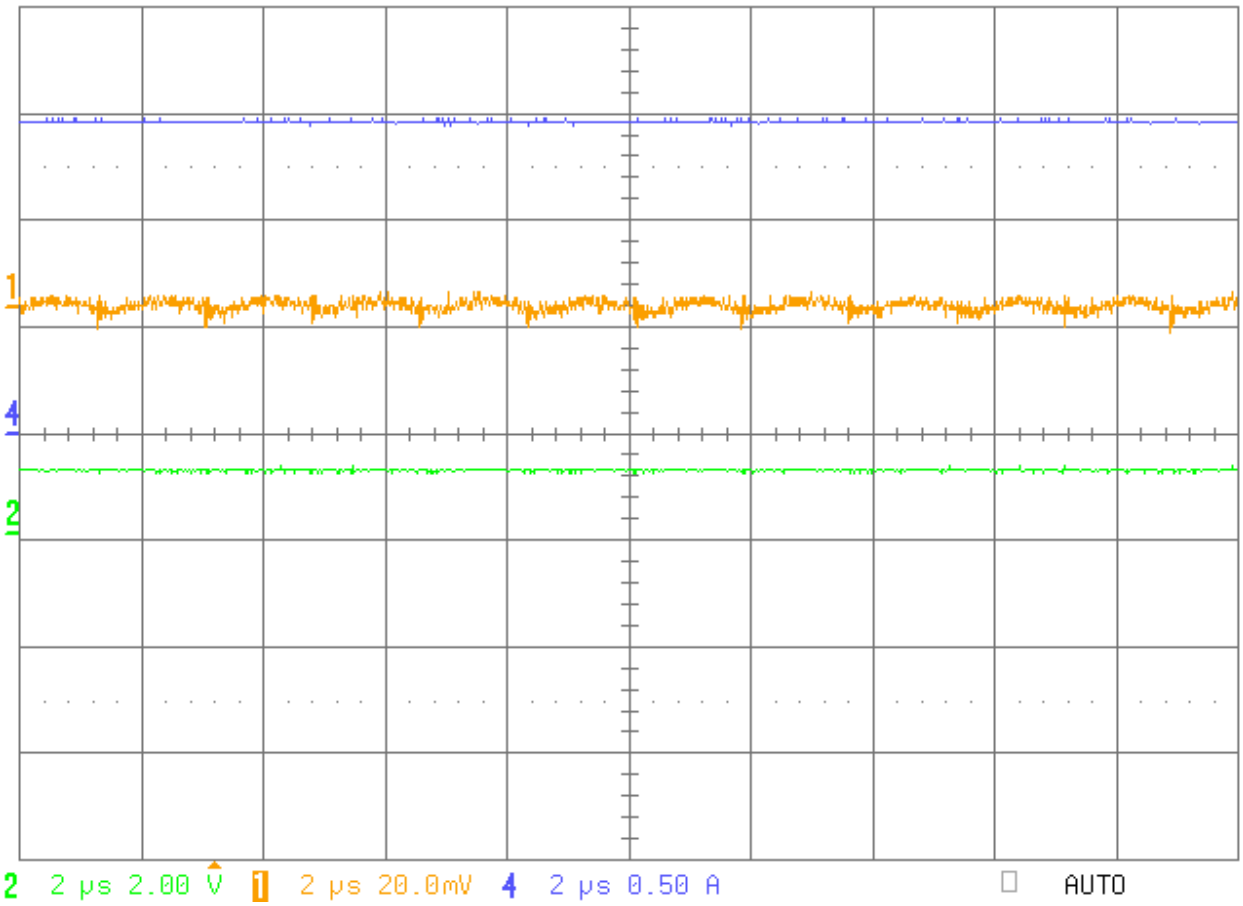


A 1.2V @ 1.48A – TPS 40192 – DCDC

1 Output Ripple Voltage

The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 1.2V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current – Blue (0.5A/Division. DC Coupled)

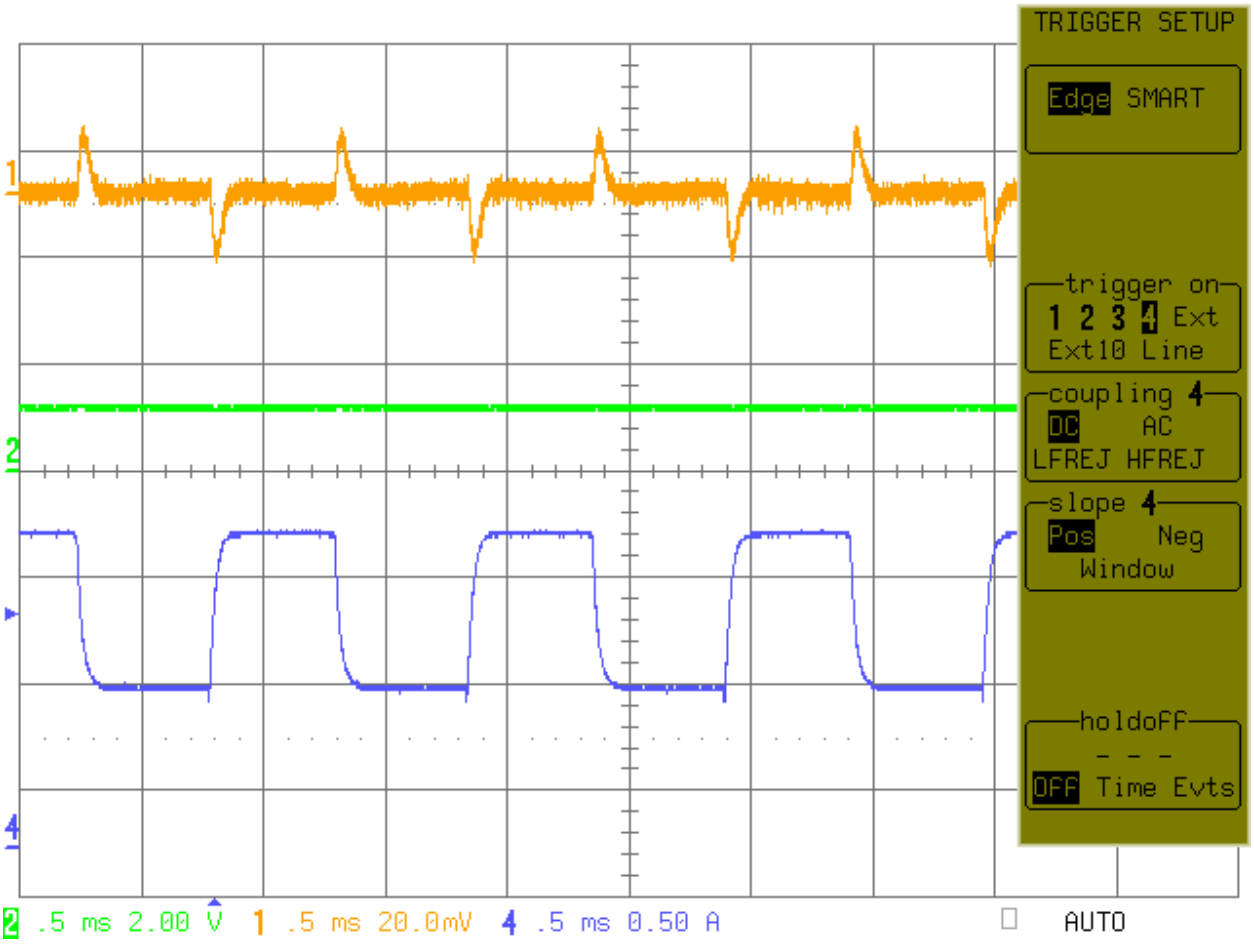


1.48A External Load; 2us/Division

2 Load Transients – TPS 40192 – DCDC 1.2V@1.48A

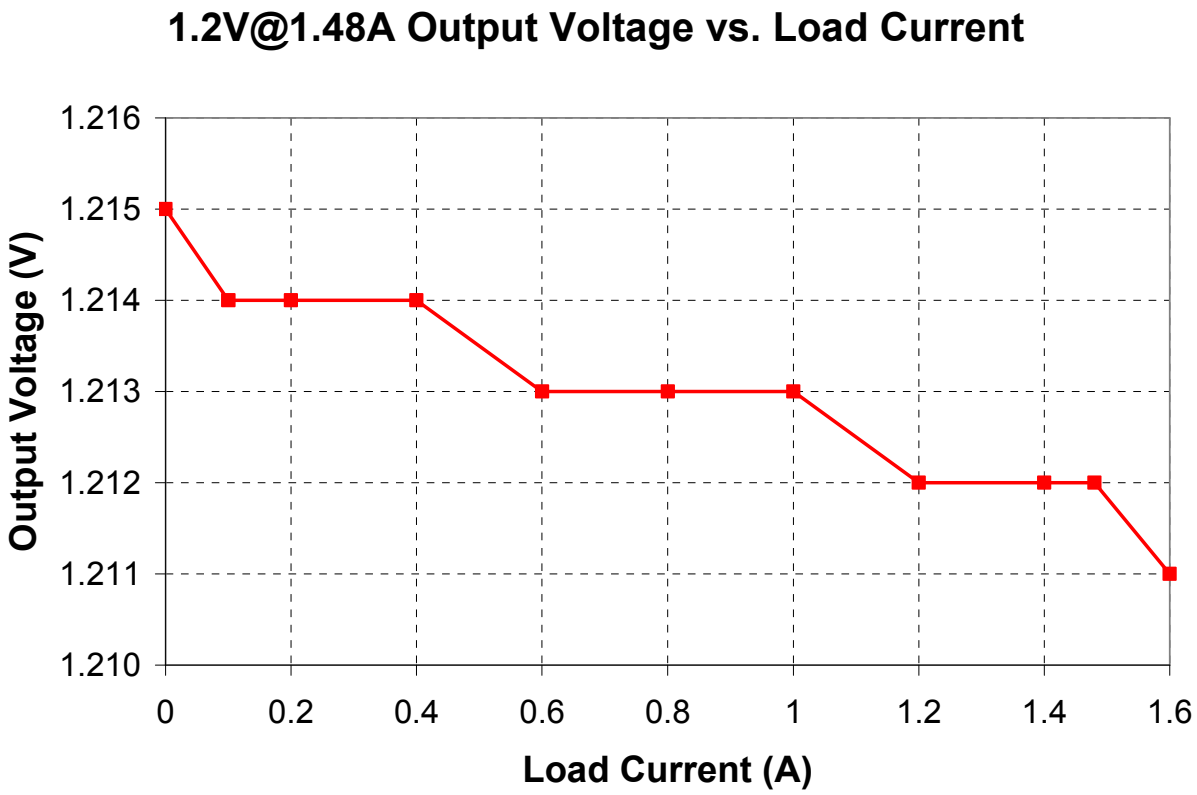
The photo below shows the transient response. The current is pulsed from 0.75A to 1.48A. The input voltage is 5V. The time-base is set to 500us/Division.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel2: 1.2V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current - Blue (0.5A/Division)



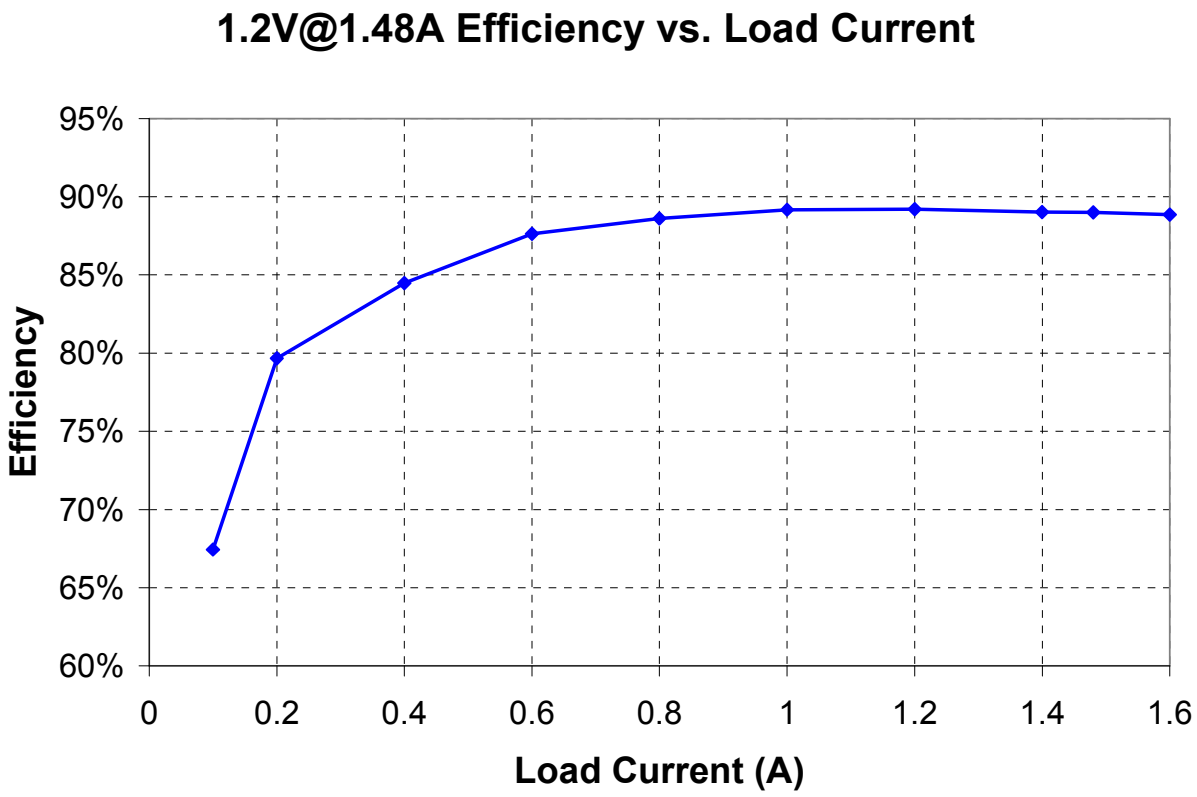
3 Load Regulation – TPS 40192 - DCDC

The load regulation is shown in the figure below. The input voltage is 5V.



4 Efficiency – TPS 40192 - DCDC

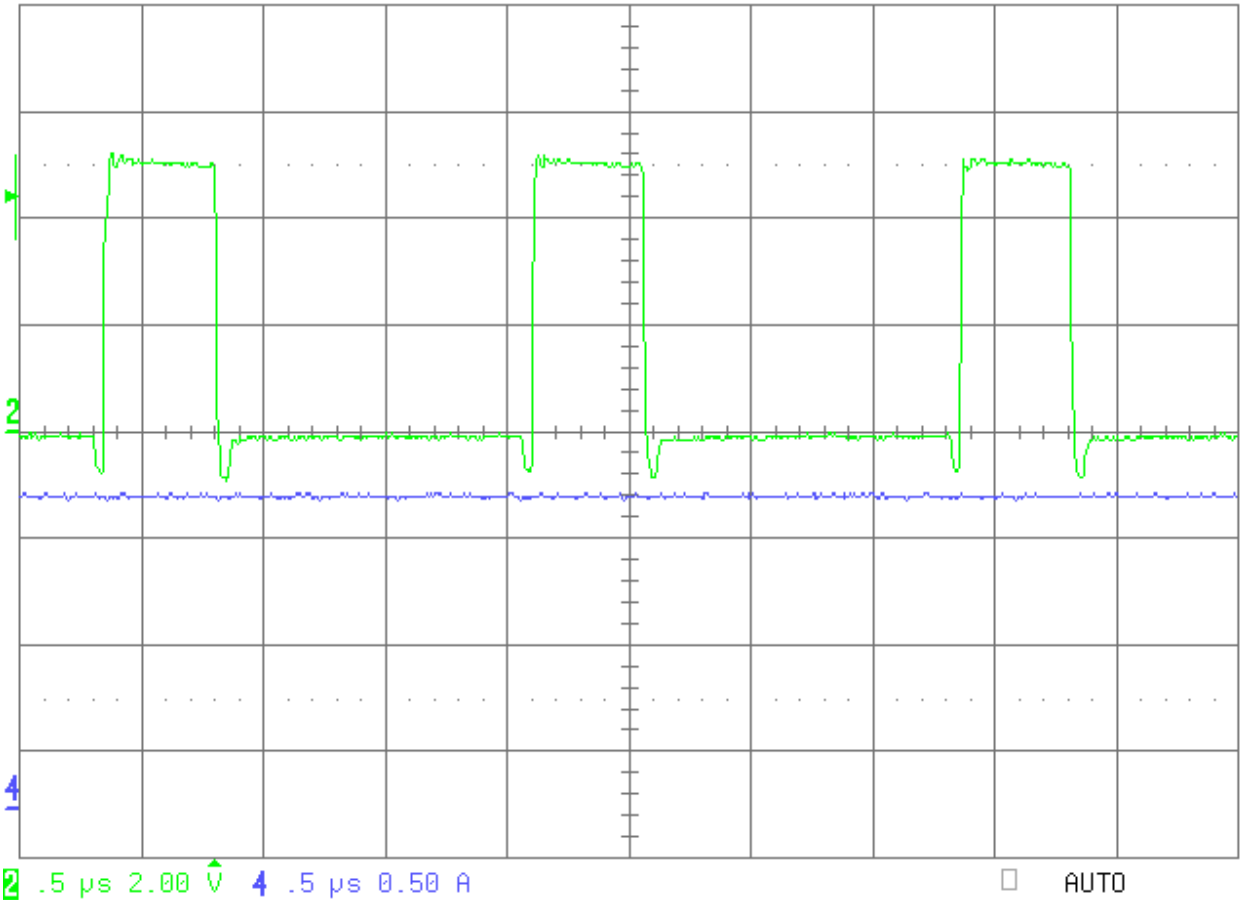
The efficiency is shown in the figure below. The input voltage is 5V.



5 Switch Node Waveforms – TPS40192 – 1.2V@1.48A

The plot below shows the switching waveforms for the converter. The input is 5V.

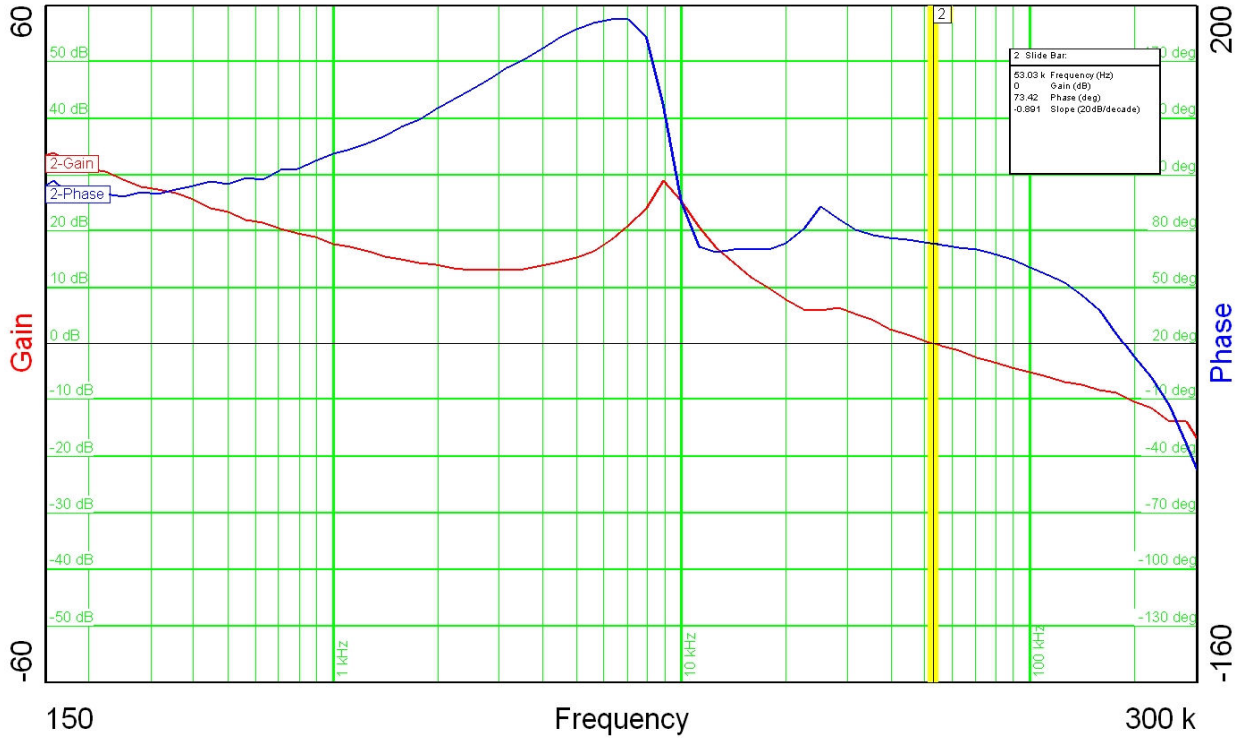
Channel 2: Switch Node - Green (2V/Division)
Channel 4: Load Current – Blue (0.5A/Division)



Switchnode 1.2V@1.48A External Load,

6 Frequency Response – TPS 40192 – 1.2V@1.48A

The input voltage is 5V.
Cross over frequency : 53kHz
Phase Margin: 73.4deg

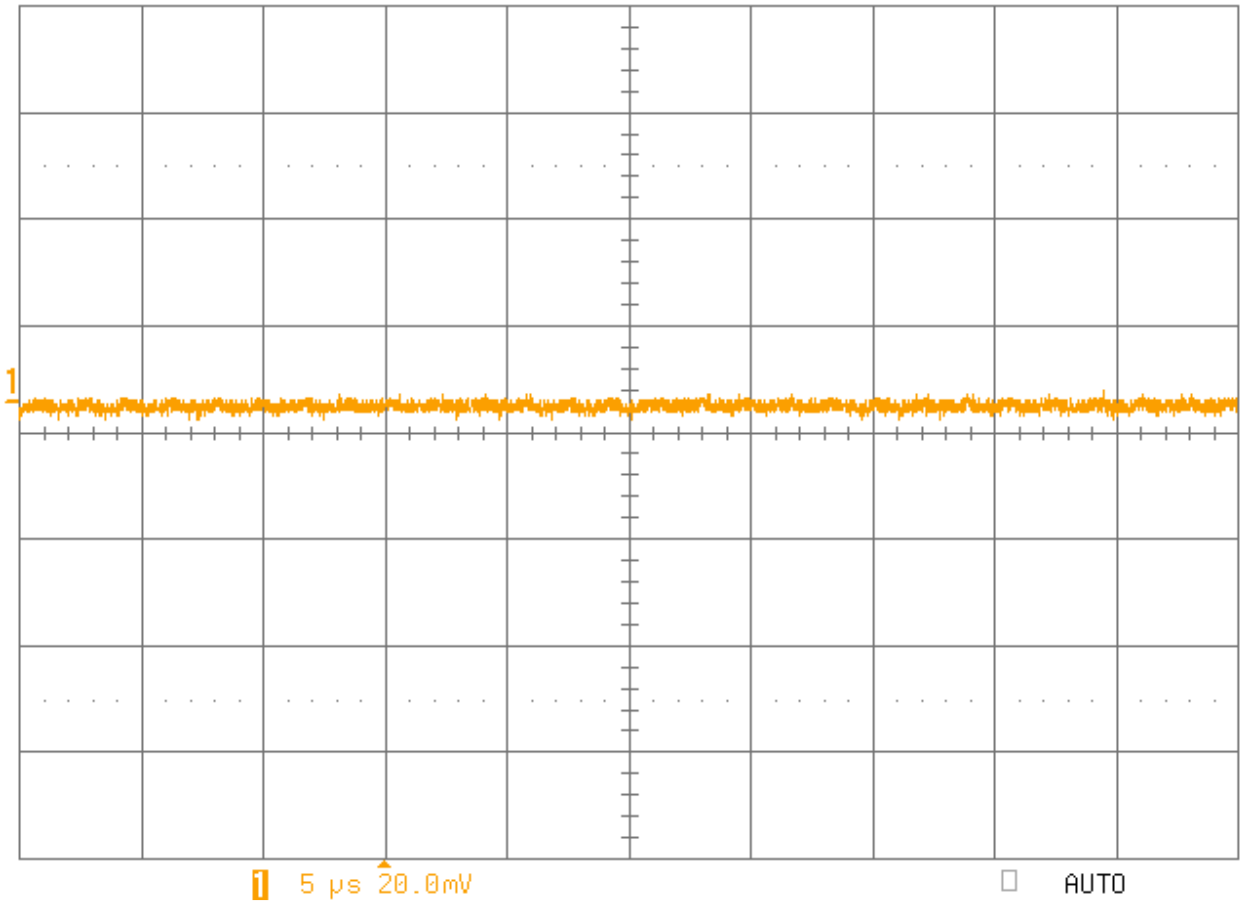


B 3.3V @ 0.18A – TPS 40192 – DCDC

1. Output Ripple Voltage – TPS 40192 – 3.3V@ 0.18A

The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)

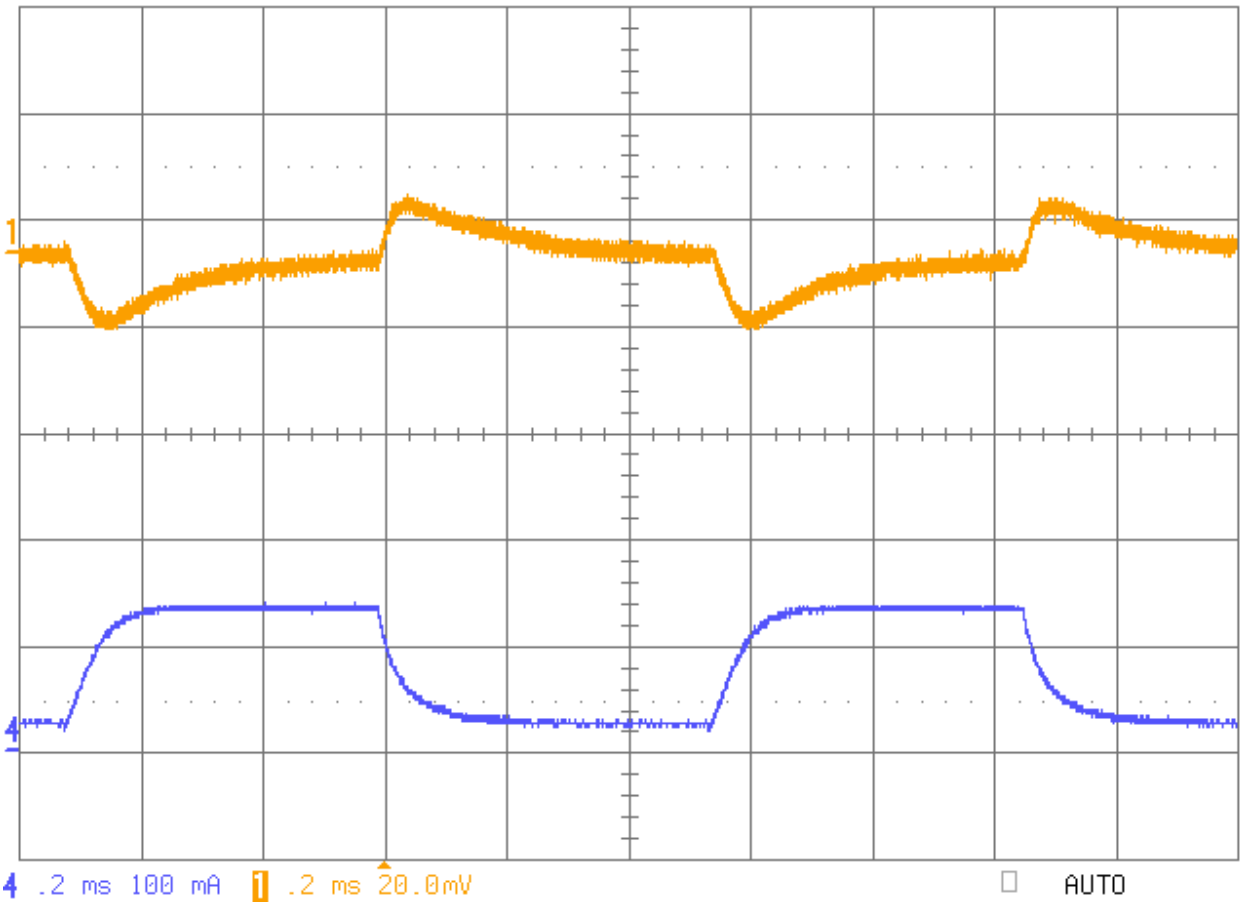


3.3V@0.18A External Load; 5us/Division

2. Load Transients –TPS 40192 – 3.3V@0.18A

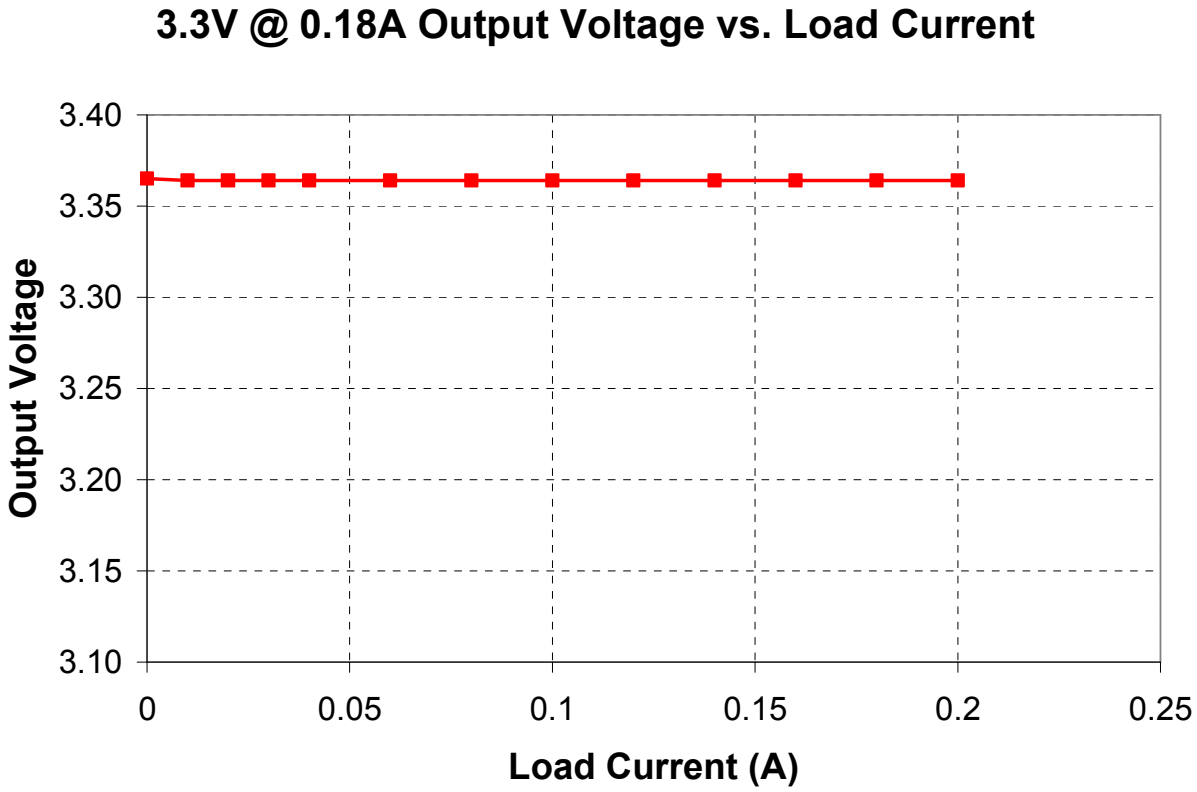
The photo below shows the transient response. The current is pulsed from 0.045A to 0.18A. The input voltage is 5V. The time-base is set to 200us/Division.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Output Current - Blue (100mA/Division)



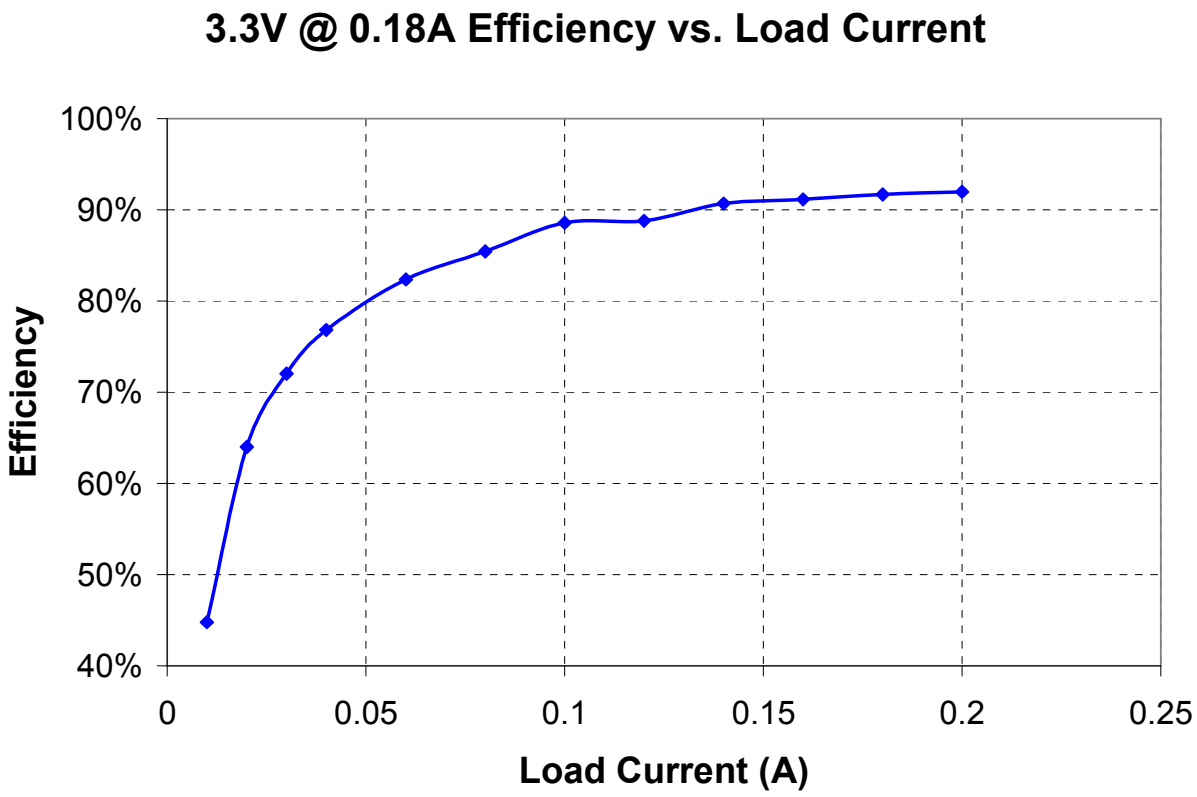
3. Load Regulation – TPS 40192 – 3.3V@0.18A

The load regulation is shown in the figure below. The input voltage is 5V.



4. Efficiency – TPS 40192 – 3.3V@0.18A

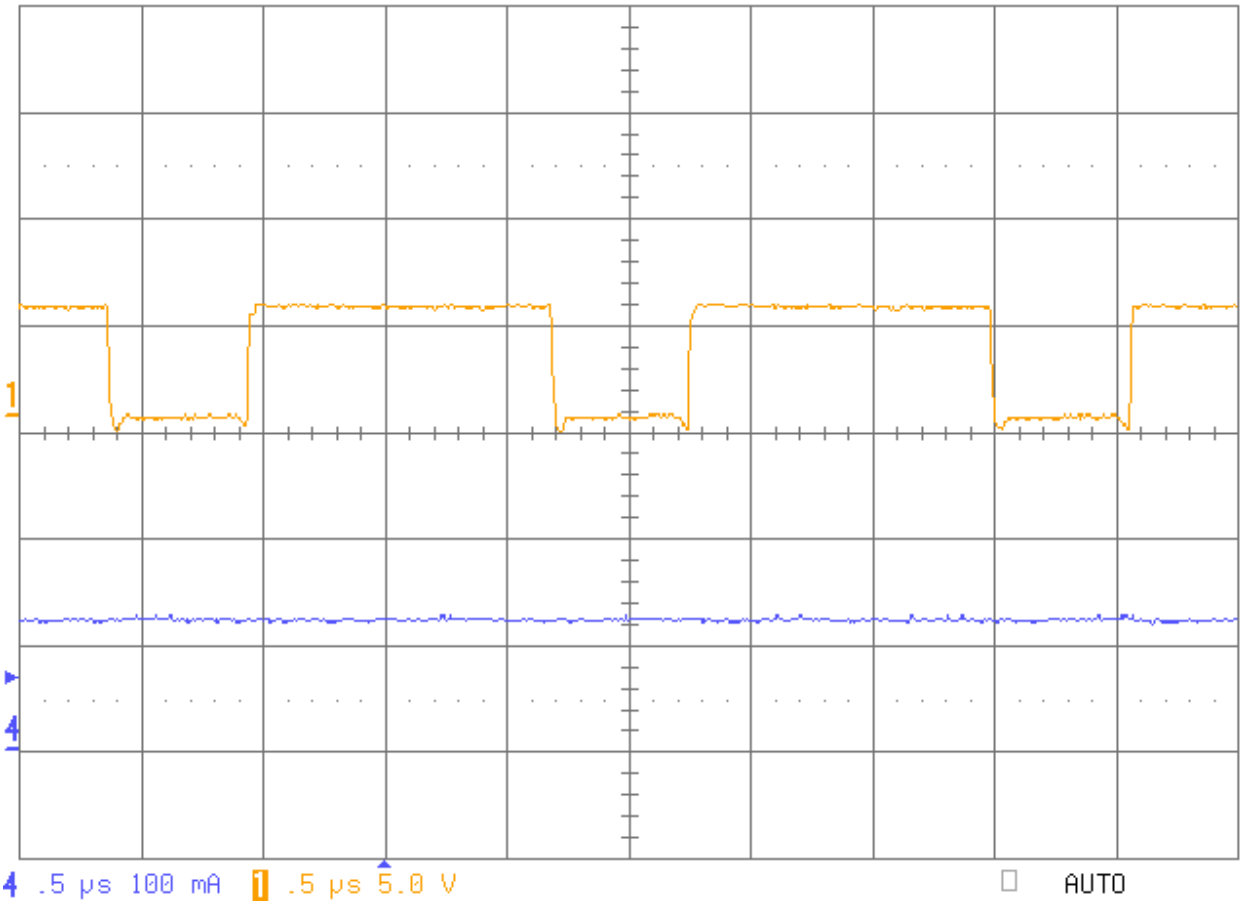
The efficiency is shown in the figure below. The input voltage is 5V.



5. Switch Node Waveforms – TPS 40192 – 3.3V@0.18A

The plot below shows the switching waveforms for the converter. The input is 5V.

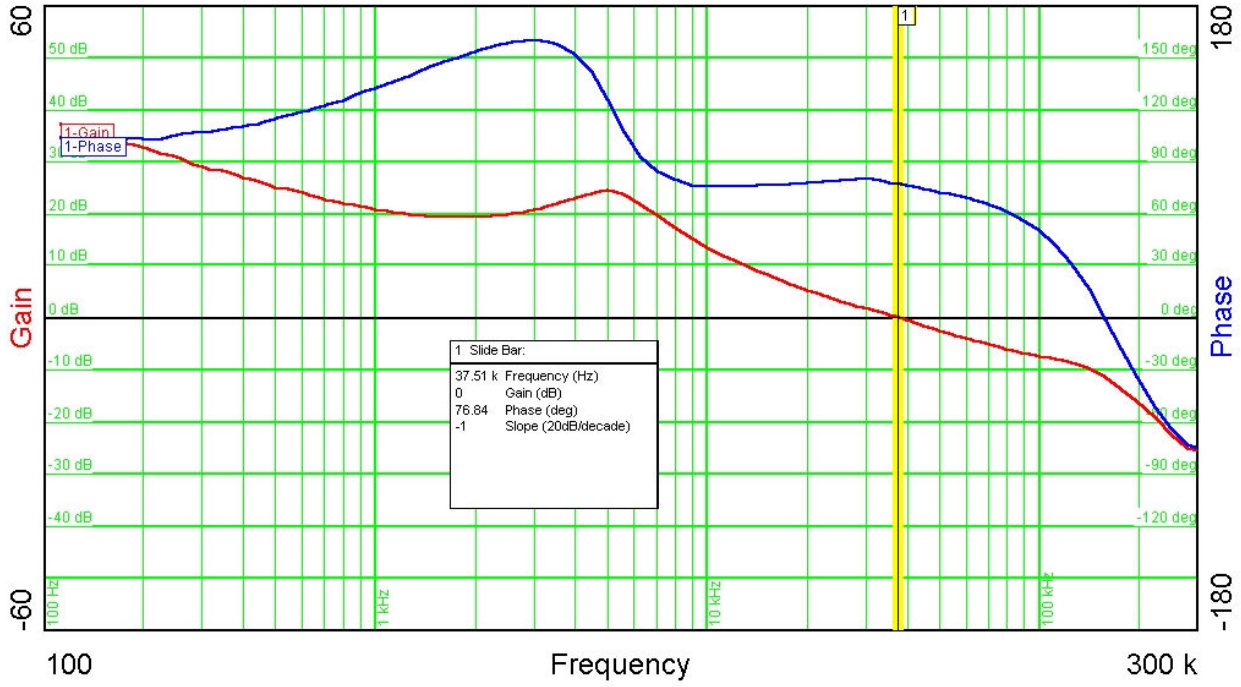
Channel 2: Switch Node - Orange (2V/Division)



Switchnode at 3.3V@0.18A External Load,

6. Frequency Response – TPS 40192 – 3.3V @ 0.18A

The input voltage is 5V.
Cross over frequency : 37.5kHz
Phase Margin: 76.8deg

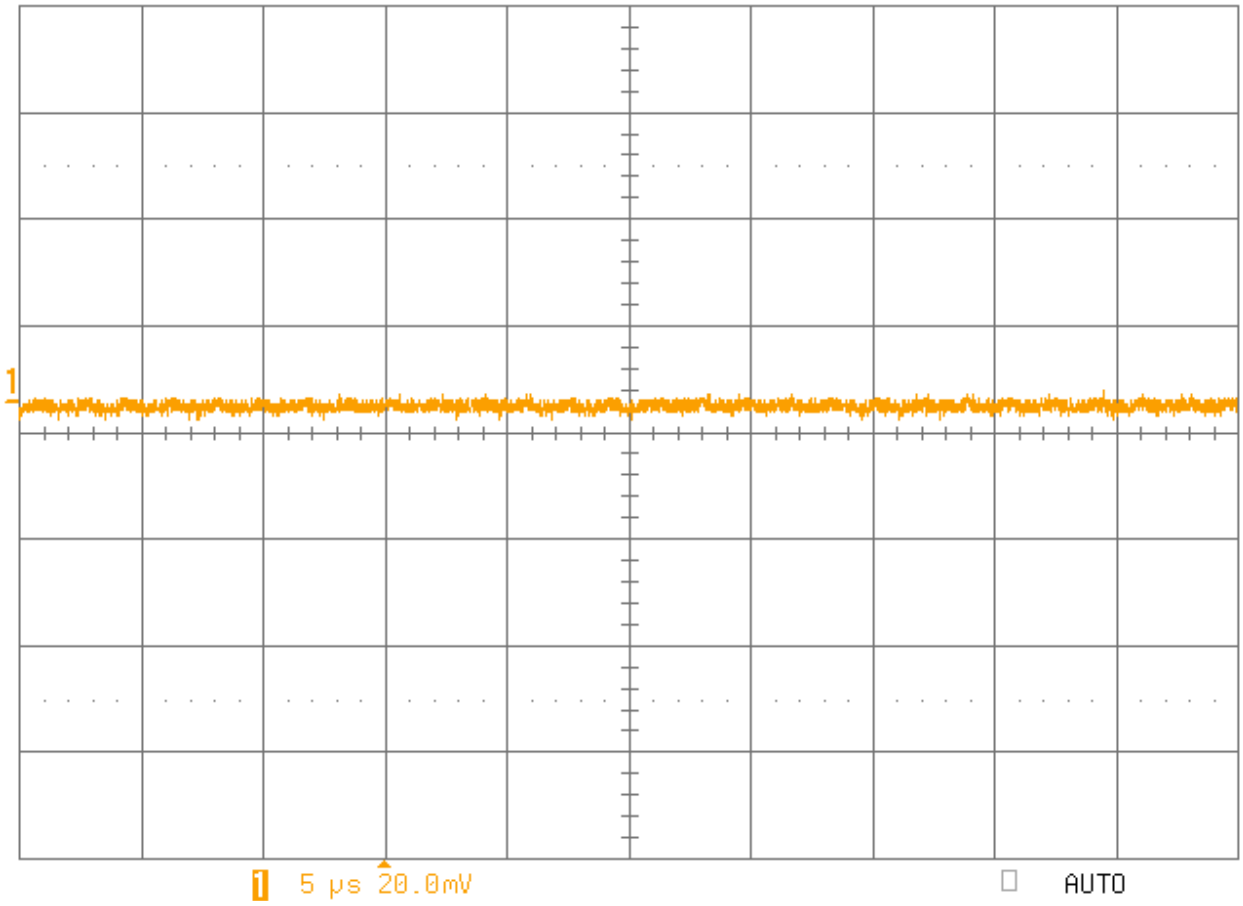


C 1.8V @ 0.14A – TPS 73018 – LDO

1. Output Ripple Voltage – TPS 73018 – LDO, 1.8V@0.14A

The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)



1.8V@0.14A External Load; 5us/Division

2. Load Transients – TPS 73018 – LDO, 1.8V@0.14A

The photo below shows the transient response. The current is pulsed from 0.02A to 0.04A. The input voltage is 5V. The time-base is set to 100us/Division.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Output Current - Blue (100mA/Division)