

TAS5518-5261K2EVM

Yang Boon Quek and Tomas Bruunshuus Soerensen

Audio Products

ABSTRACT

The TAS5518-5261K2EVM PurePath Digital™ customer evaluation module demonstrates the integrated circuits TAS5518PAG and TAS5261DKD from Texas Instruments (TI). This application report covers the TAS5518-5261EVM PurePath Digital™ evaluation module specifications, audio performance and power efficiency measurements graphs, and design documentation that includes schematics, parts list, layout, and mechanical design.

Contents

1	Introduction	2
2	TAS5518-5261K2EVM Specification	3
3	References.....	11
	Appendix A Design Documents	12

List of Figures

1	THD+N Versus Power (BTL – 4 Ω)	4
2	THD+N Versus Power (BTL – 6 Ω)	5
3	THD+N Versus Power (BTL – 8 Ω)	5
4	THD+N Versus Frequency (BTL – 4 Ω)	6
5	THD+N Versus Frequency (BTL – 6 Ω)	6
6	THD+N Versus Frequency (BTL – 8 Ω)	7
7	FFT Spectrum With –60-dBFS Tone (BTL)	7
8	Idle Noise FFT Spectrum (BTL)	8
9	Channel Separation	8
10	Frequency Response (BTL)	9
11	High Current Protection (BTL)	9
12	Pop/Click (BTL).....	10
13	Output Stage Efficiency	10

List of Tables

1	General Test Conditions	3
2	TAS5518 Register Settings	3
3	Electrical Data.....	3
4	Audio Performance	3
5	Thermal Specification	4
6	Physical Specifications.....	4

Introduction

1 Introduction

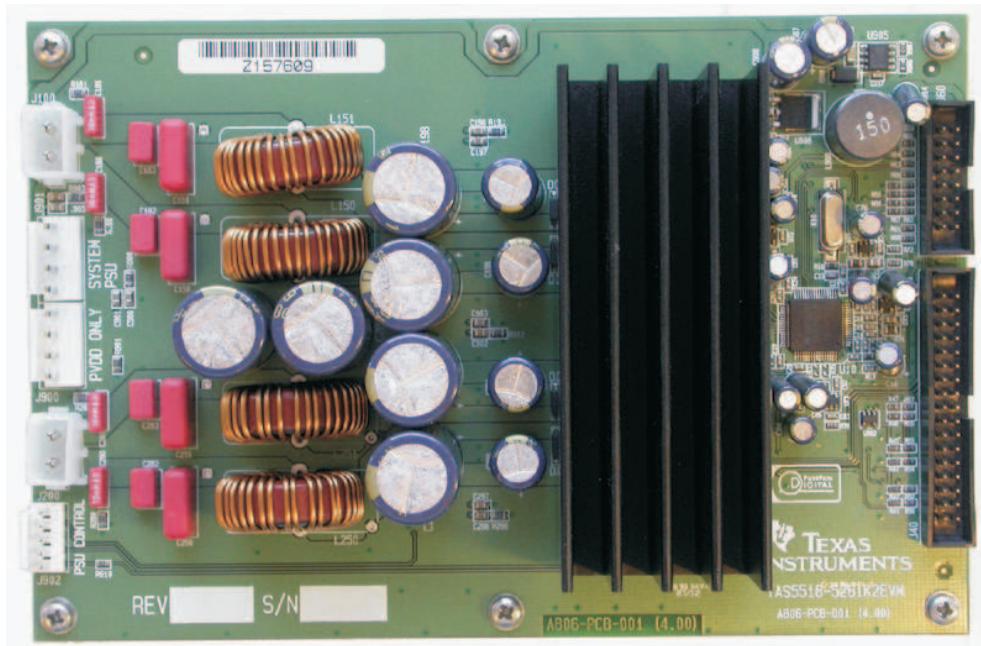
The TAS5518-5261K2EVM PurePath Digital™ customer evaluation module demonstrates the integrated circuits TAS5518PAG and TAS5261DKD from Texas Instruments (TI).

TAS5518PAG is a high-performance, 32-bit (24-bit input) multichannel PurePath Digital™ pulse width modulator (PWM) based on Equibit™ technology with fully symmetrical AD modulation scheme. The device also has digital audio processing (DAP) that provides 48-bit signal processing, advanced performance and a high level of system integration. The device has interfaces for headphone output and power supply volume control (PSVC).

The TAS5261 is a high-performance, integrated mono digital amplifier power stage designed to drive 4- Ω to 8- Ω speakers with low harmonic distortion. This system requires only a simple, passive demodulation filter to deliver high-quality, high-efficiency audio amplification.

This EVM, together with a TI input-USB board, is a complete 2-channel stereo digital audio amplifier system which includes digital input (S/PDIF), analog inputs, interface to PC and DAP features like digital volume control, input and output mixers, automute, tone controls, loudness, EQ filters and dynamic range compression (DRC). Configuration options are for power-stage failure protection and a mini-jack connector for headphone. This stereo system is designed for home theater applications such as A/V receivers.

This document covers EVM specifications, audio performance and power efficiency measurements graphs, and design documentation that includes schematics, parts list, layout, and mechanical design.



For EVM setup and use, see the *TAS5518-5261K2EVM User's Guide*. For Gerber (layout) and parts list (MS Excel™ format), see the PurePath Digital™ CD-ROM.

The EVM is delivered with cables and Input-USB board to connect to an input source and be controlled from a PC.

2 TAS5518-5261K2EVM Specification

Table 1. General Test Conditions

General Test Conditions	Notes
Output stage supply voltage	50 V Laboratory Power Supply (EA-PS 7065-10A)
System supply voltage	15 V
Load impedance	4, 6, 8 Ω
Sampling frequency	48 kHz
PWM processor	TAS5518PAG
Output stage	TAS5261DKD
TI Input-USB Board	Input-USB
EVM configuration file	ver 2.00 TAS5518-5261K2EVM Configuration (2.00).cfg

Table 2. TAS5518 Register Settings

Register	Register ⁽¹⁾	Value	Notes
Modulation Index Limit Register	0x16	0x04	Set Modulation Index to 96.1%
Master Volume Register	0xD9	00 00 00 48	Master Volume set to 0 dB

(1) These register settings are used for all tests, unless otherwise specified.

Table 3. Electrical Data

Electrical Data	Notes/Conditions
Output power, BTL, 4 Ω	235 W 1 kHz, unclipped (0dBFS), T _A = 25°C
Output power, BTL, 4 Ω	316 W 1 kHz, 10% THD+N, T _A = 25°C
Output power, BTL, 6 Ω	166 W 1 kHz, unclipped (0dBFS), T _A = 25°C
Output power, BTL, 6 Ω	221 W 1 kHz, 10% THD+N, T _A = 25°C
Output power, BTL, 8 Ω	128 W 1 kHz, unclipped (0dBFS), T _A = 25°C
Output power, BTL, 8 Ω	170 W 1 kHz, 10% THD+N, T _A = 25°C
Rated load impedance, BTL	4-8 Ω
Maximum peak current, BTL	>15 A 1 kHz burst, 1 Ω, ROC = 22k
Output stage efficiency:	90% 2x125W, 8Ω
Damping factor	26 1 kHz, relative to 8 Ω load
System supply current	<210 mA 1 kHz, -60dBFS signal, without TI input board
H-Bridge supply current	<70 mA 1 kHz, -60dBFS signal
Total board idle power consumption	<7 W H-Bridge supply + System supply, -60dBFS signal

Table 4. Audio Performance

Audio Performance	Notes/Conditions
THD+N, BTL, 4 Ω	1 W <0.05% 1 kHz
THD+N, BTL, 4 Ω	10 W <0.2% 1 kHz
THD+N, BTL, 4 Ω	50 W <0.3% 1 kHz
THD+N, BTL, 4 Ω	100 W <0.3% 1 kHz
THD+N, BTL, 4 Ω	200 W <0.2% 1 kHz
THD+N, BTL, 6 Ω	1 W <0.05% 1 kHz
THD+N, BTL, 6 Ω	10 W <0.05% 1 kHz
THD+N, BTL, 6 Ω	50 W <0.2% 1 kHz
THD+N, BTL, 6 Ω	100 W <0.2% 1 kHz

Table 4. Audio Performance (continued)

Audio Performance		Notes/Conditions
THD+N, BTL, 6 Ω	150 W	<0.2% 1 kHz
THD+N, BTL, 8 Ω	1 W	<0.05% 1 kHz
THD+N, BTL, 8 Ω	10 W	<0.09% 1 kHz
THD+N, BTL, 8 Ω	50 W	<0.09% 1 kHz
THD+N, BTL, 8 Ω	100 W	<0.1% 1 kHz
Dynamic Range	>111 dB	Ref: rated power, A-weighted, AES17 filter
Noise Voltage	<90 μV _{rms}	A-weighted, AES17 filter
Click/Pop, BTL	<10 mV	Mute/Unmute, No signal, 8 Ω
Channel Separation	>75 dB	1 kHz, P _{OUT} = 125 W
Frequency Response	+1/-0.5 dB	125W / 8 Ω, unclipped (0dBFS)

Table 5. Thermal Specification

Thermal specification	T _{Heatsink}	Notes/Conditions
Idle, All Channels Switching	<40°C	1 kHz, 15 min, -60 dBFS signal, T _A = 25°C
2x125 W 8 Ω / 8 (1/8 power)	<55°C ⁽¹⁾	1 kHz, 1 hour, T _A = 25°C
2x125 W, 8 Ω	<75°C ⁽²⁾	1 kHz, 5 min, T _A = 25°C

⁽¹⁾ Highest measured is 47°C.

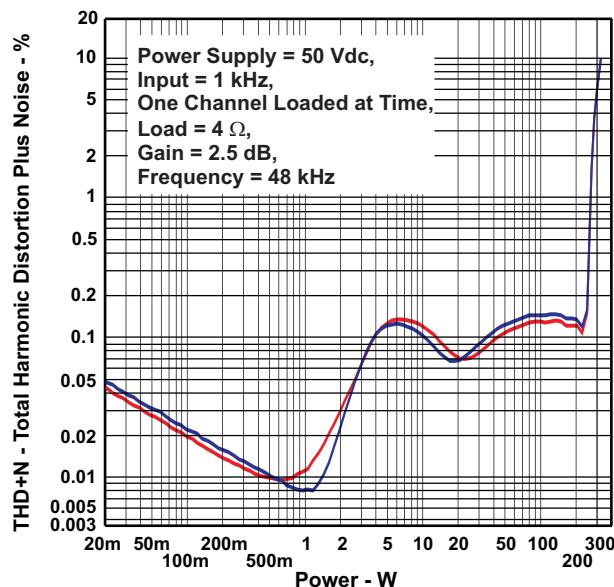
⁽²⁾ Highest measured is 71°C.

Table 6. Physical Specifications⁽¹⁾

Physical Specifications	Notes/Conditions
PCB Dimensions	115 × 175 × 50 Width × Length × Height (mm)
Total Weight	0,4 kg Components + PCB + Heat-sink + Mechanics

⁽¹⁾ All electrical and audio specifications are typical values.

2.1 THD+N Versus Power (BTL –4 Ω)



NOTE: All electrical and audio specifications are typical values.

Figure 1. THD+N Versus Power (BTL –4 Ω)

2.2 THD+N Versus Power (BTL – 6 Ω)

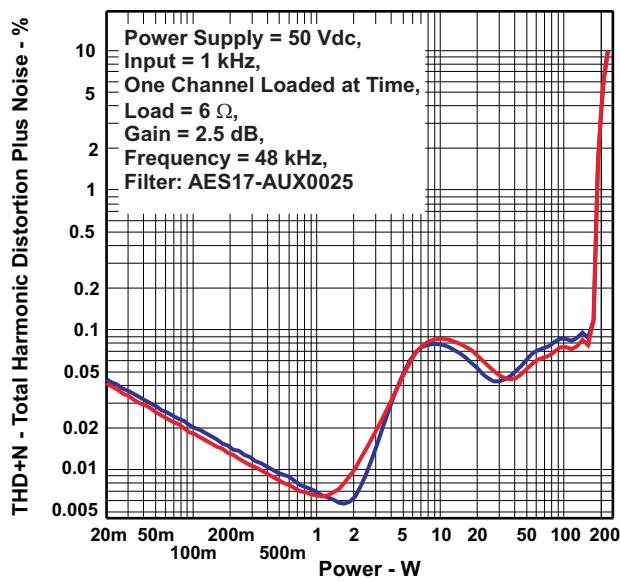


Figure 2. THD+N Versus Power (BTL – 6 Ω)

2.3 THD+N Versus Power (BTL – 8 Ω)

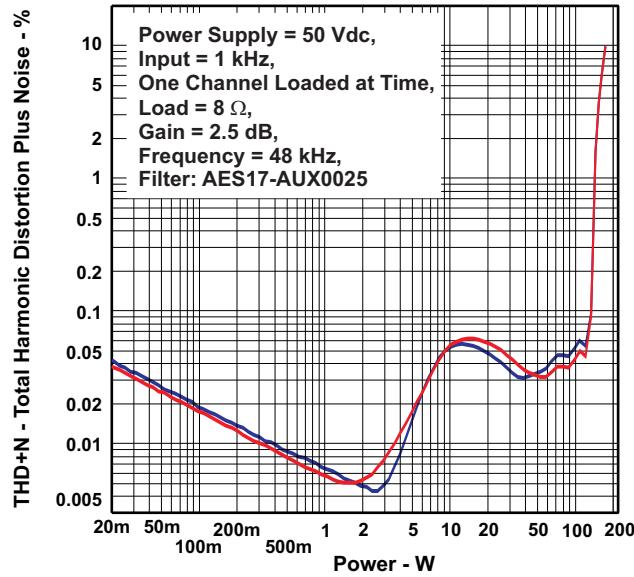


Figure 3. THD+N Versus Power (BTL – 8 Ω)

2.4 THD+N Versus Frequency (BTL – 4 Ω)

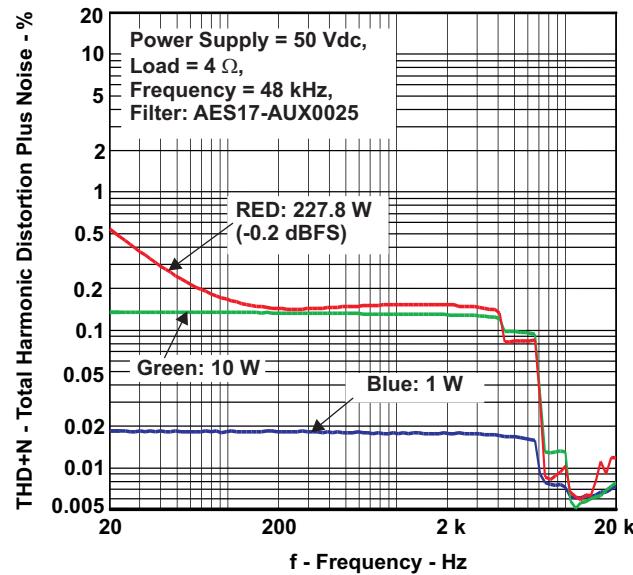


Figure 4. THD+N Versus Frequency (BTL – 4 Ω)

2.5 THD+N Versus Frequency (BTL – 6 Ω)

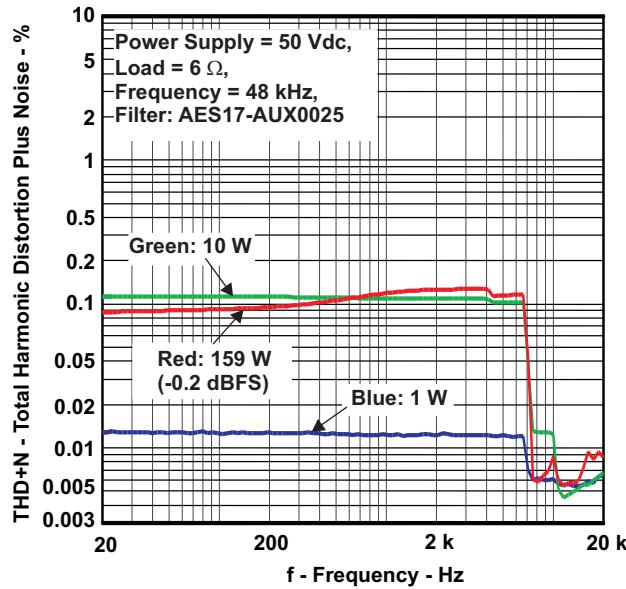


Figure 5. THD+N Versus Frequency (BTL – 6 Ω)

2.6 THD+N Versus Frequency (BTL – 8 Ω)

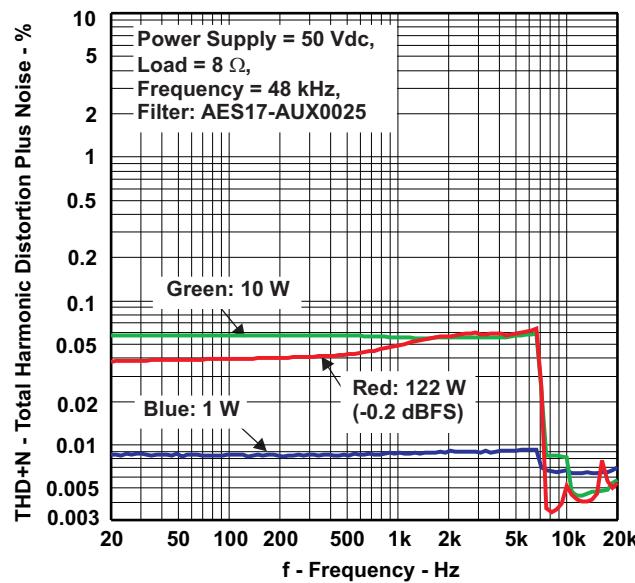


Figure 6. THD+N Versus Frequency (BTL – 8 Ω)

2.7 FFT Spectrum With –60-dBFS Tone (BTL)

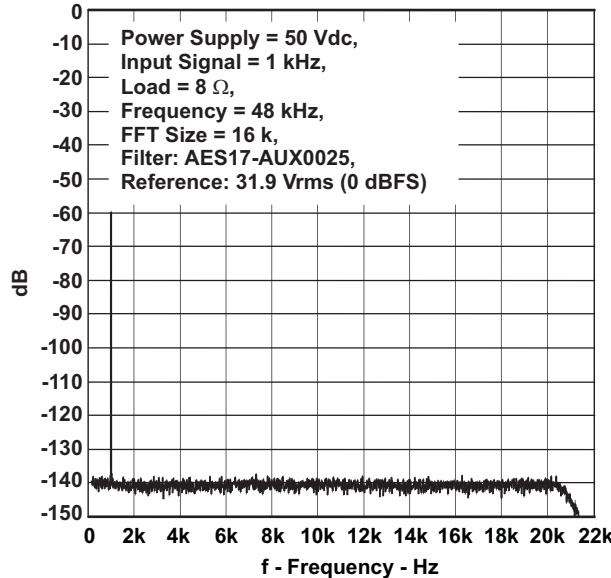


Figure 7. FFT Spectrum With –60-dBFS Tone (BTL)

2.8 Idle Noise FFT Spectrum (BTL)

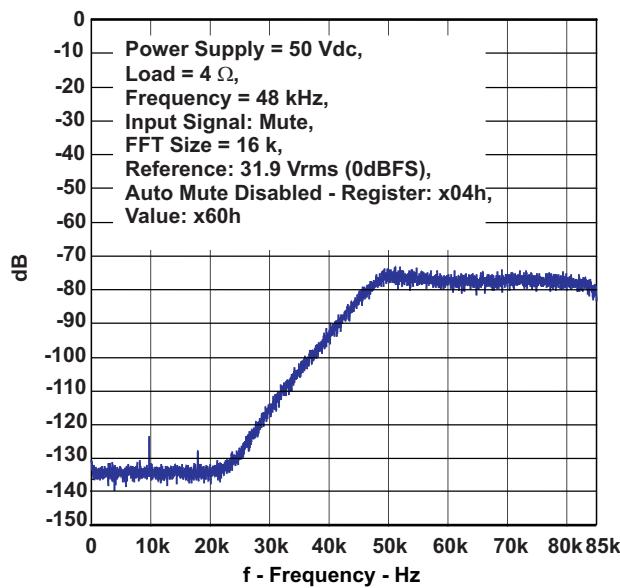


Figure 8. Idle Noise FFT Spectrum (BTL)

2.9 Channel Separation

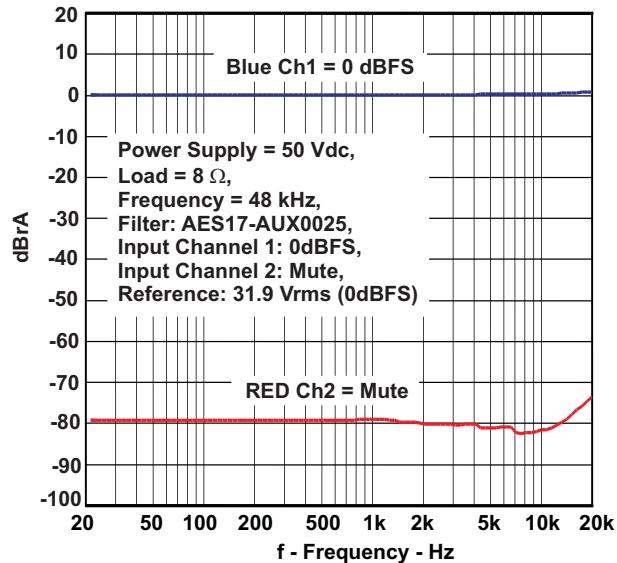


Figure 9. Channel Separation

2.10 Frequency Response (BTL)

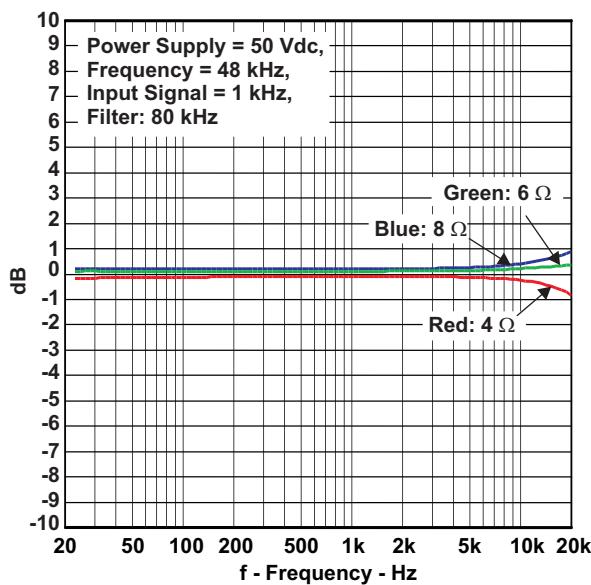


Figure 10. Frequency Response (BTL)

2.11 High-Current Protection (BTL)

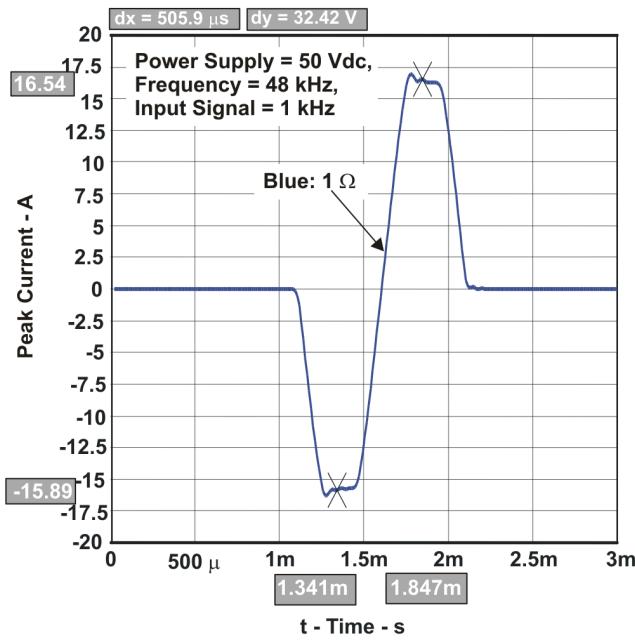


Figure 11. High Current Protection (BTL)

2.12 Pop/Click (BTL)

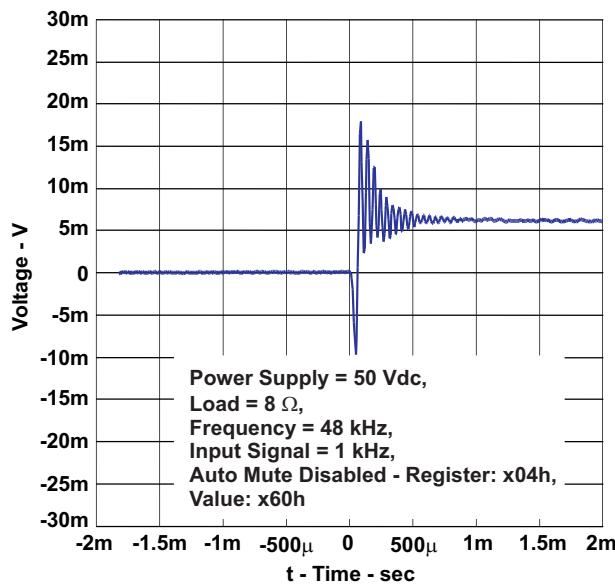


Figure 12. Pop/Click (BTL)

2.13 Output Stage Efficiency

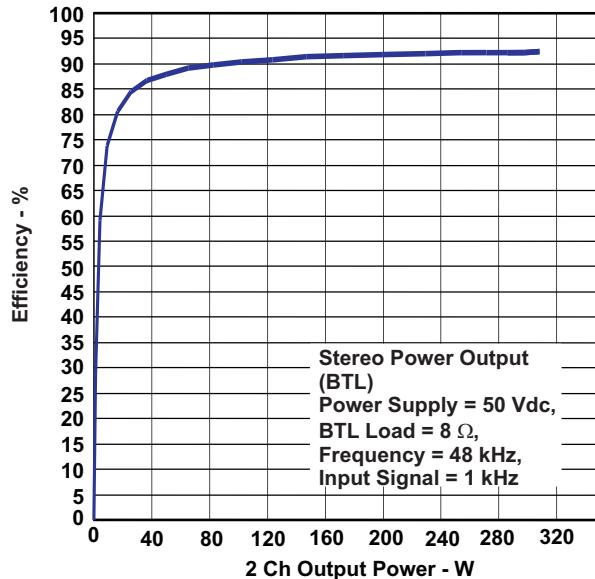


Figure 13. Output Stage Efficiency

3 References

1. *Digital Audio Measurements* application report ([SLAA114](#))
2. *System Design Considerations for True Digital Audio Power Amplifiers* application report ([SLAA117](#))
3. *TAS5518: 8 Channel Digital Audio PWM Processor* data sheet ([SLES162](#))
4. *TAS5261: Stereo Digital Amplifier Power Stage* data sheet ([SLES188](#))
5. *PSRR for PurePath Digital Audio Amplifiers* application report ([SLEA049](#))
6. *Power Rating in Audio Amplifier* application report ([SLEA047](#))
7. *PurePath Digital AM Interference Avoidance* application report ([SLEA040](#))
8. *Click and Pop Measurements Technique* application report ([SLEA044](#))
9. *Power Supply Recommendations for DVD-receivers* application report ([SLEA027](#))
10. *Implementation of Power Supply Volume Control* application report ([SLEA038](#))

Appendix A Design Documents

The following sections comprise this appendix.

- A1. TAS5518-5261K2EVM Schematic
- A2. TAS5518-5261K2EM Parts List
- A3. TAS5518-5261K2EM PCB Specification
- A4. TAS5518-5261K2EM PCB Layers
- A5. Heat Sink Drawing
- TAS5518-5621K2EVM Engineering Change Order

A.1 TAS5518-5261K2EVM Schematic

The TAS5518-5261K2EM schematic drawing sheets are appended to this page.



Design Name:

Type: Evaluation Module

File Name: A806-SCH-001_5.00.DSN

Version: 5.00

Date: 06-03-2007

Design Engineer: Jonas Holm / Kim N Madsen

Audio Configuration: 2 Channel PurePath Digital Amplifier Design
1 x TAS5518, 2 x TAS5261DKD

Interfaces: J40: 34 pin IDC Header for Control, I2C and +5V
J60: 16 pin IDC Header for I2S Audio
J100-J200: 2 pin 5.08mm Headers for Speakers
J900: 4 pin 3.96mm Header for H-Bridge (optional)
J901: 4 pin 3.96mm Header for H-Bridge and System Power Supply

Setup: 2 x 8 ohm Speaker Loads
+50V H-Bridge and +15V System Power Supplies

Performance: 2 x 125W/8ohm or 2 x 240W/4ohm
>110dB Dynamic Range

Page

1/6: Front Page and Schematic Disclaimer

2/6: Overview - Modulator, Input/Output Connectors

3/6: Channel 1 - BTL Power Stage

4/6: Channel 2 - BTL Power Stage

5/6: Power Supplies

6/6: Mechanics

Copyright 2007 Texas Instruments, Inc - All rights reserved - The TI and PurePath Digital logos are trademarks of Texas Instruments.

NOTE1

SCHEMATIC DISCLAIMER

The schematic information and materials ("Materials") provided here are provided by Texas Instruments Incorporated ("TI") as a service to its customers and/or suppliers, and may be used for informational purposes only, and only subject to the following terms. By downloading or viewing these Materials, you are signifying your assent to these terms.

1.) These evaluation schematics are intended for use for ENGINEERING DEVELOPMENT AND EVALUATION PURPOSES ONLY and are not considered by Texas Instruments to be fit as a basis for establishing production products or systems. This information may be incomplete in several respects, including but not limited to information relating to required design, marketing, and/or manufacturing-related protective considerations and product safety measures typically found in the end-product incorporating the goods.

2.) Accordingly, neither TI nor its suppliers warrant the accuracy or completeness of the information, text, graphics, links or other items contained within the Materials. TI may make changes to the Materials, or to the products described therein, at any time without notice. TI makes no commitment to update the Materials.

3.) TI assumes no liability for applications assistance, customer product design, software performance, or services that may be described or referenced in the Materials. The user assumes all responsibility and liability for proper and safe design and handling of goods. Accordingly, the user indemnifies TI from all claims arising from its use of the Materials.

4.) TI currently deals with various customers for products, and therefore our arrangement with the user will not be exclusive. TI makes no representations regarding the commercial availability of non-TI components that may be referenced in the Materials.

5.) No license is granted under any patent right or other intellectual property right of TI covering or relating to any combination, machine, or process in which such TI products or services might be or are used. Except as expressly provided herein, TI and its suppliers do not grant any express or implied right to you under any patents, copyrights, trademarks, or trade secret information.

6.) Performance tests and ratings, to the extent referenced in the Materials, are measured using specific computer systems and/or components and reflect the approximate performance of TI products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing.

7.) Resale of TI's products or services with statements different from or beyond the parameters stated by TI for that product or service in official TI data books or data sheets voids all express and any implied warranties for the associated TI product or service, and is an unfair and deceptive business practice, and TI is not responsible for any such use.

8.) The Materials are copyrighted and any unauthorized use may violate copyright, trademark, and other laws. You may only download one copy for your internal use only, unless you are specifically licensed to do otherwise by TI in writing. This is a license, not a transfer of title, and is subject to the following restrictions: You may not: (a) modify the Materials (including any associated warranties, conditions, limitations or notices) or use them for any commercial purpose, or any public display, performance, sale or rental; (b) decompile, reverse engineer, or disassemble software Materials except and only to the extent permitted by applicable law; (c) remove any copyright or other proprietary notices from the Materials; (d) transfer the Materials to another person. You agree to prevent any unauthorized copying of the Materials. TI may terminate this license at any time if you are in breach of the terms of this Agreement. Upon termination, you will immediately destroy the Materials.

9.) THE MATERIALS ARE PROVIDED "AS IS" WITHOUT ANY EXPRESS OR IMPLIED WARRANTY OF ANY KIND INCLUDING WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT OF INTELLECTUAL PROPERTY, OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT SHALL TI OR ITS SUPPLIERS BE LIABLE FOR ANY DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION, LOSS OF INFORMATION) ARISING OUT OF THE USE OF OR INABILITY TO USE THE MATERIALS, EVEN IF TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Parts List 5.00

DIGITAL AUDIO & VIDEO DIVISION

ALL RIGHTS RESERVED - PATENTS PENDING

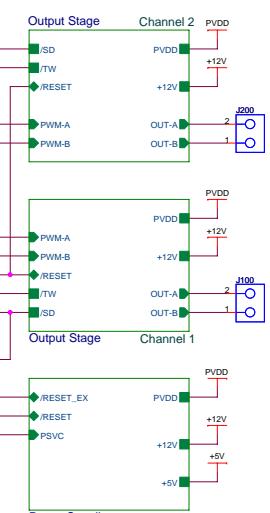
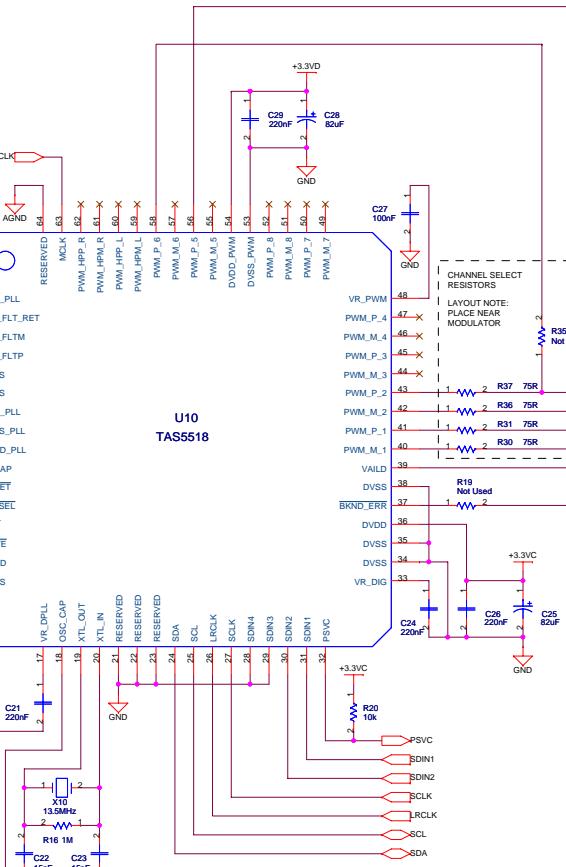
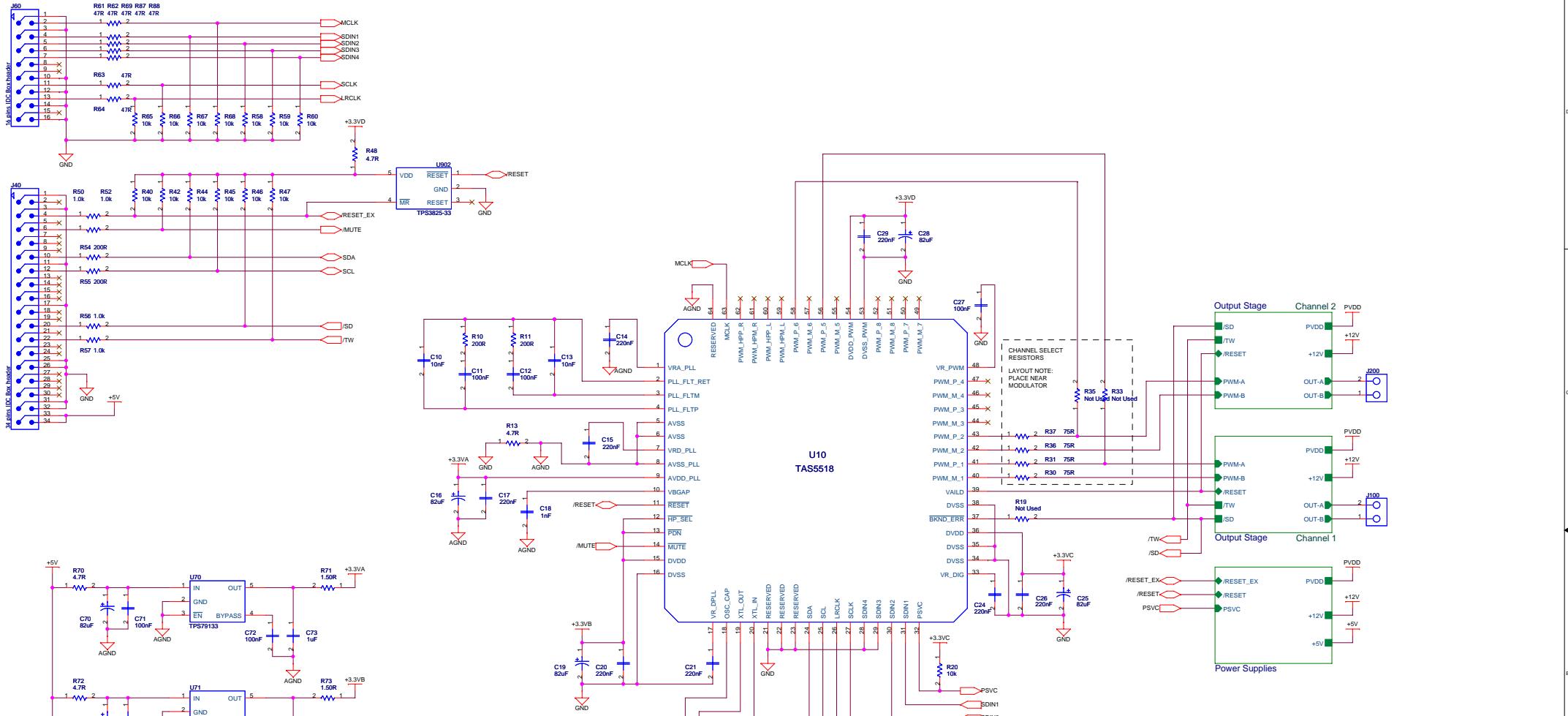
TEXAS INSTRUMENTS INCORPORATED

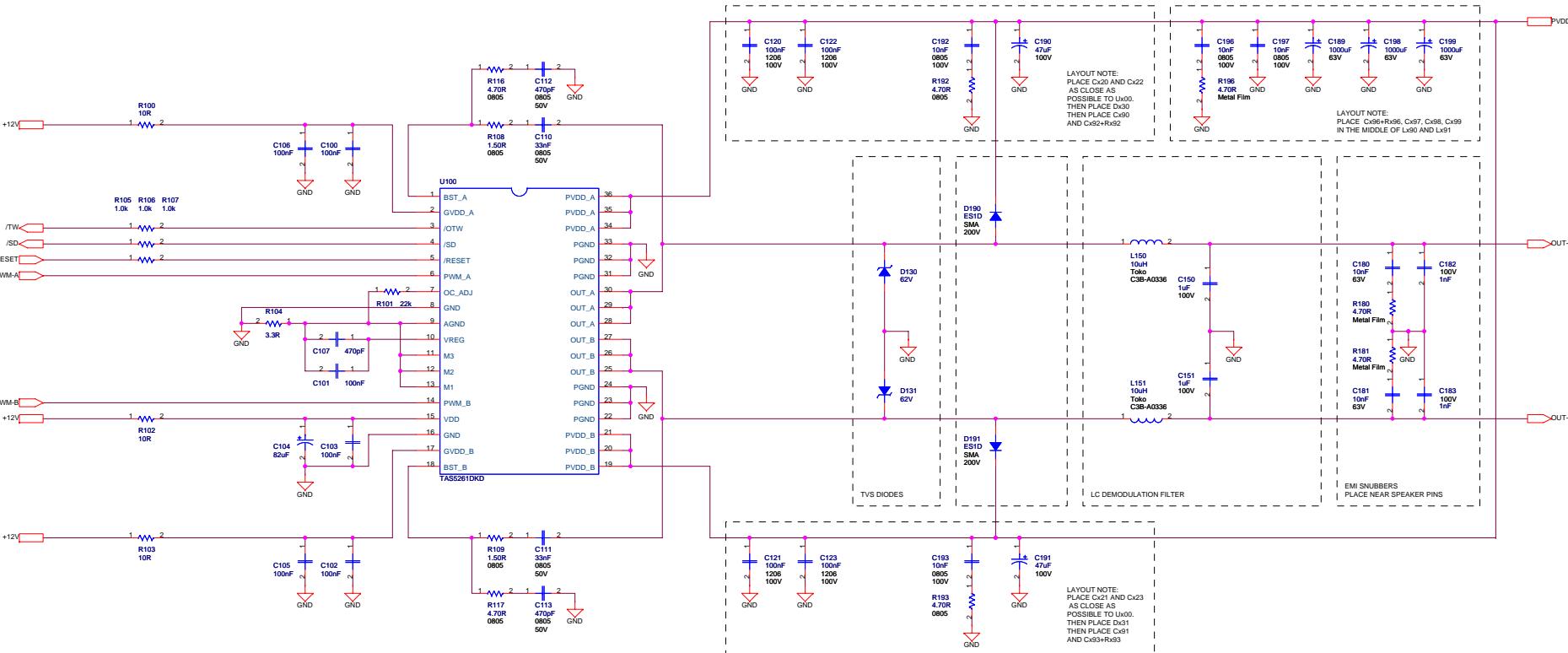
Project: A806-TAS5518-5261K2EVM Rev. 5.00

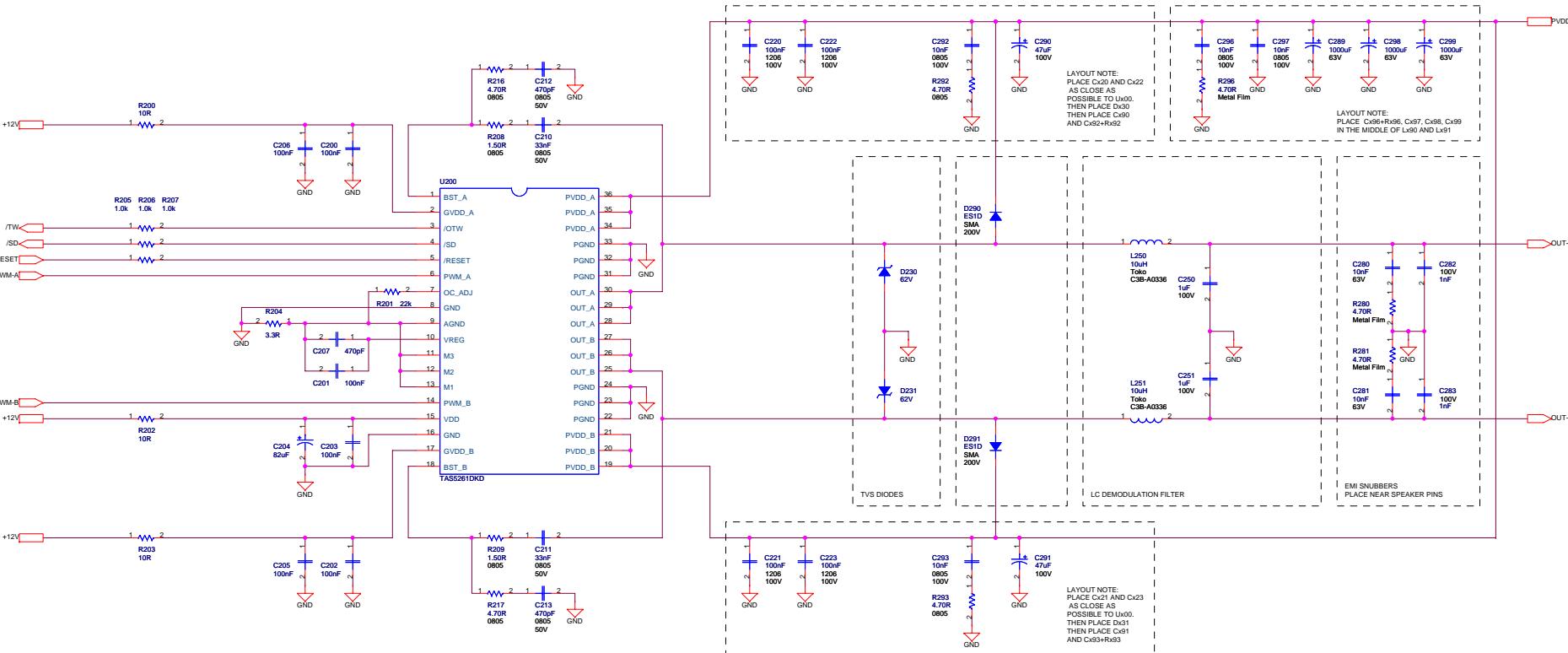
Page Title: Schematic Disclaimer Size: A2

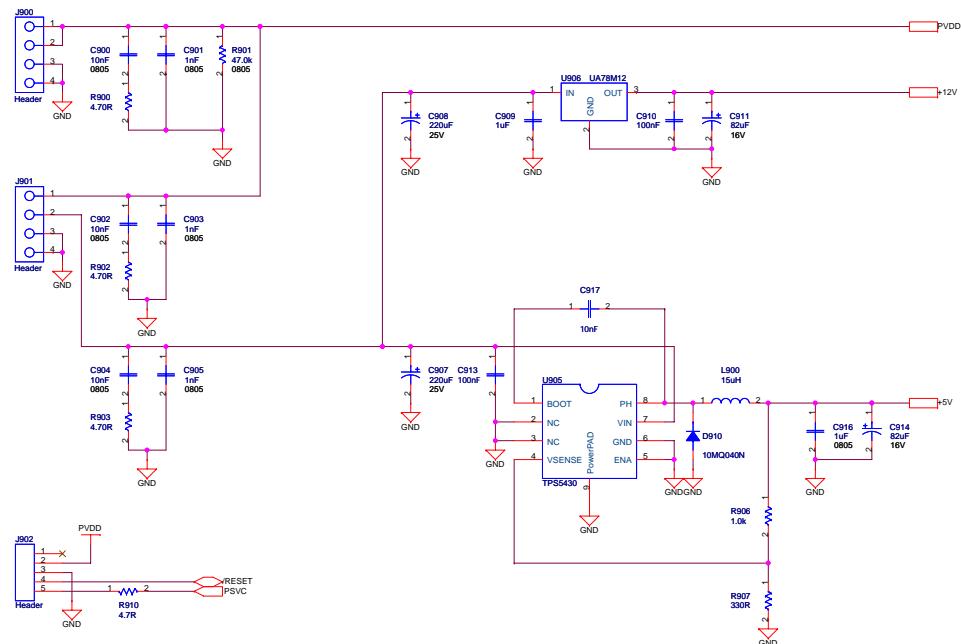
File Name: A806-SCH-001_5.00.DSN Engineer: Jonas Holm / Kim N Madsen

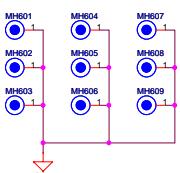
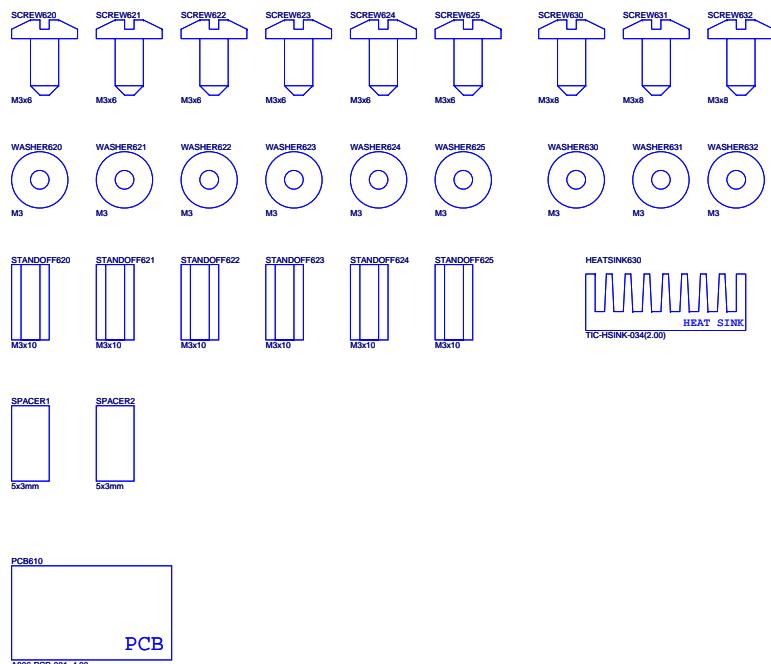
Date: Tuesday, March 06, 2007 Page: 1 of 6











Parts List 5.00

TEXAS INSTRUMENTS	DIGITAL AUDIO & VIDEO DIVISION
ALL RIGHTS RESERVED - PATENTS PENDING	TEXAS INSTRUMENTS INCORPORATED
Project: A806-TASS5518-6261IC2EVM	Rev. 5.00
Page Title: Mechanics	Size A2
File Name: A806-SCH-001_5.00.DSN	Engineer: Jonas Holm / Kim N Madse
Date: Tuesday, March 27, 2007	Page 6 of 6

A.2 TAS5518-5261K2EVM Parts List

The TAS5518-5261K2EM parts list is appended to this page.

TAS5518-5261K2EVM Parts List (5.00)



Qty	Part Reference	Description	Manufacture	First Mfr P/N
8	R71 R73 R75 R77 R108 R109 R208 R209	1.50R / 125mW / 1% / 0805 Metal Film Resistor	BC Components	DCU 0805 1% 1R50
1	R901	47.0k / 125mW / 1% / 0805 Metal Film Resistor	BC Components	DCU 0805 1% 47k0
	R116 R117 R180 R181 R192 R193 R196			
	R216 R217 R280 R281 R292 R293 R296			
17	R900 R902 R903	4.70R / 125mW / 1% / 0805 Metal Film Resistor	BC Components	DCU 0805 1% 4R70
	R50 R52 R56 R57 R105 R106 R107 R205			
11	R206 R207 R906	1.0k / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 1k00
	R20 R40 R42 R44 R45 R46 R47 R58 R59 R60			
14	R65 R66 R67 R68	10k / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 10k0
1	R16	1M / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 1M00
6	R100 R102 R103 R200 R202 R203	10R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 10R0
4	R10 R11 R54 R55	200R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 200R
2	R101 R201	22k / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 22k0
1	R907	330R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 330R
2	R104 R204	3.3R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 3R30
7	R13 R48 R70 R72 R74 R76 R910	4.7R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 4R70
7	R61 R62 R63 R64 R69 R87 R88	47R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 47R0
4	R30 R31 R36 R37	75R / 100mW / 5% / 0603 Metal Film Resistor	BC Components	DCT 0603 5% 75R0
	C192 C193 C196 C197 C292 C293 C296			
11	C297 C900 C902 C904	Ceramic 10nF / 100V / 20% X7R 0805 Capacitor	BC Components	0805B103M101NT
6	C73 C77 C81 C85 C909 C916	Ceramic 1uF / 25V / 10% X5R 0805 Capacitor	Panasonic	ECJ-2FB1E105K
4	C110 C111 C210 C211	Ceramic 33nF / 50V / 20% X7R 0805 Capacitor	BC Components	0805B333M500NT
	C120 C121 C122 C123 C220 C221 C222			
9	C223 C913	Ceramic 100nF / 100V / 20% X7R 1206 Capacitor	BC Components	1206B104M101NT
3	C901 C903 C905	Ceramic 1nF / 50V / 10% NP0 0805 Capacitor	BC Components	0805N102K500NT
4	C112 C113 C212 C213	Ceramic 470pF / 50V / 10% NP0 0805 Capacitor	BC Components	0805N471K500NT
3	C10 C13 C917	Ceramic 10nF / 50V / 20% X7R 0603 Capacitor	BC Components	0603B103M500NT
	C11 C12 C27 C71 C72 C74 C75 C78 C79 C82			
24	C83 C100 C101 C102 C103 C105 C106 C200	Ceramic 100nF / 16V / 20% X7R 0603 Capacitor	BC Components	0603B104M160NT
8	C201 C202 C203 C205 C206 C910	Ceramic 220nF / 16V / 20% X7R 0603 Capacitor	BC Components	0603B224M160NT
1	C18	Ceramic 1nF / 50V / 10% NP0 0603 Capacitor	BC Components	0603N102K500NT
2	C22 C23	Ceramic 15pF / 50V / 10% NP0 0603 Capacitor	BC Components	0603N150K500NT
2	C107 C207	Ceramic 470pF / 50V / 10% NP0 0603 Capacitor	BC Components	0603N471K500NT
4	C182 C183 C282 C283	Metal Film 1nF / 100V / 5% Polypropylene 5mm (W:4.5mm L:7.2mm) Capacitor	Wima	FKP 2 1000pF/5%/100Vdc PCM5
6	C189 C198 C199 C289 C298 C299	Electrolytic 1000uF / 63V / 20% Aluminium 7.5mm ø16mm FC Series - Low Impedance Capacitor	Panasonic	EEUFC1J102
2	C907 C908	Electrolytic 220uF / 25V / 20% Aluminium 3.5mm ø8mm FC Series - Low Impedance Capacitor	Panasonic	EEUFC1E221
4	C190 C191 C290 C291	Electrolytic 47uF / 100V / 20% Aluminium 5mm ø10mm FC Series - Low Impedance Capacitor	Panasonic	EEUFC2A470
12	C16 C19 C25 C28 C70 C76 C80 C84 C104	Electrolytic 82uF / 16V / 20% Aluminium 2mm ø5mm FC Series - Low Impedance Capacitor	Panasonic	EEUFC1C820
	C204 C911 C914			
4	C180 C181 C280 C281	Metal Film 10nF / 63V / 10% Polyester 5mm (W:2.5mm L:7.2mm) Capacitor	Wima	MKS 2 0.01uF/10%/63Vdc PCM5
4	C150 C151 C250 C251	Metal Film 1uF / 100V / 10% Polyester 10mm (W:5mm L:13mm) Capacitor	Wima	MKS 4 1uF/10%/100Vdc PCM10
4	L150 L151 L250 L251	10uH / Ferrite Inductor	Toko	C3B-A0336
1	L900	15uH / Ferrite Inductor	Kwang Sung	8080P-51-150K
4	D190 D191 D290 D291	1A / 200V Small Signal 15nS Epitaxial ES1D Diode (SMA)	Fairchild	ES1D
1	D910	1A / 40V Schottky 10MQ040N Diode (SMA)	Int. Rectifier	10MQ040N
4	D130 D131 D230 D231	62V 600W (1ms) Transient Voltage Suppressor Unidirectional 62V Zener (SMB)	ON/Motorola	P6SMB62AT3
2	U100 U200	TAS5261DKD / Mono Digital Audio PWM Power Output Stage (PSOP3-36)	Texas Instruments	TAS5261DKD
1	U10	TAS5518 / 8 ch PWM processor (AD, DAP, 192kHz, PWM-VOL) (TQFP64)	Texas Instruments	TAS5518PAG
1	U902	TPS3825-33 / 3.3V Supply Voltage Supervisor (SOP5-DBV)	Texas Instruments	TPS3825-33DBVT
1	U906	UA78M12 / 12V/500mA Positive Voltage Regulator (PFM2-KTP)	Texas Instruments	UA78M12CKTPR
1	U905	TPS5430 / 5V/3A Buck Converter (HSOP8-DDA)	Texas Instruments	TPS5430DDA
4	U70 U71 U72 U73	TPS79133 / 3.3V/100mA Low Dropout Regulator (Ultra Low Noise) (SOP5-DBV)	Texas Instruments	TPS79133DBVR
6	SCREW620 SCREW621 SCREW622			
6	SCREW623 SCREW624 SCREW625	M3x6 Pan Head, Pozidriv, A2 Screw	Bossard	BN 81882 M3x6
3	SCREW630 SCREW631 SCREW632	M3x8 Pan Head, Pozidriv, A2 Screw	Bossard	BN 81882 M3x8
	WASHER620 WASHER621 WASHER622			
6	WASHER623 WASHER624 WASHER625	M3 Stainless Steel Washer	Bossard	BN 670 M3
3	WASHER630 WASHER631 WASHER632	M3 Stainless Steel Spring Washer	Bossard	BN 760 M3
	STANDOFF620 STANDOFF621			
6	STANDOFF622 STANDOFF623			
6	STANDOFF624 STANDOFF625	M3x10 Aluminium Stand-off	Ettinger	05.03.108
2	SPACER1 SPACER2	5x3mm ø5mm Aluminium 3mm Spacer	Harwin	R2303-14
1	J902	5 pins / 1 row / 2.54mm Pitch Vertical Male Friction lock Pin header	Molex	22-27-2051

TAS5518-5261K2EVM Parts List (5.00)



2	J100 J200	2 pins / 1 row / 5.08mm Pitch Vertical Male Pin header Header	Tyco	350539-1
2	J900 J901	4 pins / 1 row / 3.96mm Pitch Vertical Male Pin header Header	JST	B4P-VH
1	J60	16 pins / 2 rows / 2.54mm Pitch Vertical Male IDC 16 pins IDC Box header	Molex	87256-1611
1	J40	34 pins / 2 rows / 2.54mm Pitch Vertical Male IDC 34 pins IDC Box header	Molex	87256-3411
1	X10	13.5MHz 13.5MHz SMD Crystal (HCM49)	Citizen	HCM49-13.500MABJT
1	PCB610	A806-PCB-001_4.00 / TAS5518-5261K2EVM Printed Circuit Board (ver. 4.00)	Printline	A806-PCB-001(4.00)
1	HEATSINK630	TIC-HSINK-034(2.00) / Heatsink for 2 DKD devices	THF-Teknik	TIC-HSINK-034(2.00)

A.3 TAS5518-5261K2EVM PCB Specification

The TAS5518-5261K2EM PCB specification is appended to this page.

TAS5518-5261K2EVM (A806)

PCB SPECIFICATION

Version 4.00

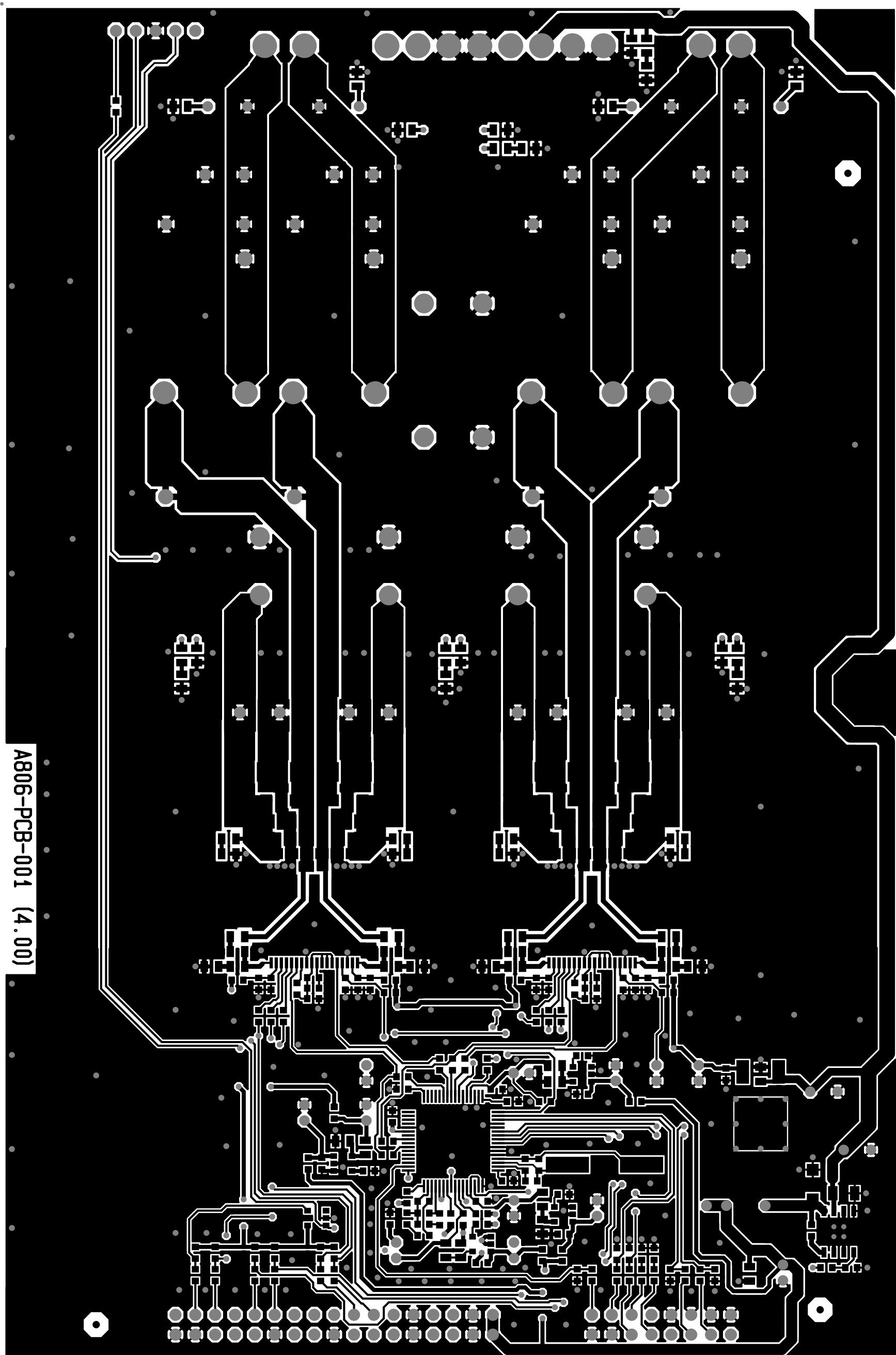
BOARD IDENTIFICATION:	A806-PCB-001(4.00)
BOARD TYPE:	DOUBLE-SIDED PLATED-THROUGH BOARD
LAMINATE TYPE:	FR4
LAMINATE THICKNESS:	1.6mm
COPPER THICKNESS:	70µm (INCL. PLATING EXTERIOR LAYER)
COPPER PLATING OF HOLES:	>25µm
MINIMUM HOLE DIAMETER	0.3 mm
SILKSCREEN COMPONENT SIDE:	WHITE - REMOVE SILKSCREEN FROM SOLDER AREA & PRE-TINNED AREAS
SILKSCREEN SOLDER SIDE:	None
SOLDER MASK COMPONENT SIDE:	GREEN
SOLDER MASK SOLDER SIDE:	GREEN
PROTECTIVE COATING:	SOLDER COATING AND CHEMICAL SILVER ON FREE COPPER
ELECTRICAL TEST:	PCB MUST BE ELECTRICAL TESTED
MANUFACTURED TO:	PERFAG 2E (www.perfag.dk)
APERTURE TABLE:	PERFAG 10A (www.perfag.dk)
BOARD SIZE:	115 x 174 mm
COMMENTS:	SEE DRILL INFORMATION FILE (5141pcb.PDF).

A.4 TAS5518-5261K2EVM PCB Layers

The TAS5518-5261K2EM PCB layers are appended to this page.

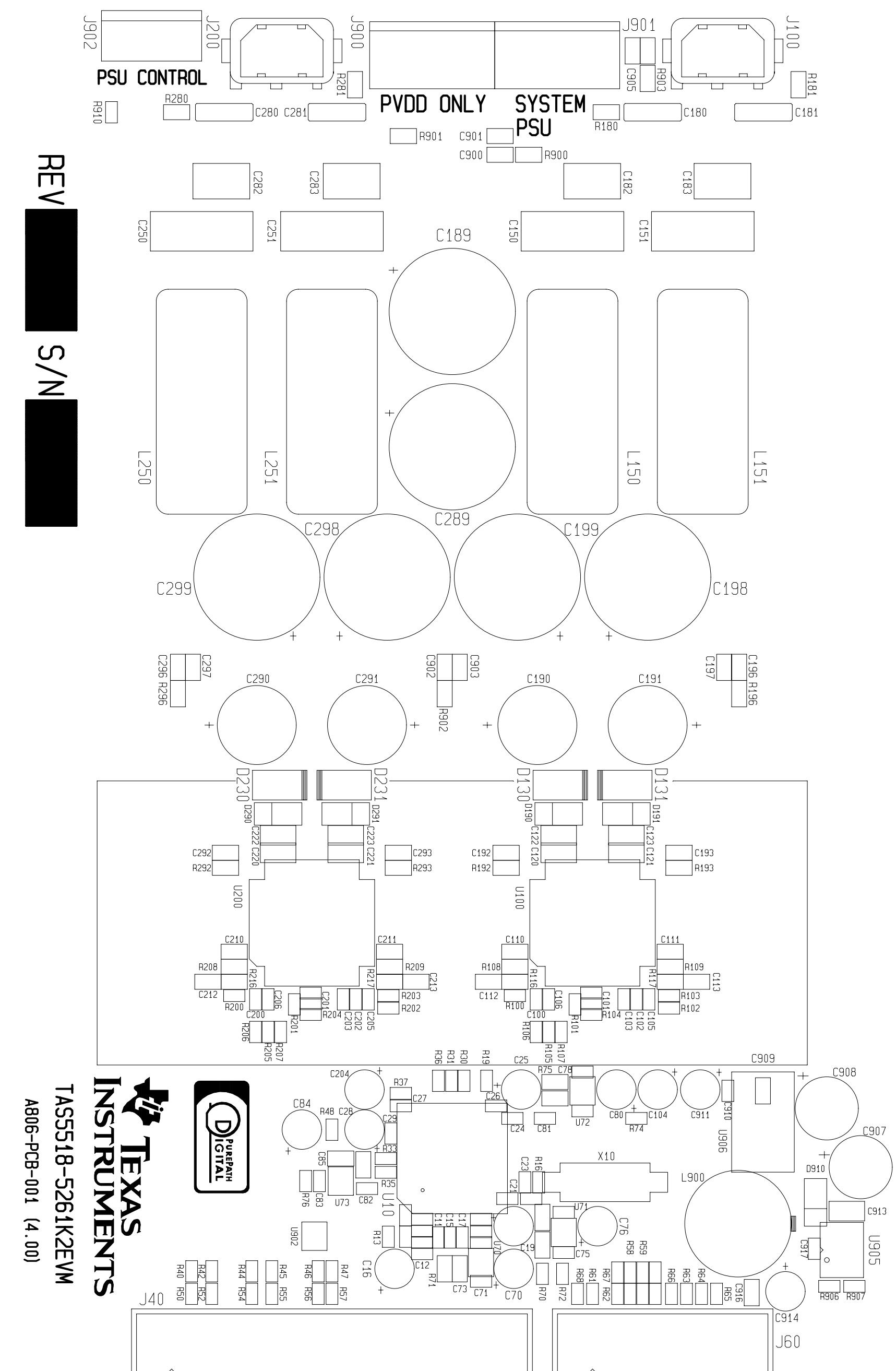
COMPONENT SIDE Dps 5141 070308

TI Denmark A806-PCB-001 (4.00)

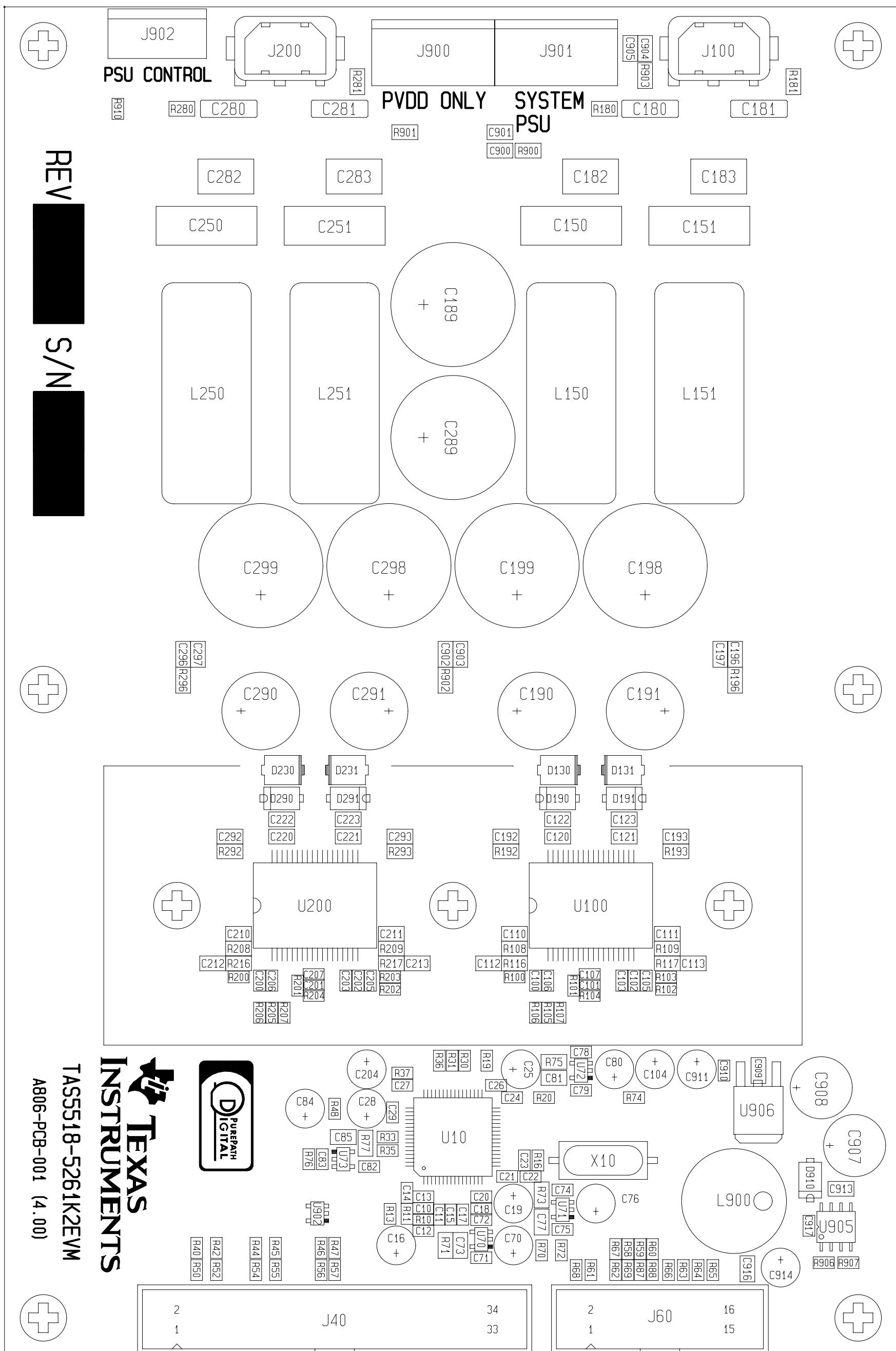


SILKSCREEN COMP | Dps 5141 070308

TI Denmark A806-PCB-001 (4.00)



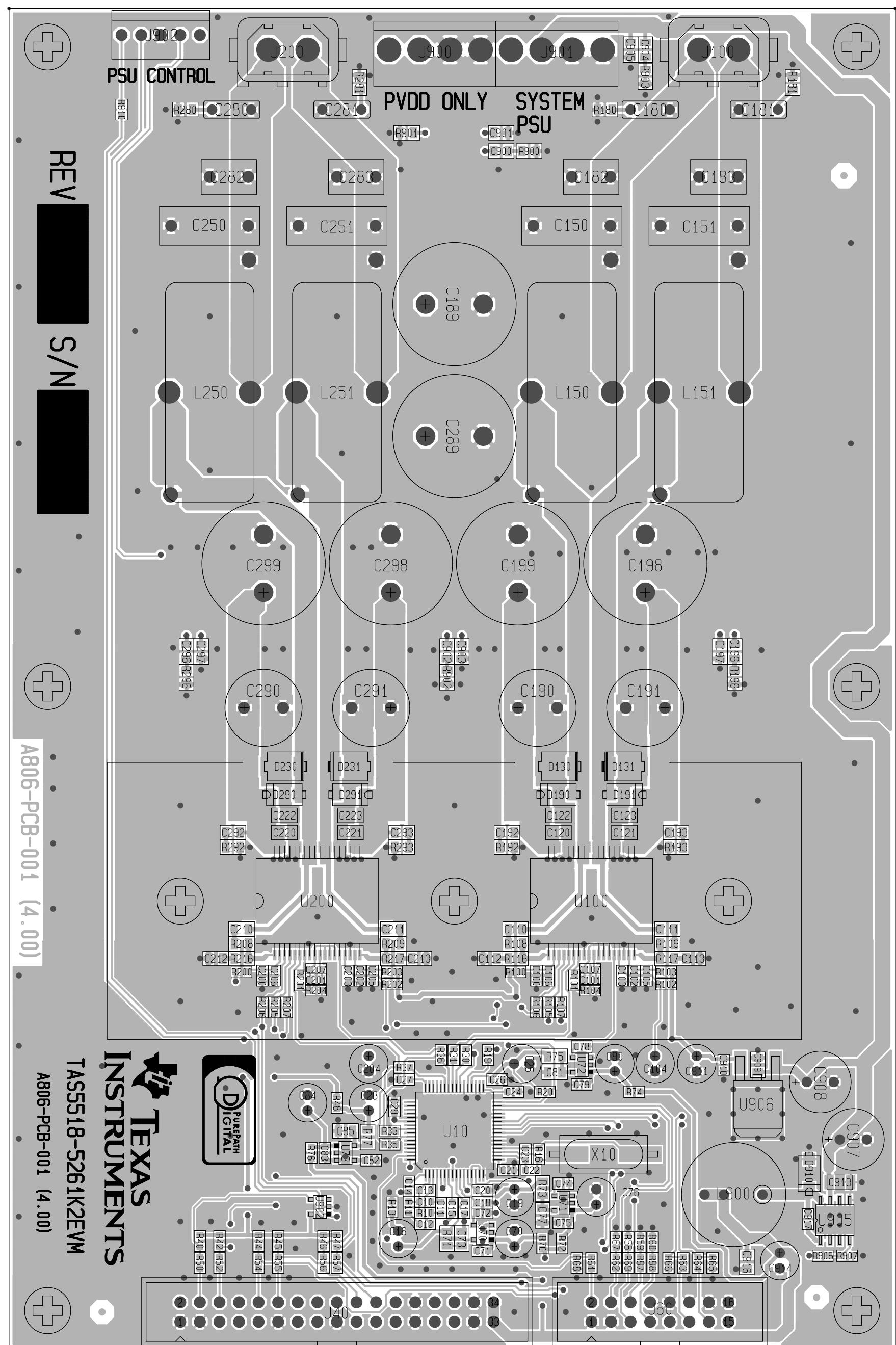
COMP. LAYOUT COMP DpS 5141 070308
TI Denmark A806-PCB-001 (4.00)



COMPONENT LAYOUTS COMP

DPS 5141 070308

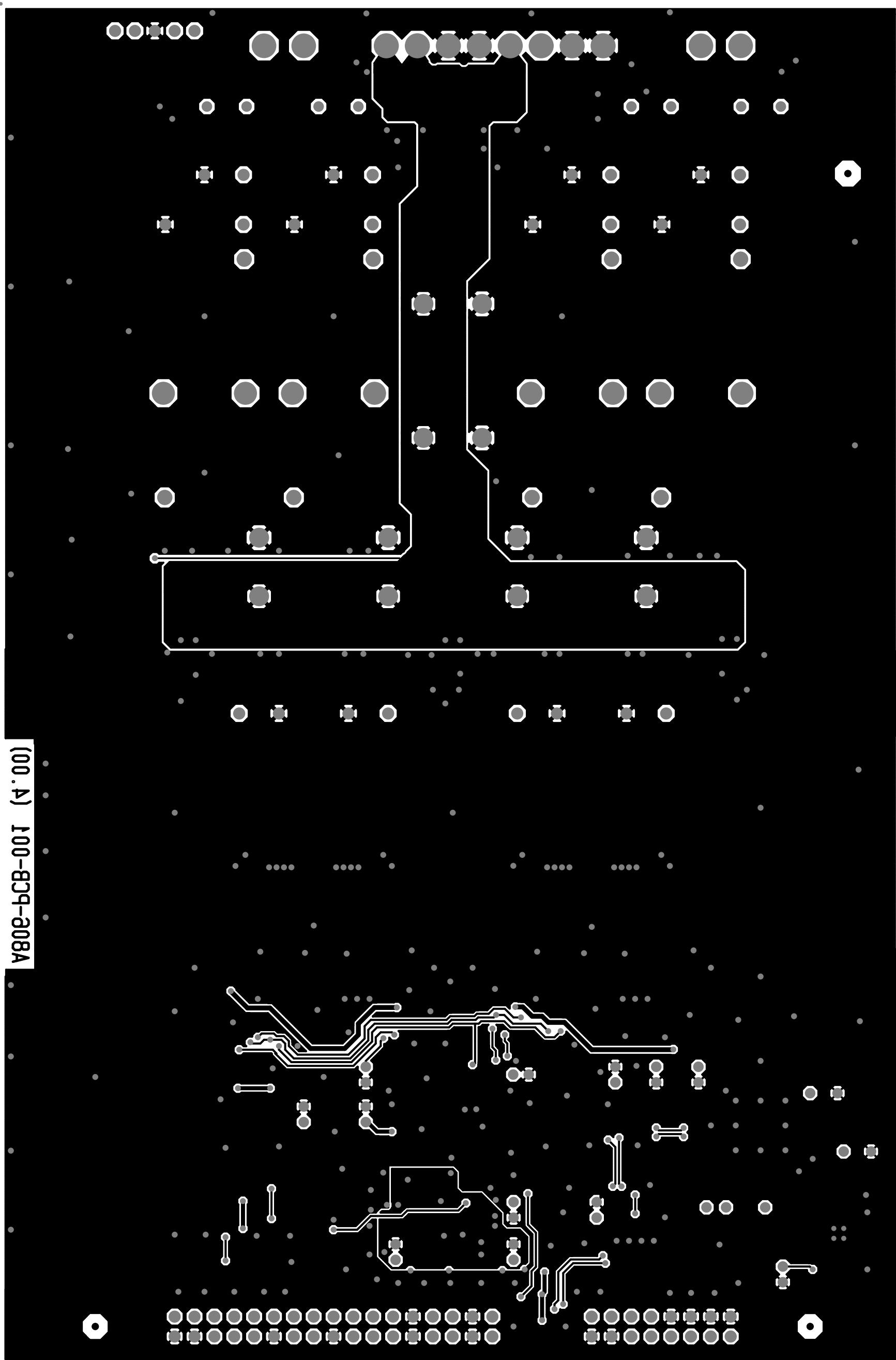
TI Denmark A806-PCB-001 (4.00)



SDP2141 070308

SOLDER SIDE

TI DebugLink A80E-PCB-001 (A.00)



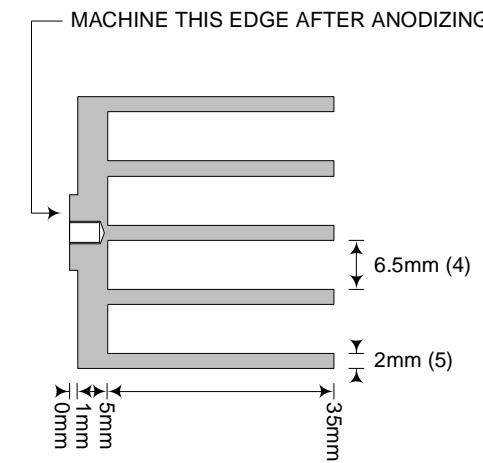
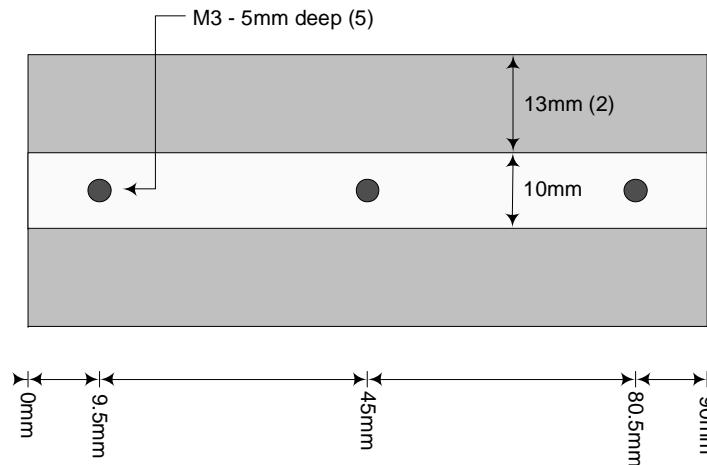
A80E-PCB-001 (A.00)

A.5 Heat Sink Drawing

The heat sink drawing is appended to this page.

TIC-HSINK-034 (2.00)
Heat Sink for 2 DKD devices

Jonas Svendsen



MATERIAL: ALUMINIUM

INTERNAL SCREW THREADS: M3

SURFACE: GLASS BLOWED, FREE OF SHARP EDGES

SURFACE TREATMENT: BLACK ANODIZED

TOLERANCES: +/- 0.1mm.

TAS5518-5261K2EVM Engineering Change Order

A.6 TAS5518-5261K2EVM Engineering Change Order

The engineering change order is appended to this page.

Board Name (A806)

Engineering Change Order

Affected Documents

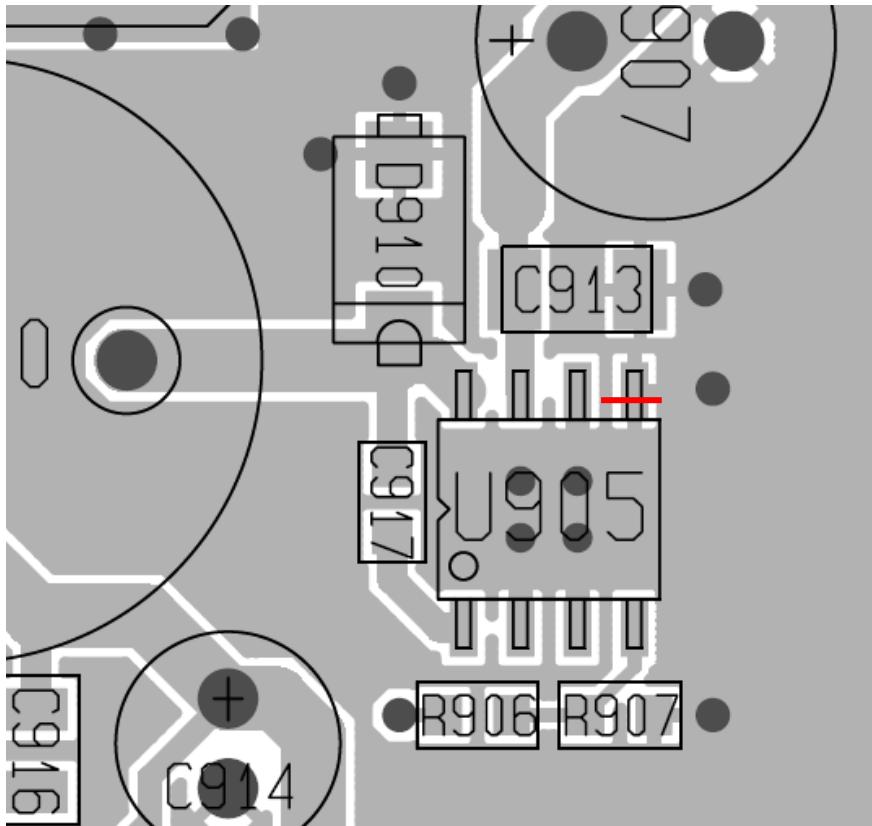
Board Revision: REV 6

Title	Document Number	Issue
Schematic	A806-SCH-001	5.00
Layout	A806-PCB-001	4.00

Modification Description

Pin 5 on U905 must be floating.

- Remove solder paste on pin 5
- Cut off leg for pin 5.



IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		Applications	
Amplifiers	amplifier.ti.com	Audio	www.ti.com/audio
Data Converters	dataconverter.ti.com	Automotive	www.ti.com/automotive
DSP	dsp.ti.com	Broadband	www.ti.com/broadband
Interface	interface.ti.com	Digital Control	www.ti.com/digitalcontrol
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
Microcontrollers	microcontroller.ti.com	Security	www.ti.com/security
Low Power Wireless	www.ti.com/lpw	Telephony	www.ti.com/telephony
		Video & Imaging	www.ti.com/video
		Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments
Post Office Box 655303 Dallas, Texas 75265