Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

ADI Balanced Solutions Essentials Kit

General Description

The ADI Balanced Solutions Essentials Kit delivers products on ready-to-use boards for immediate testing and prototyping. The Balanced Solutions Essentials Kit features products from the Buck, Boost, Buck-Boost, Flyback, and High-Performance Supervisor product lines.

Features

- Enables Immediate Testing of Eight Different Power Solutions and Supervisors
- Includes Buck and Boost Converters, Buck/Boost Converter, No-Opto Isolated Flyback, and High-Performance Supervisors

Quick Start

Required Equipment

- DC power supply with 12V, 5A output (ADPL76030, ADPL26001, ADPL13602, and ADPL54203)
- DC power supply with 2.5V, 1A output (ADPL20502)
- DC power supply with 3.3V, 0.5A output (ADPL62933, ADPL62935, and ADPL63164)
- Function generator-WDI watchdog input (ADPL62933, ADPL63164)
- One voltmeter
- Four banana-to-clip cables

Ordering Information **appears at end of data sheet.**

Setup

319-101096; Rev 0; 2/25

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Procedure

DC-DC Converters

Connect the power supply between the VIN and nearest GND terminal posts. Measure VOUT with a voltmeter. See Table 1 for VIN and VOUT for more details.

Table 1. DC-DC Converters Summary

BOARD	VIN			VOUT
	MINIMUM	TYPICAL	MAXIMUM	
ADPL76030	4V	12V	55V	12V
ADPL20502	1.2V	1.8V	2.5V	3V
ADPL26001	10V	12V	36V	48V
ADPL13602	6.5	12V	36V	5V
ADPL54203	10V	12V	28V	5V

High-Performance Supervisors

1. Connect the power supply between the VCC and GND terminal posts. Also, connect a 3.3V power supply across the ADPL63164.
2. For ADPL62933 and ADPL63164, connect a waveform generator across WDI and GND. See Table 2 for more details.
3. Connect the Reset output (RST) to the reset pin of a microcontroller or any device.

Table 2. High-Performance Supervisors Summary

BOARD	VCC	WDI	VMON
ADPL62935	3.3V	NA	NA
ADPL62933	3.3V	3.3V Pulse (Width >150ns) 1Hz	NA
ADPL63164	3.3V	3.3V Pulse (Width >300ns) 200Hz	3.3V

Detailed Description of Hardware

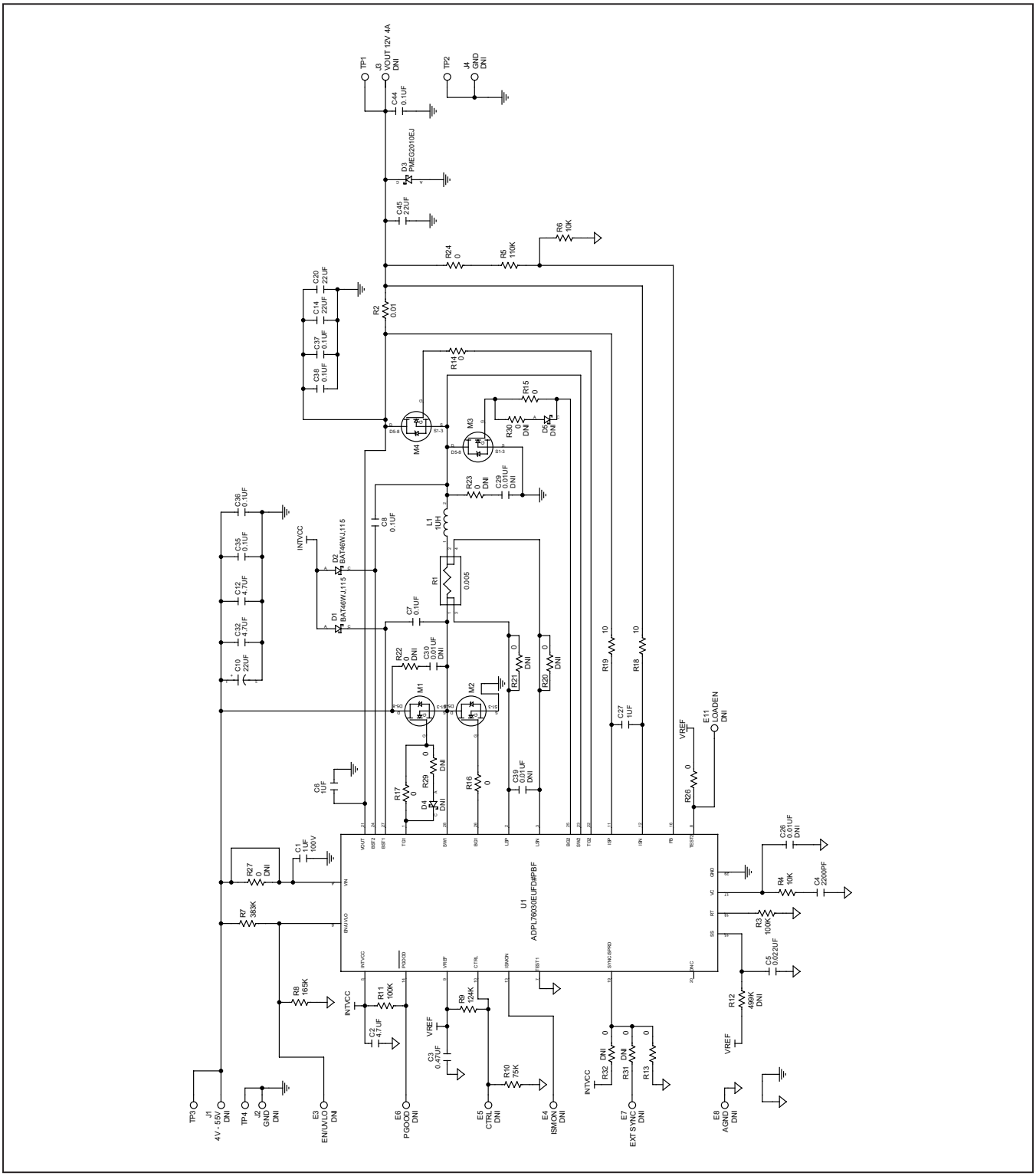
ADPL76030

The ADPL76030 is featured in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL76030, a 55V, 1.4MHz synchronous 4-switch buck-boost controller with spread spectrum. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL76030** for more information. Use the product evaluation kit to examine the product thoroughly.

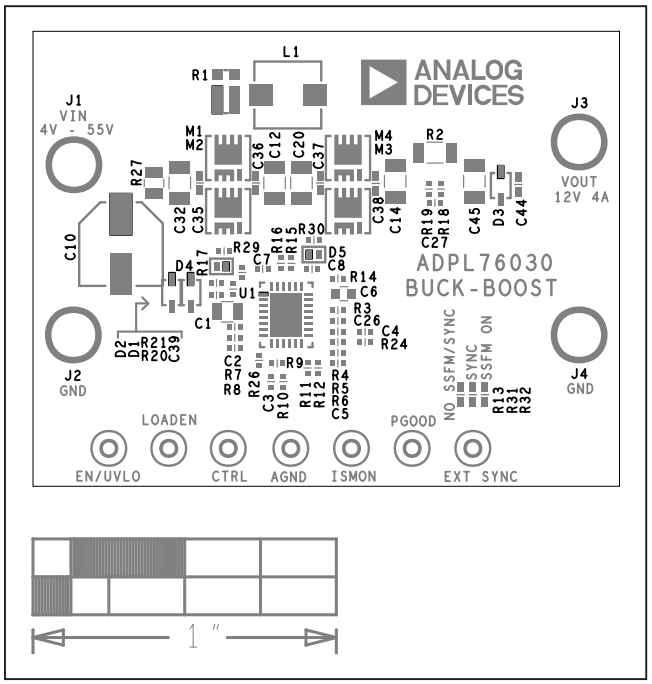
ADPL76030 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	-	1	C2012X7S2A105K125AB;GRJ21BC72A105KE11; GRM21BC72A105KE01	TDK;MURATA;MURATA	1UF	CAP; SMT (0805); 1UF; 10%; 100V; X7S; CERAMIC
2	C2	-	1	C1005X5R1A475K050	TDK	4.7UF	CAP; SMT (0402); 4.7UF; 10%; 10V; X5R; CERAMIC
3	C3	-	1	MSASE105AB5474KFNA01	TAIYO YUDEN	0.47UF	CAP; SMT (0402); 0.47UF; 10%; 16V; X5R; CERAMIC ;
4	C4	-	1	C0402C222J3RACAUTO	KEMET	2200PF	CAP; SMT (0402); 2200PF; 10%; 25V; X7R; CERAMIC
5	C5	-	1	C0402C223K3RAC; GRM155R71E223KA61; GCM155R71E223KA55; TMK105B7223KV; CL05B223KA5NNN	KEMET;MURATA;MURATA; TAIYO YUDEN;SAMSUNG	0.022UF	CAP; SMT (0402); 0.022UF; 10%; 25V; X7R; CERAMIC
6	C6	-	1	TMK107B7105KA; 06033C105KAT2A; C1608X7R1E105K080AE; CL10B105KA8NNN	TAIYO YUDEN;AVX;TDK; SAMSUNG ELECTRO-MECHANICS	1UF	CAP; SMT (0603); 1UF; 10%; 25V; X7R; CERAMIC
7	C7, C8	-	2	GRM155R71E104KE14; C1005X7R1E104K050BB; TMK105B7104KVH; CGJ2B3X7R1E104K050BB	MURATA;TDK; TAIYO YUDEN;TDK	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 25V; X7R; CERAMIC
8	C10	-	1	EEE-FK1J220XP	PANASONIC	22UF	CAP; SMT (CASE_D8); 22UF; 20%; 63V; ALUMINUM-ELECTROLYTIC
9	C12, C32	-	2	GRM31CC72A475ME11	MURATA	4.7UF	CAP; SMT (1206); 4.7UF; 20%; 100V; X7S; CERAMIC ;
10	C14, C20, C45	-	3	CL31A226KAHNNN	SAMSUNG ELECTRO-MECHANICS	22UF	CAP; SMT (1206); 22UF; 10%; 25V; X5R; CERAMIC;
11	C27	-	1	GRT155R61C105KE01	MURATA	1UF	CAP; SMT (0402); 1UF; 10%; 16V; X5R; CERAMIC
12	C35, C36	-	2	GRM155R62A104KE14	MURATA	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 100V; X5R; CERAMIC
13	C37, C38, C44	-	3	CGA2B3X7R1E104K050BB	TDK	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 25V; X7R; CERAMIC
14	D1, D2	-	2	BAT46WJ	NXP	BAT46WJ,115	DIODE; SCH; SMT (SOD-323F); PIV=100V; IF=0.25A
15	D3	-	1	PMEG2010EJ	NEXPERIA	PMEG2010EJ	DIODE; SCH; SMT (SOD-323F); PIV=20V; IF=1A
16	L1	-	1	74437336010	WURTH ELECTRONICS INC	1UH	INDUCTOR; SMT; SHIELDED; 1UH; 20%; 7.3A;
17	M1, M2	-	2	BSZ065N06LS5	INFINEON	BSZ065N06LS5	EVKIT PART - TRAN; NCH; OPTIMOS POWER TRANSISTOR;
18	M3, M4	-	2	BSZ031NE2LS5ATMA1	INFINEON	BSZ031NE2LS5ATMA1	EVKIT PART - TRAN; NCH; POWER MOSFET; TDSON-8; PD-(2.1W); I-(40A); V-(25V)
19	R1	-	1	KRL3216E-C-R005-F	SUSUMU CO LTD	0.05	RES; SMT (0612); 0.05; 1%; +/-200PPM/DEGC; 1.0W
20	R2	-	1	KRL1632E-M-R010-F	SUSUMU	0.01	RES; SMT (1206); 0.01; 1%; +/-50PPM/DEGC; 0.75W
21	R3	-	1	CRCW0402100KJN	VISHAY DALE	100K	RES; SMT (0402); 100K; 5%; +/-200PPM/DEGK; 0.0630W
22	R4, R6	-	2	CRCW040210K0FK	VISHAY	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGK; 0.0630W
23	R5	-	1	CRCW0402110KFK	VISHAY DALE	110K	RES; SMT (0402); 110K; 1%; +/-100PPM/DEGK; 0.0630W
24	R7	-	1	CRCW0402383KFK	VISHAY	383K	RES; SMT (0402); 383K; 1%; +/-100PPM/DEGC; 0.0630W
25	R8	-	1	CRCW0402165KFK	VISHAY DALE	165K	RES; SMT (0402); 165K; 1%; +/-100PPM/DEGC; 0.0630W
26	R9	-	1	CRCW0402124KFK	VISHAY DALE	124K	RES; SMT (0402); 124K; 1%; +/-100PPM/DEGC; 0.0630W
27	R10	-	1	CRCW040275K0FK; RC0402FR-0775KL	VISHAY;YAGEO	75K	RES; SMT (0402); 75K; 1%; +/-100PPM/DEGK; 0.0630W
28	R11	-	1	CRCW0402100KFK; RC0402FR-07100KL	VISHAY;YAGEO	100K	RES; SMT (0402); 100K; 1%; +/-100PPM/DEGC; 0.0630W
29	R13-R17, R24, R26	-	7	CRCW04020000Z0EDHP; RCS04020000Z0	VISHAY DRALORIC;VISHAY DALE	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.2000W
30	R18, R19	-	2	CRCW040210R0FK	VISHAY	10	RES; SMT (0402); 10; 1%; +/-100PPM/DEGC; 0.0630W
31	U1	-	1	ADPL76030EUFD#PBF	ANALOG DEVICES	ADPL76030EUFD#PBF	IC; CTRL; 55 V; 1.4 MHZ SYNCHRONOUS 4-SWITCH BUCK-BOOST CONTROLLER WITH SPREAD SPECTRUM; QFN28-EP
32	PCB	-	1	MAXADPL76030PE	MAXIM	PCB	PCB:MAXADPL76030PE
33	C26	DNP	0	ATC520L103KT16T	AMERICAN TECHNICAL CERAMICS	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 16V; X7R; CERAMIC
34	C29, C30	DNP	0	C0805C103K1RAC; GRM21BR72A103KA01; 08055C103KAT2A	KEMET;MURATA;AVX	0.01UF	CAP; SMT (0805); 0.01UF; 10%; 100V; X7R; CERAMIC
35	C39	DNP	0	HMK105B7103KVHFE	TAIYO YUDEN	0.01UF	CAP; SMT (0402); 0.01UF; 10%; 100V; X7R; CERAMIC
36	D4, D5	DNP	0	PMEG6002ELD	NEXPERIA	PMEG6002ELD	DIODE; SCH; SMT (DFN1006D-2); PIV=60V; IF=0.2A
37	E3-E8, E11	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
38	Q1	DNP	0	SI7113DN-T1-E3	VISHAY	SI7113DN-T1-E3	TRAN; P-CHANNEL 100V MOSFET; PCH; SO-8; PD-(52W); I-(13.2A); V-(100V);
39	R12	DNP	0	CRCW0402499KFK	VISHAY DALE	499K	RES; SMT (0402); 499K; 1%; +/-100PPM/DEGC; 0.0630W
40	R20, R21, R25,	DNP	0	CRCW04020000Z0EDHP; RCS04020000Z0	VISHAY DRALORIC;VISHAY DALE	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.2000W
41	R22, R23, R27	DNP	0	CRCW08050000Z0EAHP; HCJ0805ZT0R00	VISHAY; STACKPOLE ELECTRONICS INC.	0	RES; SMT (0805); 0; JUMPER; JUMPER; 0.5000W
42	R29, R30	DNP	0	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
TOTAL			50				

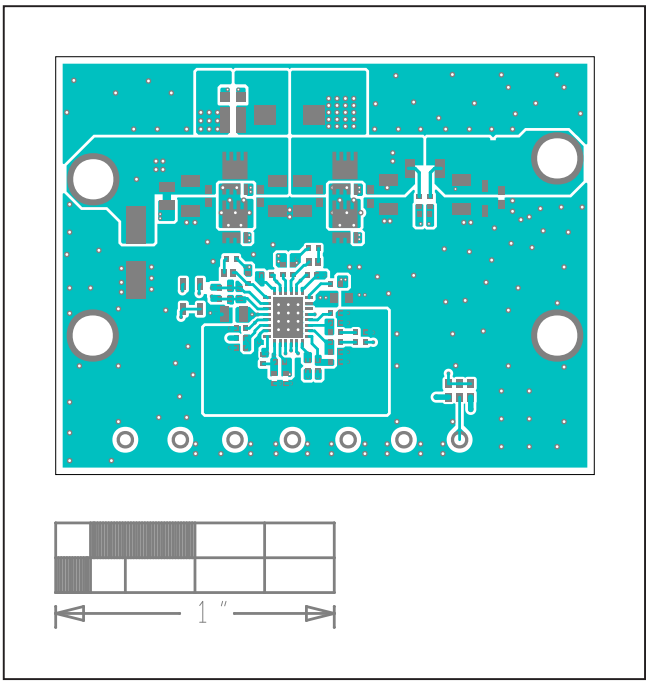
ADPL76030 Schematic



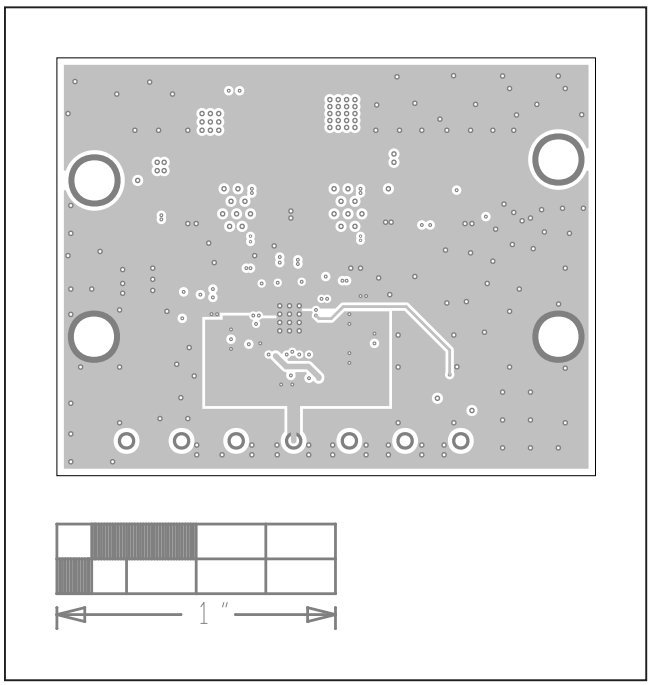
ADPL76030 PCB Layouts



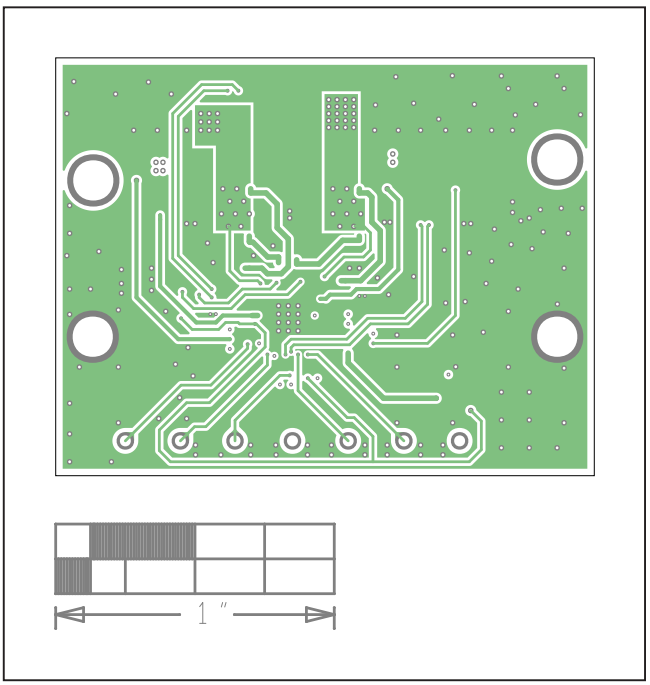
ADPL76030 EV System Component Placement Guide—Top Silkscreen



ADPL76030 EV System PCB Layout—Top

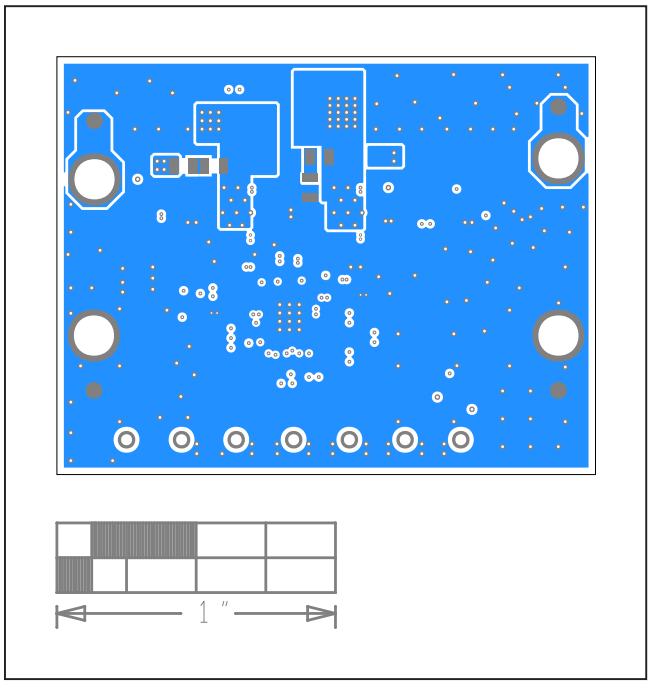


ADPL76030 EV System PCB Layout—Internal2

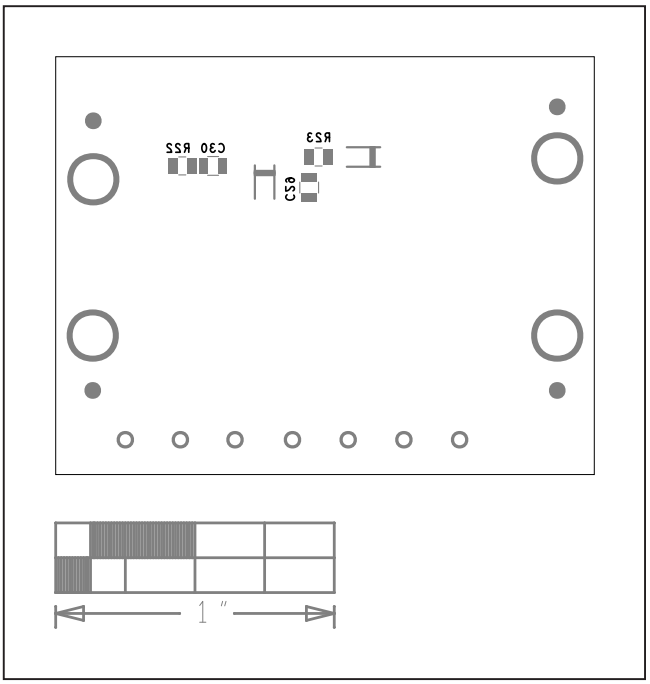


ADPL76030 EV System PCB Layout—Internal3

ADPL76030 PCB Layouts (continued)



ADPL76030 EV System PCB Layout—Bottom



ADPL76030 EV System PCB Layout—Bottom Silkscreen

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

ADPL13602

The ADPL13602 is featured in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL13602, a 3.5V to 36V input, 2.4A, high-efficiency, synchronous step-down DC-DC converter. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL13602** for more information. Use the product evaluation kit to examine the product thoroughly.

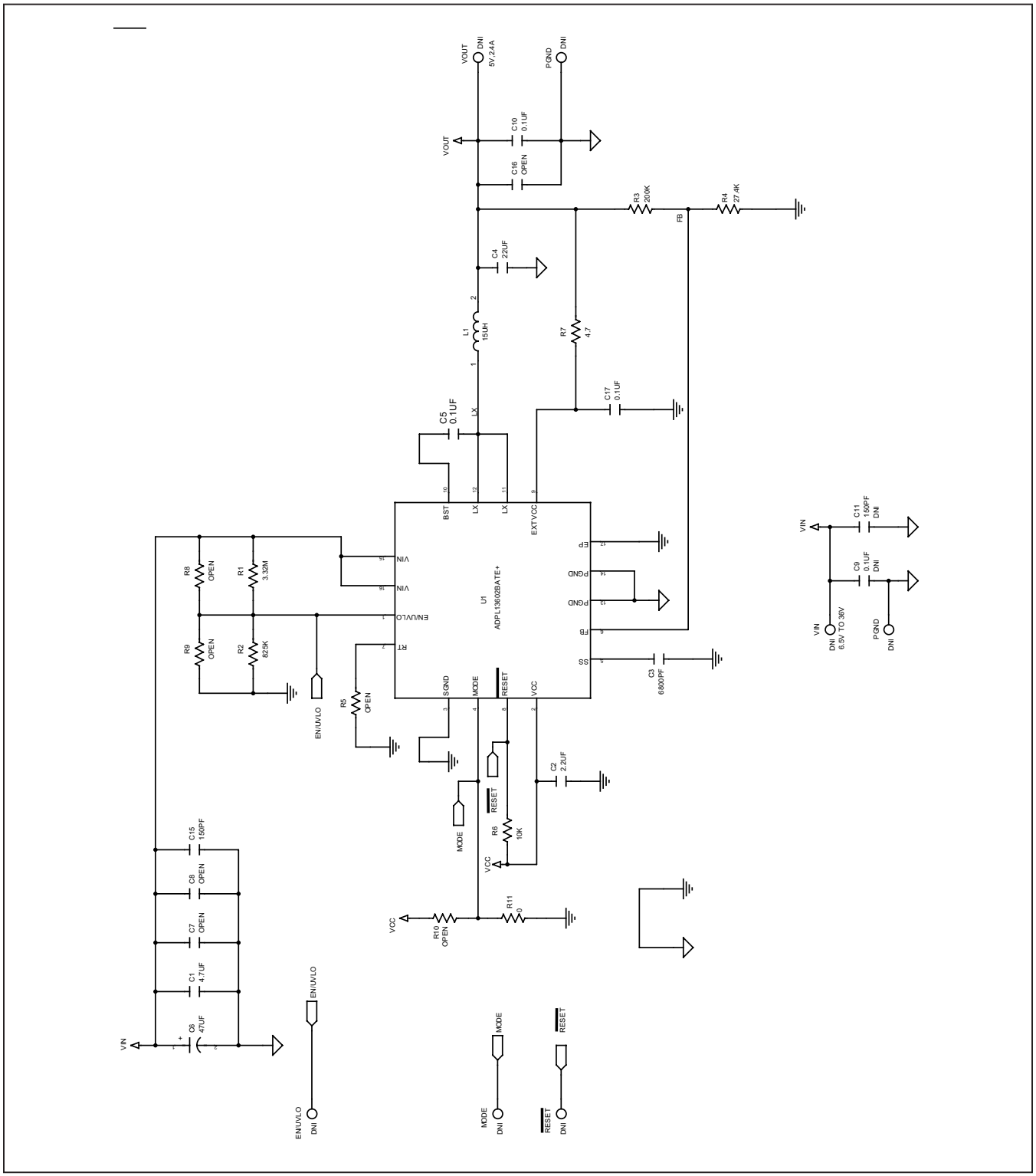
ADPL13602 Bill of Materials

ITEM	QTY	REF DES	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	1	C1	GRM31CR71H475KA12; GRJ31CR71H475KE11; GXM31CR71H475KA10; UMK316AB7475KL; GRM31CR71H475KA12L; CC1206KKX7R9BB475;	MURATA;MURATA; MURATA; TAIYO YUDEN; MURATA;YAGEO	4.7UF	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
2	1	C2	GRM188R71A225KE15; CL10B225KP8NNN; C1608X7R1A225K080AC; C0603C225K8RAC	MURATA;SAMSUNG; TDK;KEMET	2.2UF	CAP; SMT (0603); 2.2UF; 10%; 10V; X7R; CERAMIC
3	1	C3	C1005X7R1H682K050BA; C0402C682K5RAC; GRM155R71H682KA88; GCM155R71H682KA55	TDK;KEMET; MURATA;MURATA	6800PF	CAP; SMT (0402); 6800PF; 10%; 50V; X7R; CERAMIC
4	1	C4	GRM32ER71E226M; GRM32ER71E226ME15; C3225X7R1E226M250AB	MURATA;MURATA;TDK	22UF	CAP; SMT (1210); 22UF; 20%; 25V; X7R; CERAMIC
5	3	C5, C10, C17	C1005X7R1C104K050BC; ATC530L104KT16; 0402YC104KAT2A; C0402X7R160-104KNE; CL05B104KO5NNNC; GRM155R71C104KA88; C1005X7R1C104K; CC0402KRX7R7BB104; EMK105B7104KV; CL05B104KO5; C0402C104K4RAC7867	TDK; AMERICAN TECHNICAL CERAMICS; AVK;VENKEL LTD.; SAMSUNG ELECTRONICS; MURATA;TDK; YAGEO PHICOMP; TAIYO YUDEN; SAMSUNG ELECTRONICS; KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 16V; X7R; CERAMIC
6	1	C6	EEE-TG1H470UP	PANASONIC	47UF	CAP; SMT (CASE_F); 47UF; 20%; 50V; ALUMINUM-
7	1	C15	C1005C0G2A151J050BA	TDK	150PF	CAP; SMT (0402); 150PF; 5%; 100V; C0G; CERAMIC
8	1	L1	XGL5050-153ME	COILCRAFT	15UH	INDUCTOR; SMT; COMPOSITE; 15UH; 20%; 4.6A
9	1	R1	CRCW04023M32FK	VISHAY DALE	3.32M	RES; SMT (0402); 3.32M; 1%; +/-100PPM/DEGK; 0.0630W
10	1	R2	CRCW0402825KFK	VISHAY DALE	825K	RES; SMT (0402); 825K; 1%; +/-100PPM/DEGK; 0.0630W
11	1	R3	CRCW0402200KFK; RF73H1ELTP2003	VISHAY DALE; KOA SPEER ELECTRONICS	200K	RES; SMT (0402); 200K; 1%; +/-100PPM/DEGC; 0.0630W
12	1	R4	CRCW040227K4FK	VISHAY DALE	27.4K	RES; SMT (0402); 27.4K; 1%; +/-100PPM/DEGC; 0.0630W
13	1	R6	RC0402FR-0710KL; CR0402-FX-1002GLF	YAGEO;BOURNS	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGC; 0.0630W
14	1	R7	CRCW04024R70FK	VISHAY DALE	4.7	RES; SMT (0402); 4.7; 1%; +/-100PPM/DEGC; 0.0630W
15	1	R11	CRCW04020000Z0EDHP; RCS04020000Z0	VISHAY DRALORIC; VISHAY DALE	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.2000W
16	1	U1	ADPL13602BATE+	ANALOG DEVICES	ADPL13602BATE+	EVKIT PART - IC; CONV; 3.5V TO 36V; 2.4A; HIGH-EFFICIENCY; SYNCHRONOUS STEP-DOWN DC-DC CONVERTER; TQFN16-EP
17	1	PCB	MAXADPL13602PE	MAXIM	PCB	PCB:MAXADPL13602PE
TOTAL	19					

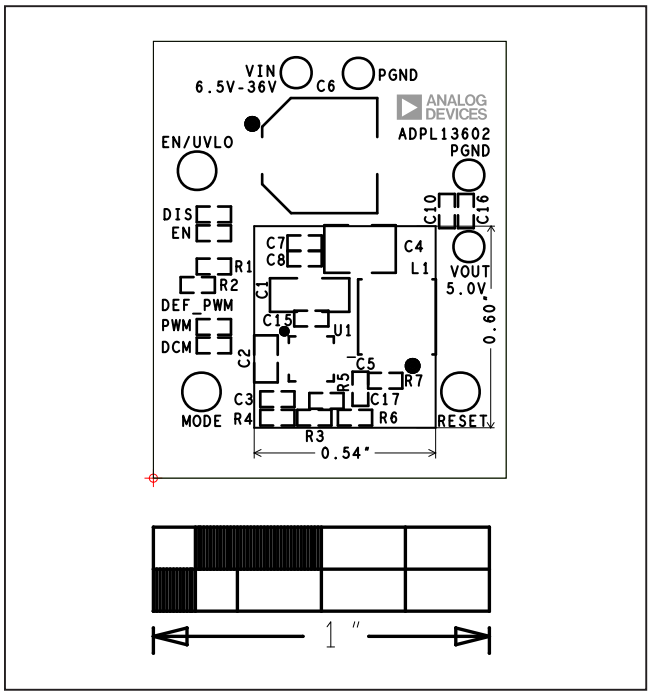
ADPL13602 Bill of Materials (continued)

DO NOT PURCHASE(DNP)						
ITEM	**QTY**	**REF DES**	**MFG PART #**	**MANUFACTURER**	**VALUE**	**DESCRIPTION**
1	1	C9	4; C1005X7R1H104K050BE; UMK105B7104KV-FR; 04025C104KAT2A	TDK;MURATA;TDK; TAIYO YUDEN;AVX	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 50V; X7R; CERAMIC
2	1	C11	C1005C0G2A151J050BA	TDK	150PF	CAP; SMT (0402); 150PF; 5%; 100V; C0G; CERAMIC
3	3	EN/UVLO, MODE, RESET	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER; NOT FOR COLD TEST
4	3	C7, C8, C16	N/A	N/A	OPEN	PACKAGE OUTLINE 0402 NON-POLAR CAPACITOR - EVKIT
5	4	R5, R8-R10	N/A	N/A	OPEN	PACKAGE OUTLINE 0402 RESISTOR - EVKIT
TOTAL	12					

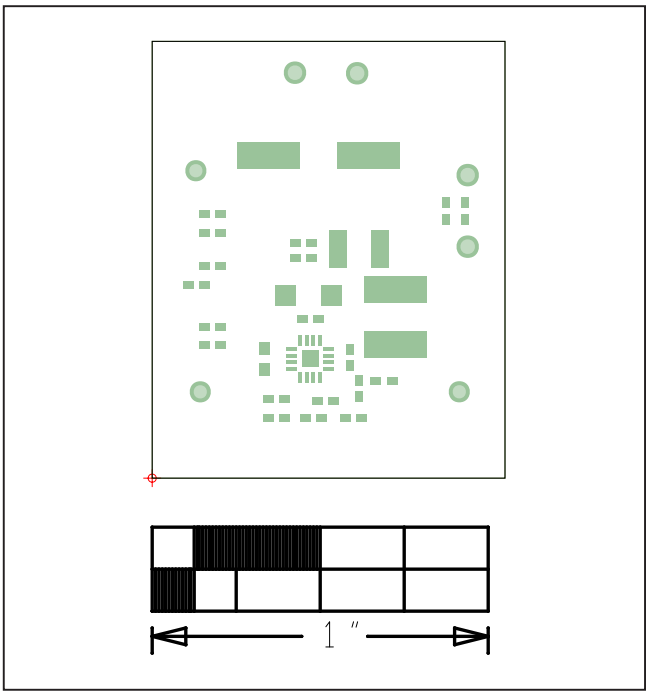
ADPL13602 Schematic



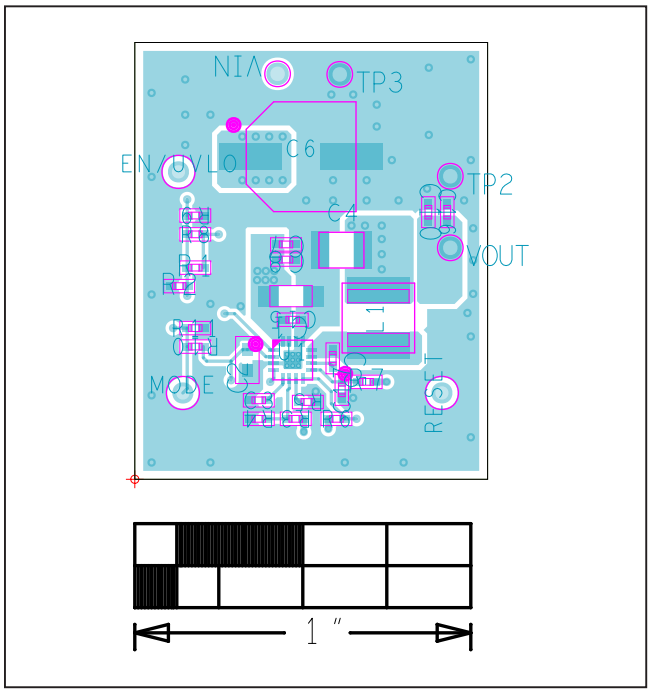
ADPL13602 PCB Layouts



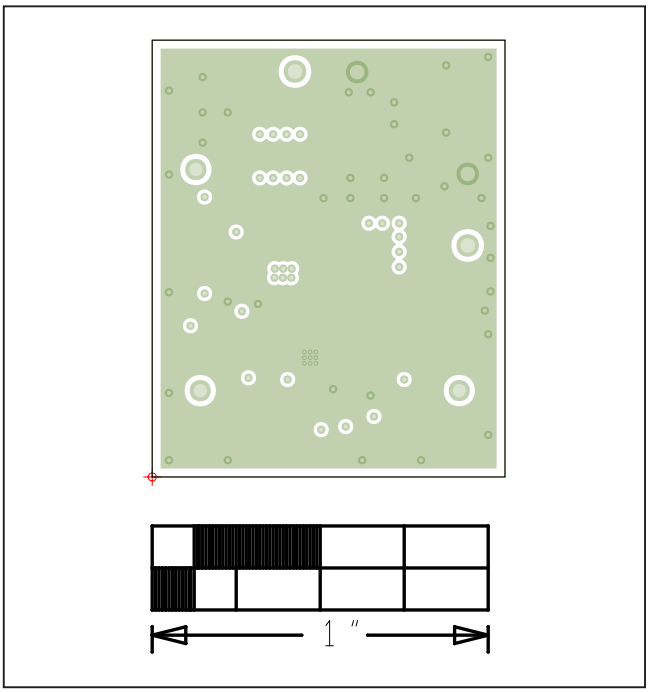
ADPL13602 EV System Component Placement Guide—Top Silkscreen



ADPL13602 EV System PCB Layout—Mask Top

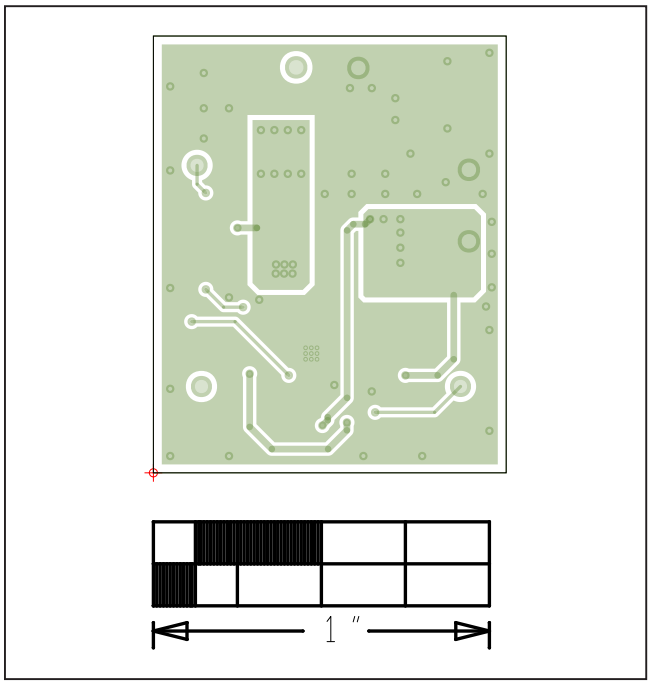


ADPL13602 EV System PCB Layout—Top

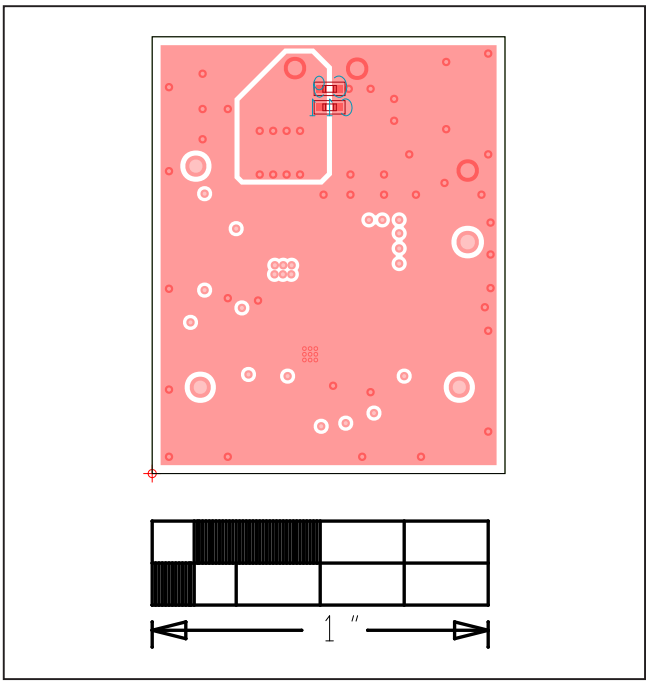


ADPL13602 EV System PCB Layout—L2 GND

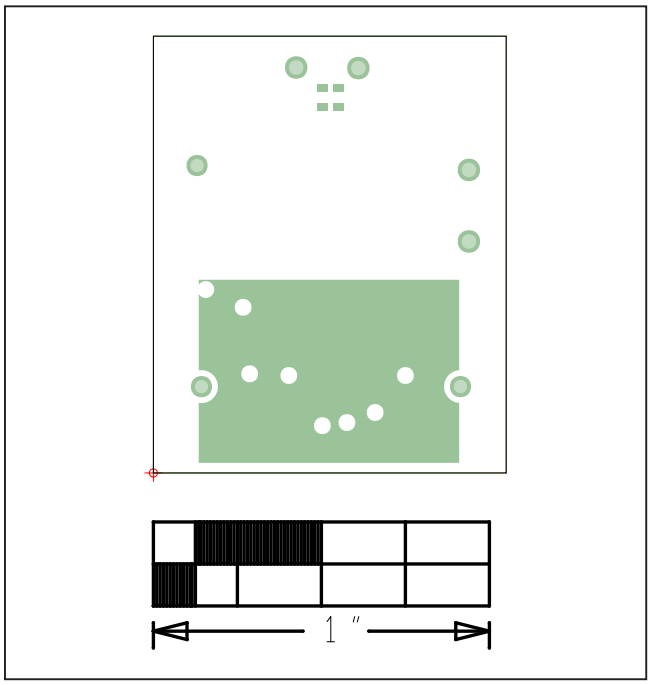
ADPL13602 PCB Layouts (continued)



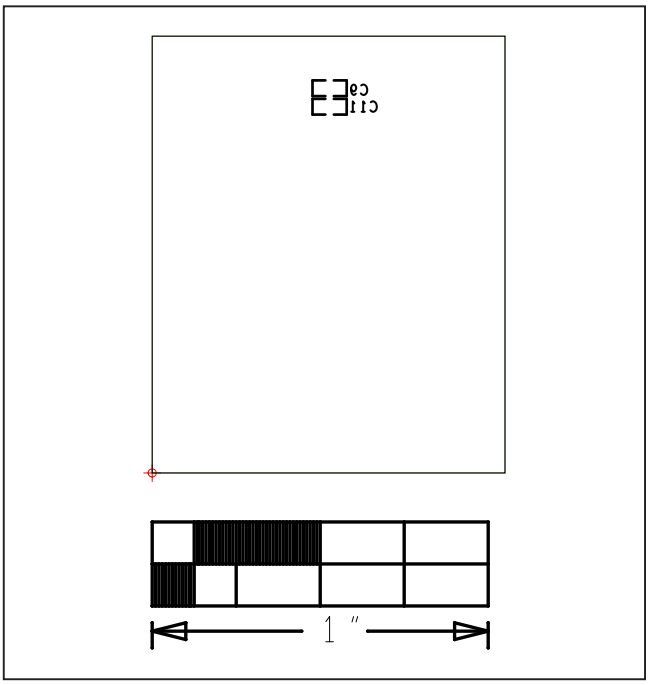
ADPL13602 EV System PCB Layout—L3 GND



ADPL13602 EV System PCB Layout—Bottom



ADPL13602 EV System PCB Layout—Mask Bottom



ADPL13602 EV System PCB Layout—Bottom Silkscreen

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

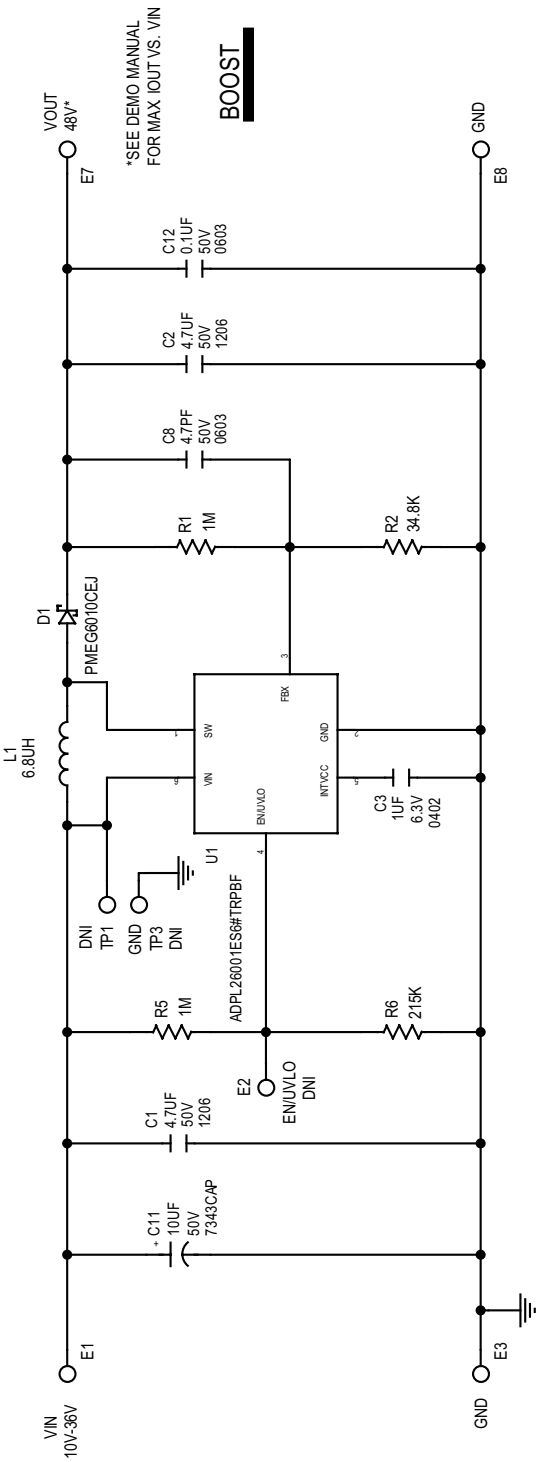
ADPL26001

The ADPL26001 is featured in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL26001, low-I_Q boost/SEPIC/inverting converter with 1A, 60V switch. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL26001** for more information. Use the product evaluation kit to examine the product thoroughly.

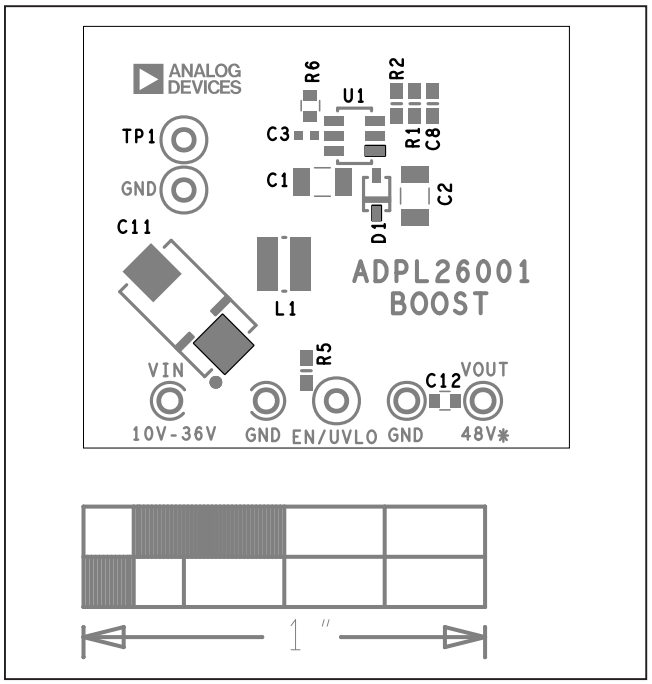
ADPL26001 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1, C2	-	2	GRM31CR71H475KA12;GRJ31CR71H475KE11; GXM31CR71H475KA10;UMK316AB7475KL; GRM31CR71H475KA12L;CC1206KKX7R9BB475; CC1206KKX7R9BB475	MURATA;MURATA; MURATA; TAIYO YUDEN; MURATA;YAGEO	4.7UF	CAP; SMT (1206); 4.7UF; 10%; 50V; X7R; CERAMIC
2	C3	-	1	C0402X5R6R3-105KNP;C1005X5R0J105K050BB; GRM155R60J105KE19;JMK105BJ105KV-F; JMK105BJ105KVHF;CC0402KRX5R5BB105	VENKEL LTD;TDK; MURATA; TAIYO YUDEN; TAIYO YUDEN;YAGEO	1UF	CAP; SMT (0402); 1UF; 10%; 6.3V; X5R; CERAMIC;
3	C8	-	1	CL10C4R7BB8NNN	SAMSUNG ELECTRO-MECHANICS	4.7PF	CAP; SMT (0603); 4.7PF; +/-0.1PF; 50V; C0G; CERAMIC ;
4	C11	-	1	TCJD106M050R0120	KYOCERA	10UF	CAP; SMT (7343-31); 10UF; 20%; 50V; N/A; TANTALUM ;
5	C12	-	1	C0603C104K5RAC;C1608X7R1H104K; ECJ-1VB1H104K;GRM188R71H104KA93; CGJ3E2X7R1H104K080AA; C1608X7R1H104K080AA;CL10B104KB8NNN; CL10B104KB8NFN;06035C104KAT2A; 06035C104KAT4A	KEMET;TDK;PANASONIC; MURATA;TDK;TDK;SAMSUNG; SAMSUNG;AVX;AVX	0.1UF	CAP; SMT (0603); 0.1UF; 10%; 50V; X7R; CERAMIC;
6	D1	-	1	PMEG6010CEJ	NEXPERIA	PMEG6010CEJ	DIODE; SCH; SMT (SOD-323F); PIV=60V; IF=1A
7	L1	-	1	74438335068	WURTH ELECTRONICS INC	6.8UH	INDUCTOR; SMT; SHIELDED; 6.8UH; 20%; 1.1A
8	R1, R5	-	2	CRCW06031M00FK; MCR03EZPFX1004	VISHAY DALE;ROHM	1M	RES; SMT (0603); 1M; 1%; +/-100PPM/DEGC; 0.1000W
9	R2	-	1	ERJ-3EKF3482;RC0603FR-0734K8L	PANASONIC;YAGEO	34.8K	RES; SMT (0603); 34.8K; 1%; +/-100PPM/DEGC; 0.1000W
10	R6	-	1	RC0603FR-07215KL	YAGEO	215K	RES; SMT (0603); 215K; 1%; +/-100PPM/DEGC; 0.1000W
11	U1	-	1	ADPL26001ES6#TRPBF	ANALOG DEVICES	ADPL26001ES6#TRPBF	IC; VCON; LOW IQ BOOST/SEPIC/INVERTING CONVERTER WITH 1A; 60V SWITCH; TSOT23-6
12	PCB	-	1	MAXADPL26001PE	MAXIM	PCB	PCB:MAXADPL26001PE
13	E2, TP1, TP3	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE
TOTAL			14				

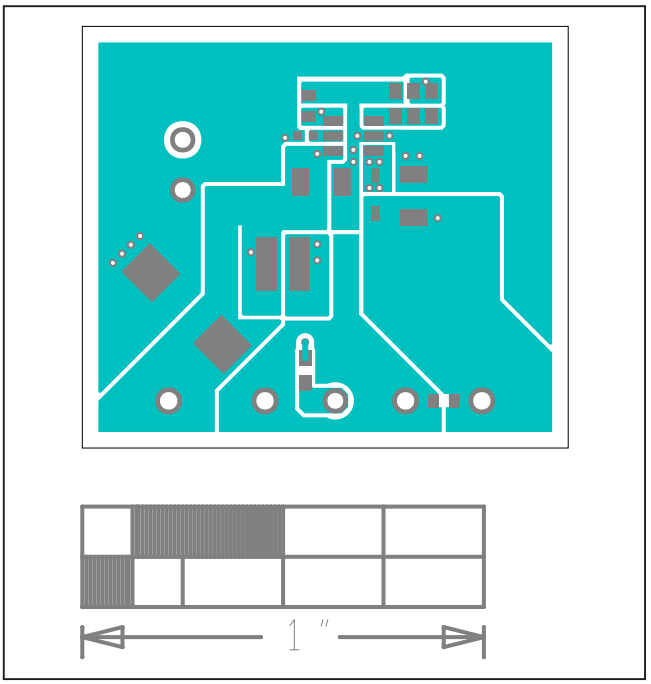
ADPL26001 Schematic



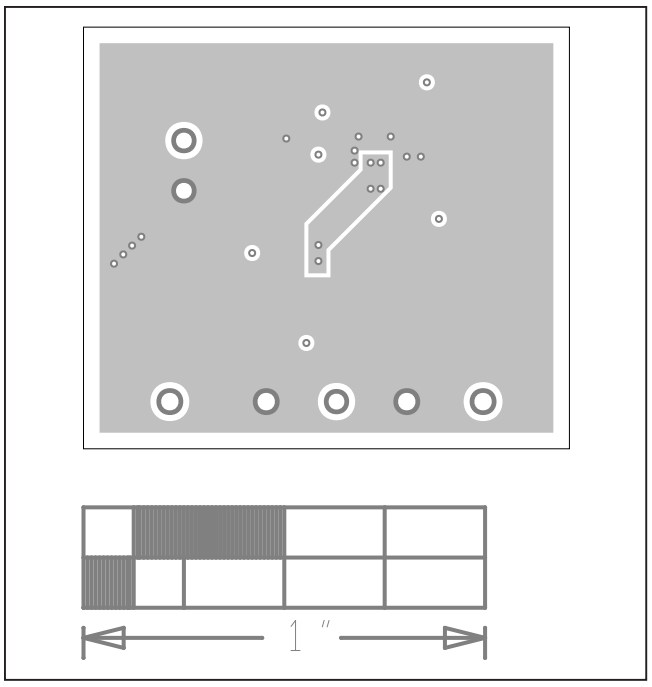
ADPL26001 PCB Layouts



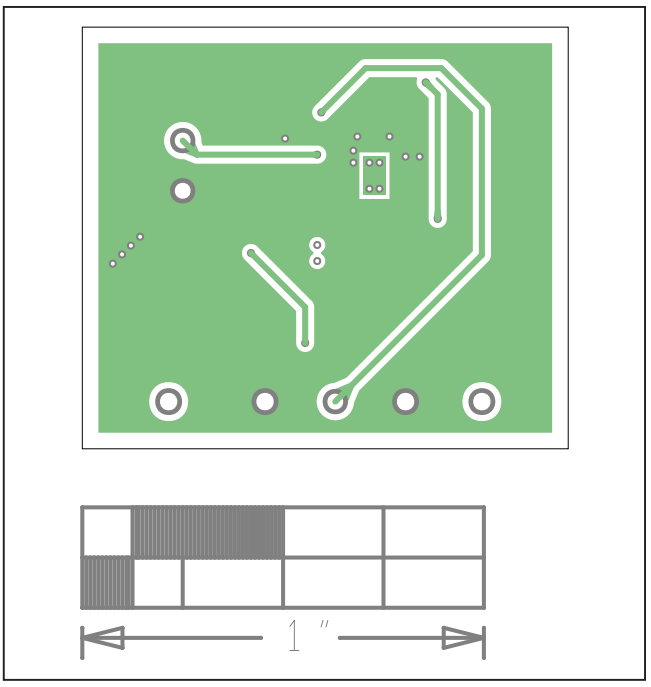
ADPL26001 EV System Component Placement Guide—Top Silkscreen



ADPL26001 EV System PCB Layout—Top

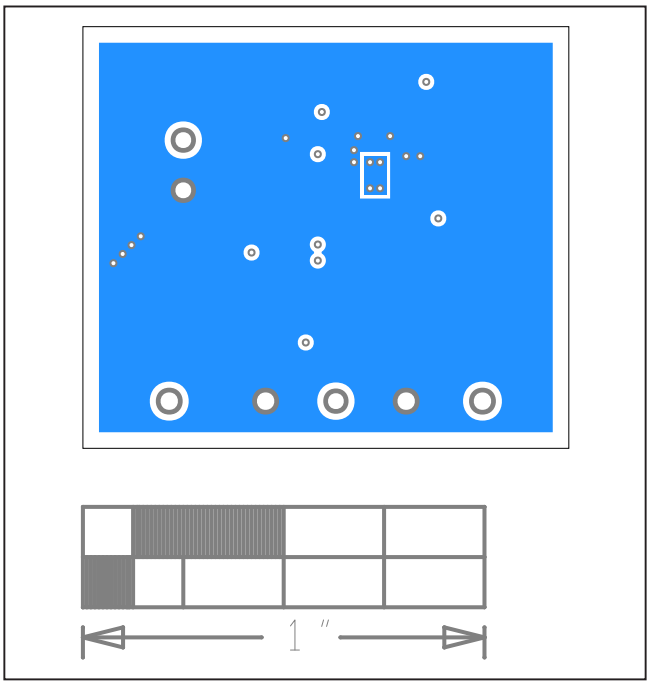


ADPL26001 EV System PCB Layout—Internal2



ADPL26001 EV System PCB Layout—Internal3

ADPL26001 PCB Layouts (continued)



ADPL26001 EV System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

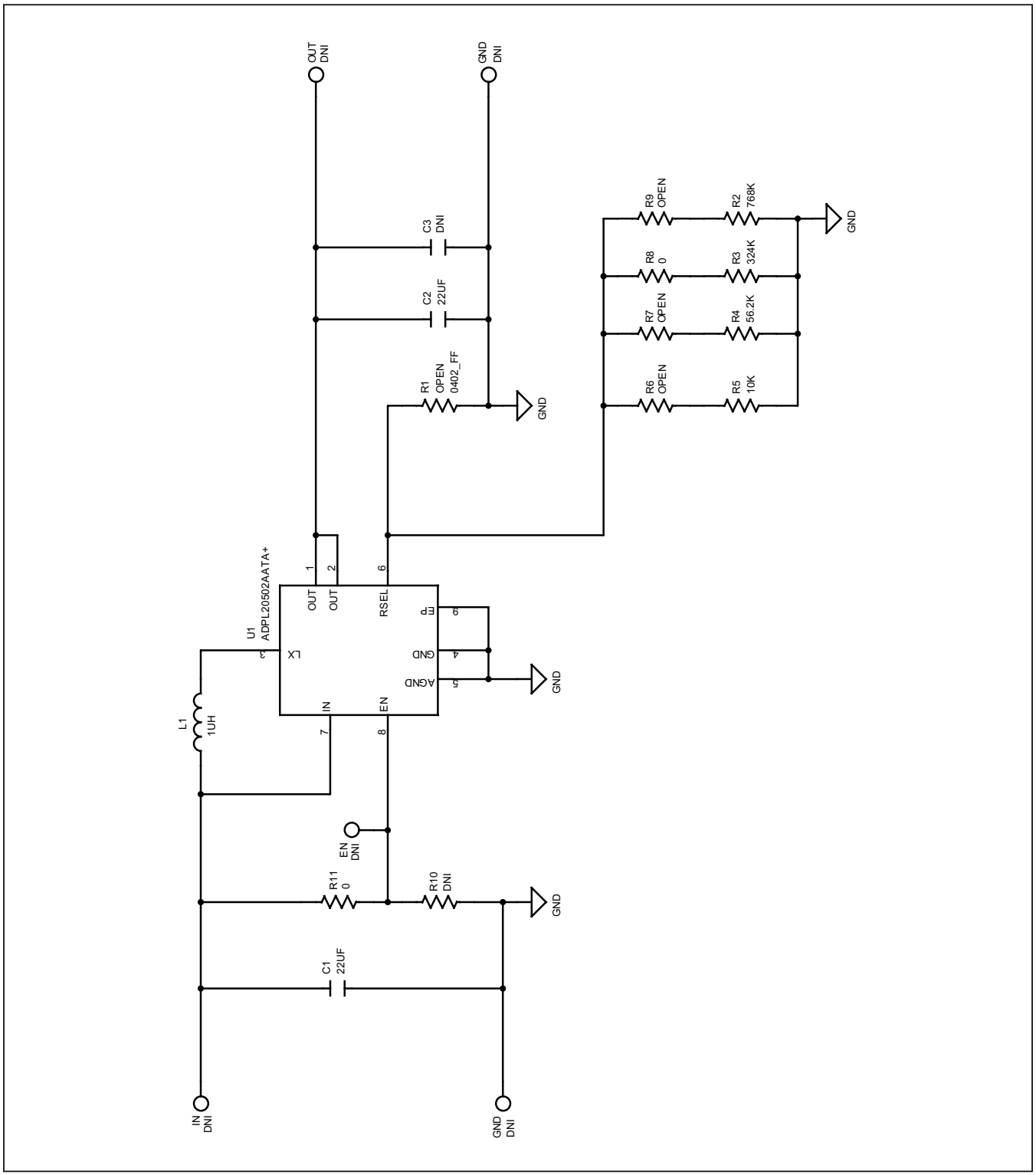
ADPL20502

The ADPL20502 is featured in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL20502, 600mV to 5.5V input, 2A boost converter with True Shutdown™. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL20502** for more information. Use the product evaluation kit to examine the product thoroughly.

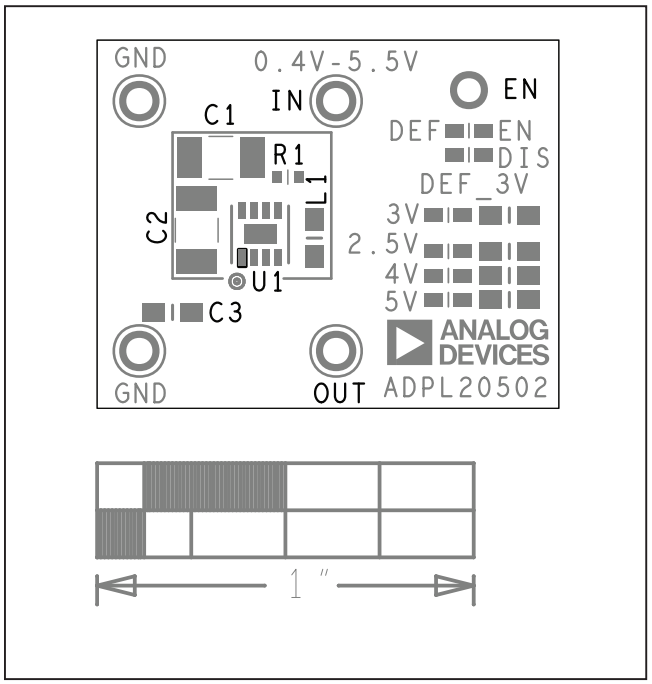
ADPL20502 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1, C2	-	2	GRM31CR71A226KE15; GCM31CR71A226KE01 ;	MURATA;MURATA; CAL-CHIP ELECTRONIC INC.	22UF	CAP; SMT (1206); 22UF; 10%; 10V; X7R; CERAMIC
2	L1	-	1	DFE18SAN1R0ME0	MURATA	1UH	INDUCTOR; SMT (0603); METAL; 1UH; 20%; 1.6A
3	R2	-	1	CRCW0603768KFK	VISHAY DALE	768K	RES; SMT (0603); 768K; 1%; +/-100PPM/DEGC; 0.1000W
4	R3	-	1	CRCW0603324KFK	VISHAY DALE	324K	RES; SMT (0603); 324K; 1%; +/-100PPM/DEGC; 0.1000W
5	R4	-	1	CRCW060356K2FK; ERJ-3EKF5622	VISHAY;PANASONIC	56.2K	RES; SMT (0603); 56.2K; 1%; +/-100PPM/DEGC; 0.1000W
6	R5	-	1	CRCW060310K0FK; ERJ-3EKF1002; AC0603FR-0710KL; RMCF0603FT10K0	VISHAY;PANASONIC; YAGEO;STACKPOLE	10K	RES; SMT (0603); 10K; 1%; +/-100PPM/DEGC; 0.1000W
7	R8, R11	-	2	RC0402JR-070RL; CR0402-16W-000RJT	YAGEO PHYCOMP; VENKEL LTD.	0	RES; SMT (0402); 0; 5%; JUMPER; 0.0630W
8	U1	-	1	ADPL20502AATA+	ANALOG DEVICES	ADPL20502AATA+	EVKIT PART - IC; ADPL20502; 600MV TO 5.5V INPUT; 2A BOOST CONVERTER WITH SHORT-CIRCUIT PROTECTION AND TRUE SHUTDOWN; PACKAGE OUTLINE DRAWING: T822+3C;
9	PCB	-	1	MAXADPL20502PE	MAXIM	PCB	PCB:MAXADPL20502PE
10	EN	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE
11	C3	DNP	0	N/A	N/A	OPEN	PACKAGE OUTLINE 0603 NON-POLAR CAPACITOR
12	R1	DNP	0	N/A	N/A	OPEN	RESISTOR; 0402; OPEN; FORMFACTOR
13	R6, R7, R9, R10	DNP	0	N/A	N/A	OPEN	PACKAGE OUTLINE 0402 RESISTOR
TOTAL			11				

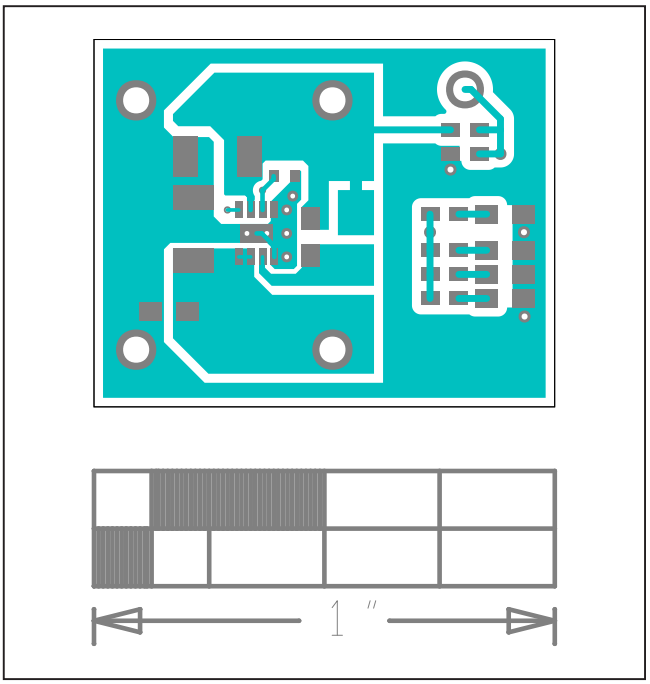
ADPL20502 Schematic



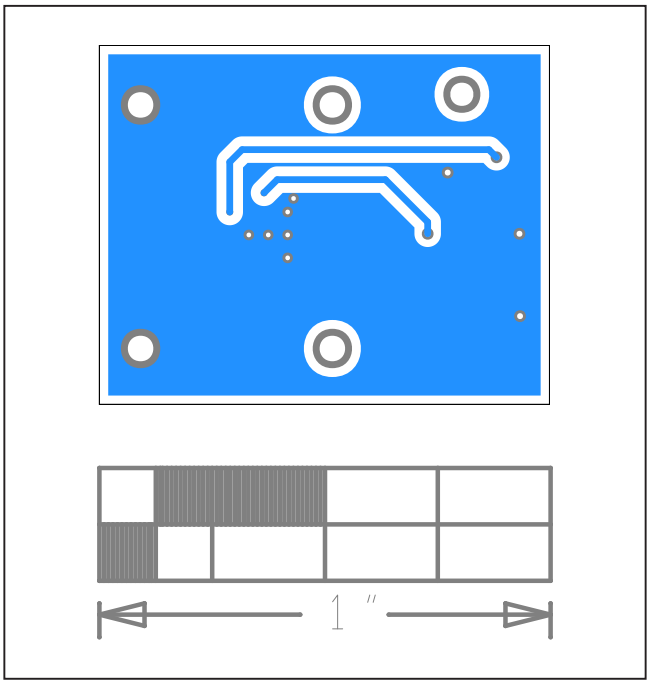
ADPL20502 PCB Layouts



ADPL20502 EV System Component Placement Guide—Top Silkscreen



ADPL20502 EV System PCB Layout—Top



ADPL20502 EV System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ADPL13602/ADPL54203/ADPL20502/ADPL62933/ADPL62935/ADPL63164

ADPL54203

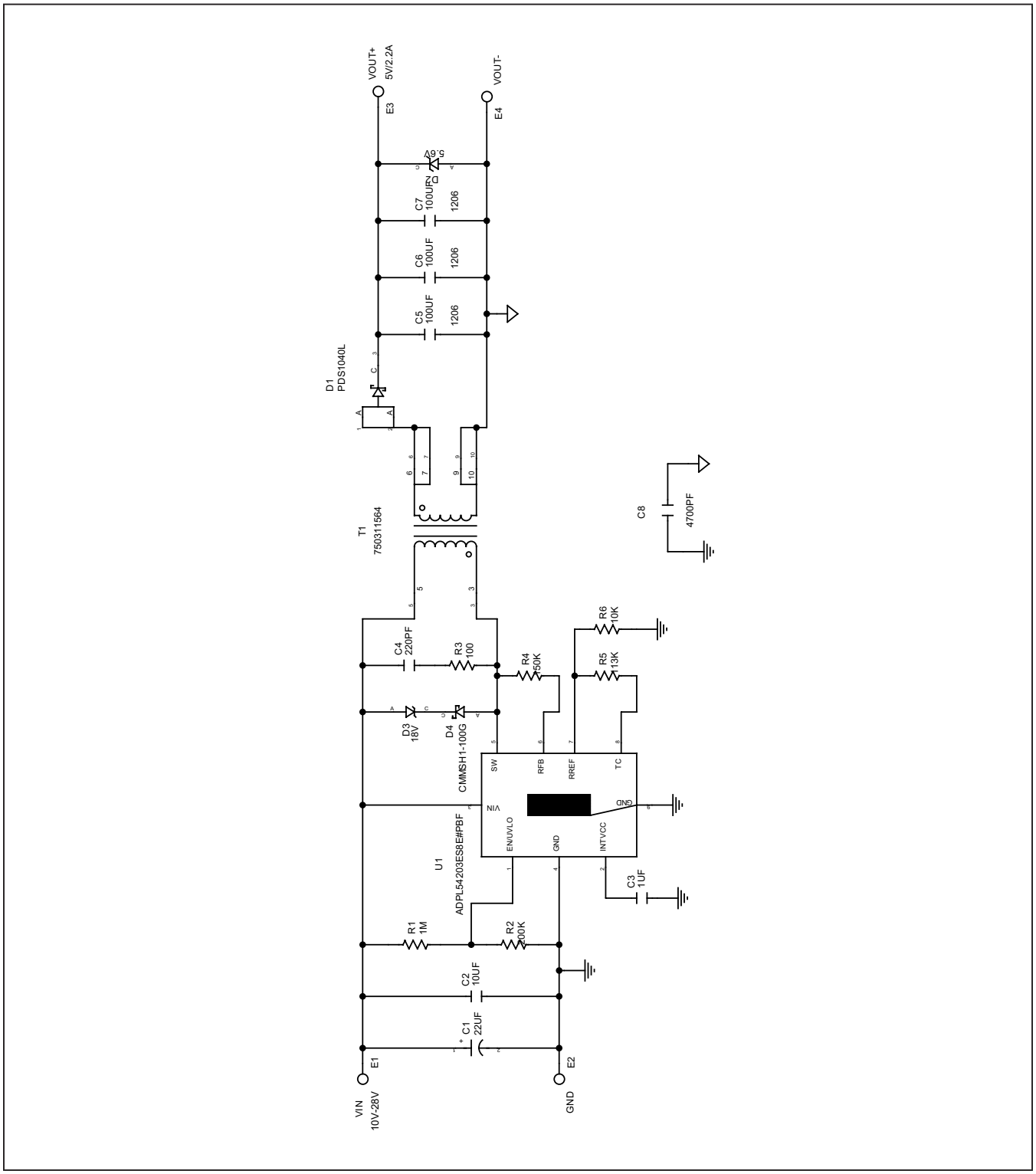
The ADPL54203 is featured in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL54203, 3.2V to 40V input, micropower No-opto isolated flyback converter with 60V/3.4A switch.

The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL54203** for more information. Use the product evaluation kit to examine the product thoroughly.

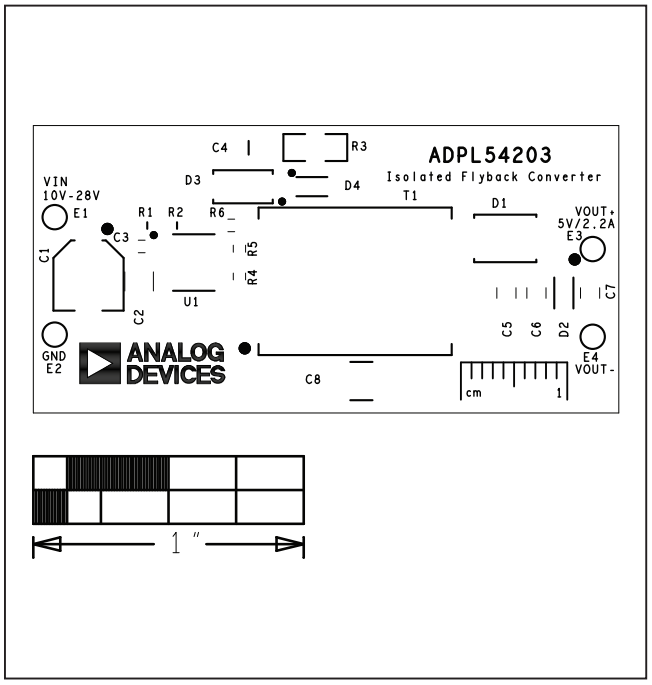
ADPL54203 Bill of Materials

ITEM	REF_DES	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	1	EEE-FK1H220P	PANASONIC	22UF	CAP; SMT (CASE_D); 22UF; 20%; 50V; ALUMINUM-ELECTROLYTIC
2	C2	1	CC1210KKX5R9BB106	YAGEO	10UF	CAP; SMT (1210); 10UF; 10%; 50V; X5R; CERAMIC;
3	C3	1	KGM15BR51E105KT	KYOCERA	1UF	CAP; SMT (0603); 1UF; 10%; 25V; X5R; CERAMIC
4	C4	1	C0805C0G500-221JNE; KGM21BCG1H221J	VENKEL LTD.;KYOCERA	220PF	CAP; SMT (0805); 220PF; 5%; 50V; C0G; CERAMIC
5	C5-C7	3	GRM31CR60J107KE39	MURATA	100UF	CAP; SMT (1206); 100UF; 10%; 6.3V; X5R; CERAMIC
6	C8	1	GA343DR7GD472KW01	MURATA	4700PF	CAP; SMT (1812); 4700PF; 10%; 250V; X7R; CERAMIC
7	D1	1	PDS1040L	DIODES INCORPORATED	PDS1040L	DIODE; SCH; SMT (POWERDI-5); PIV=40V; IF=10A
8	D2	1	CMHZ5232B PBFREE	CENTRAL SEMICONDUCTOR	5.6V	DIODE; ZNR; SMT (SOD-123); VZ=5.6V; 5%; IZ=0.02A
9	D3	1	SMAJ18A-13-F	DIODES INCORPORATED	18V	DIODE; TVS; SMA; VRM=18V; IPP=13.7A
10	D4	1	CMMSH1-100G	CENTRAL SEMICONDUCTOR	CMMSH1-100G	DIODE; SCH; SMT (SOD-123F); PIV=100V; IF=1A
11	R1	1	CRCW06031M00FK; MCR03EZPFX1004	VISHAY DALE;ROHM	1M	RES; SMT (0603); 1M; 1%; +/-100PPM/DEGC; 0.1000W
12	R2	1	CRCW0603200KFK	VISHAY DALE	200K	RES; SMT (0603); 200K; 1%; +/-100PPM/DEGC; 0.1000W
13	R3	1	CRCW1206100RFK; ERJ-8ENF1000	VISHAY DALE;PANASONIC	100	RES; SMT (1206); 100; 1%; +/-100PPM/DEGC; 0.2500W
14	R4	1	CRCW0603150KFK; ERJ-3EKF1503	VISHAY DALE;PANASONIC	150K	RES; SMT (0603); 150K; 1%; +/-100PPM/DEGC; 0.1000W
15	R5	1	ERJ-3EKF1133	PANASONIC	113K	RES; SMT (0603); 113K; 1%; +/-100PPM/DEGC; 0.1000W
16	R6	1	CRCW060310K0FK; ERJ-3EKF1002; AC0603FR-0710KL; RMCF0603FT10K0	VISHAY;PANASONIC; YAGEO;STACKPOLE	10K	RES; SMT (0603); 10K; 1%; +/-100PPM/DEGC; 0.1000W
17	T1	1	750311564	WURTH ELECTRONICS INC	750311564	TRANSFORMER; SMT; SMT-10;
18	U1	1	ADPL54203ES8E#PBF	ANALOG DEVICES	ADPL54203ES8E#PBF	IC; CONV; 40VIN MICROPOWER NO-OPTO ISOLATED FLYBACK CONVERTER WITH 60V/3.4A SWITCH; NSOIC8-EP
19	PCB	1	MAXADPL54203PE	MAXIM	PCB	PCB:MAXADPL54203PE
TOTAL		21				

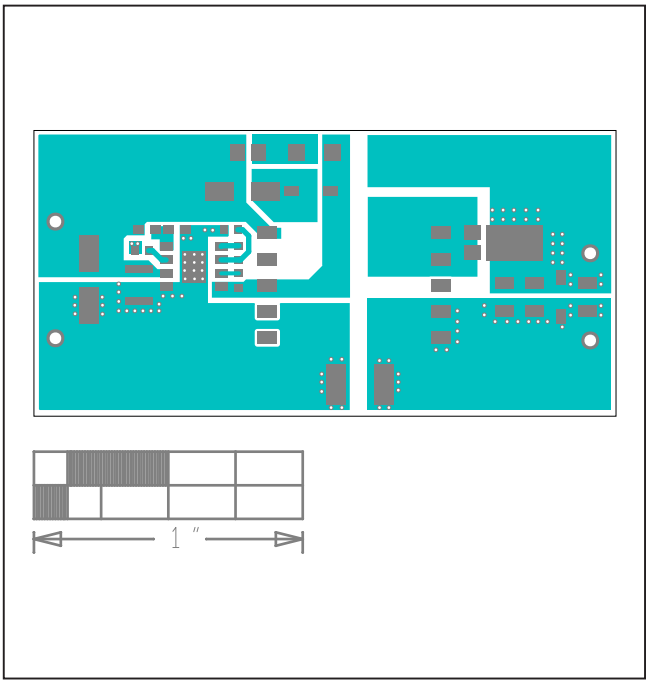
ADPL54203 Schematic



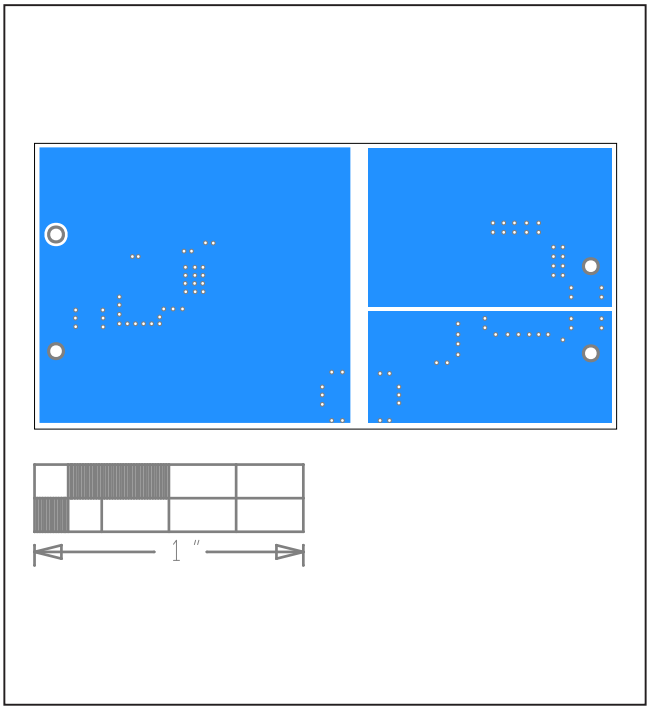
ADPL54203 PCB Layouts



ADPL54203 EV System Component Placement Guide—Top Silkscreen



ADPL54203 EV System PCB Layout—Top



ADPL54203 System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

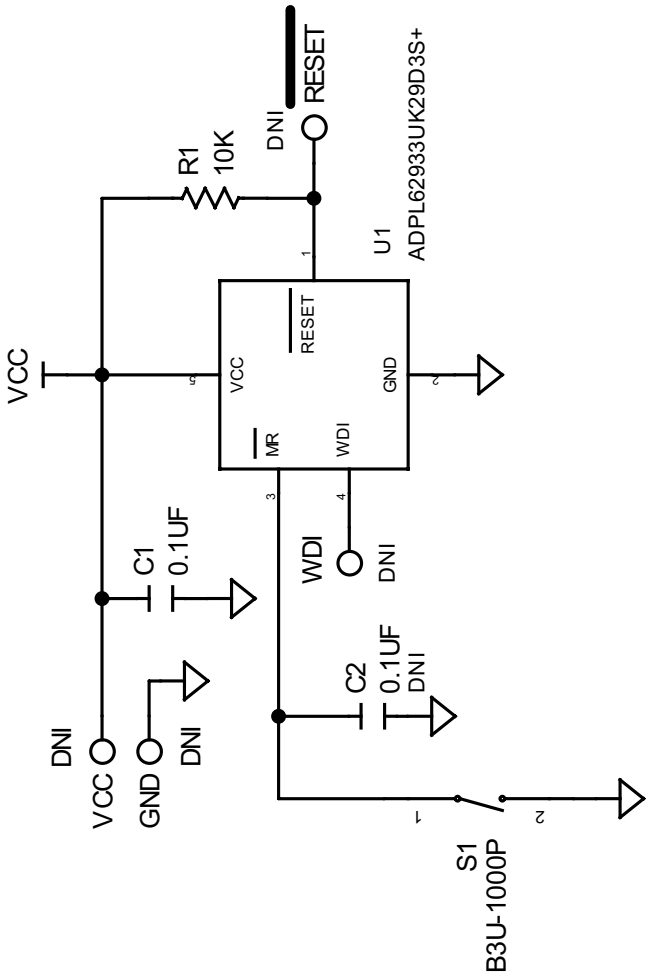
ADPL62933

The ADPL62933 is featured as high-performance supervisor in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL62933, nanoPower µP supervisor with manual reset and watchdog timer. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL62933** for more information. Use the product evaluation kit to examine the product thoroughly.

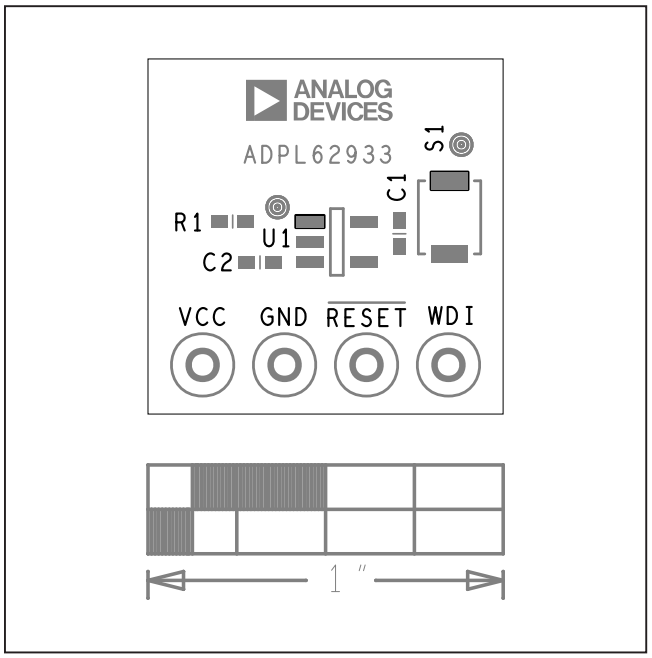
ADPL62933 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	-	1	GRM155R71A104KA01; C1005X7R1A104K050BB; C0402C104K8RAC	MURATA;TDK;KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 10V; X7R; CERAMIC
2	R1	-	1	ERJ-2RKF1002	PANASONIC	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGC; 0.1000W;
3	S1	-	1	B3U-1000P	OMRON	B3U-1000P	SWITCH; SPST; SMT; STRAIGHT; 12V; 0.05A; ULTRA-SMALL TACTILE SWITCH
4	U1	-	1	ADPL62933UK29D3S+	ANALOG DEVICES	ADPL62933UK29D3S+	IC; UP; NANOPOWER UP SUPERVISOR WITH MANUAL RESET AND WATCHDOG TIMER; SOT23-5
5	PCB	-	1	MAXADPL62933PE	MAXIM	PCB	PCB:MAXADPL62933PE
6	C2	DNP	0	GRM155R71A104KA01; C1005X7R1A104K050BB; C0402C104K8RAC	MURATA;TDK;KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 10V; X7R; CERAMIC
7	GND, RESET, VCC, WDI	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE
TOTAL			5				

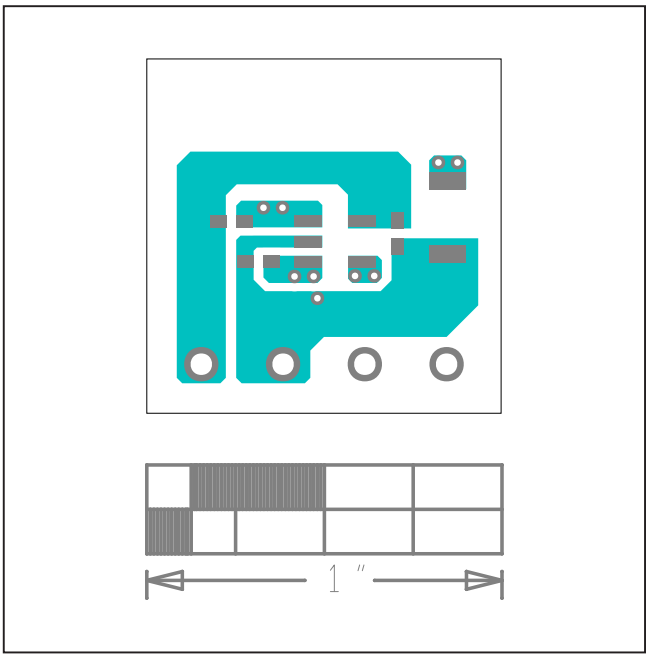
ADPL62933 Schematic



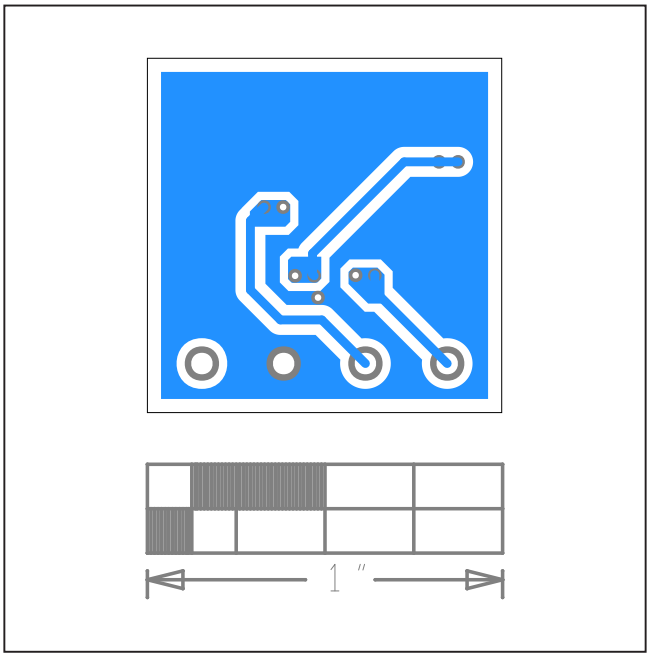
ADPL62933 PCB Layouts



ADPL62933 EV System Component Placement Guide—Top Silkscreen



ADPL62933 EV System PCB Layout—Top



ADPL62933 EV System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ADPL13602/ADPL54203/ADPL20502/ADPL62933/ADPL62935/ADPL63164

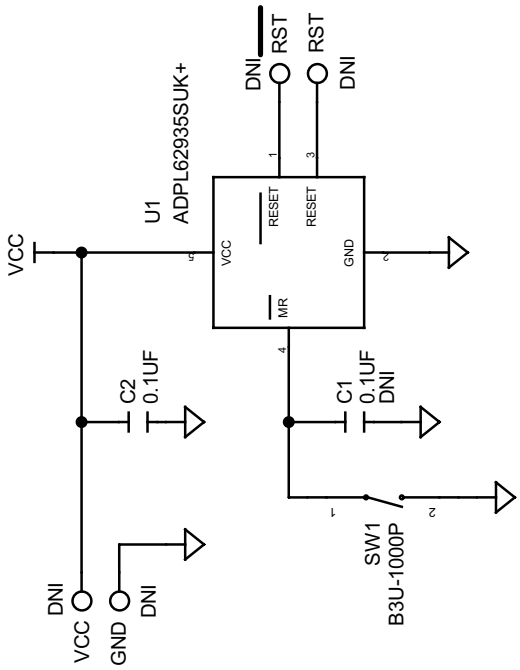
ADPL62935

The ADPL62935 is featured as high-performance supervisor in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL62935, low-voltage µP supervisor with manual reset. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL62935** for more information. Use the product evaluation kit to examine the product thoroughly.

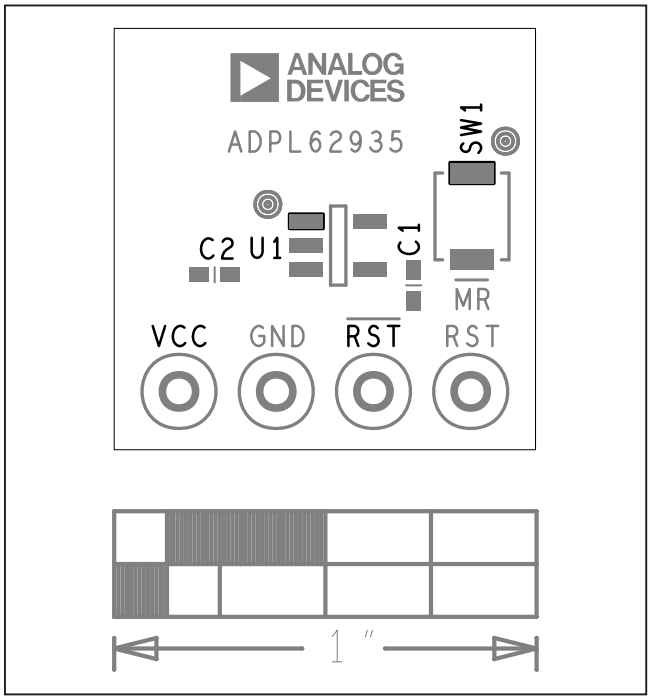
ADPL62935 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C2	-	1	GRM155R71A104KA01; C1005X7R1A104K050BB; C0402C104K8RAC	MURATA;TDK;KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 10V; X7R; CERAMIC
2	SW1	-	1	B3U-1000P	OMRON	B3U-1000P	SWITCH; SPST; SMT; STRAIGHT; 12V; 0.05A; ULTRA-SMALL TACTILE SWITCH
3	U1	-	1	ADPL62935SUK+	ANALOG DEVICES	ADPL62935SUK+	IC; UP; LOW-VOLTAGE UP SUPERVISOR WITH MANUAL RESET; SOT23-5
4	PCB	-	1	MAXADPL62935PE	MAXIM	PCB	PCB:MAXADPL62935PE
5	C1	DNP	0	GRM155R71A104KA01; C1005X7R1A104K050BB; C0402C104K8RAC	MURATA;TDK;KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 10V; X7R; CERAMIC
6	RST, TP1, TP2, VCC	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
TOTAL			4				

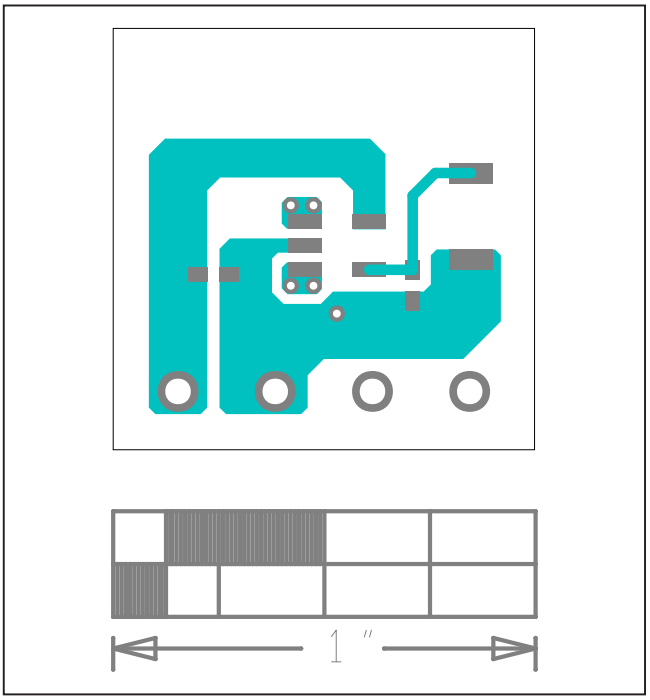
ADPL62935 Schematic



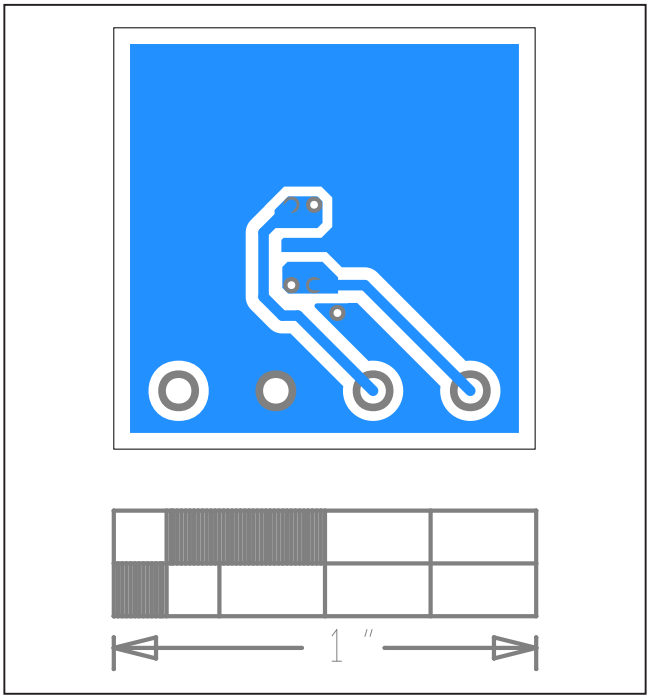
ADPL62935 PCB Layouts



ADPL62935 EV System Component Placement Guide—Top Silkscreen



ADPL62935 EV System PCB Layout—Top



ADPL62935 EV System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

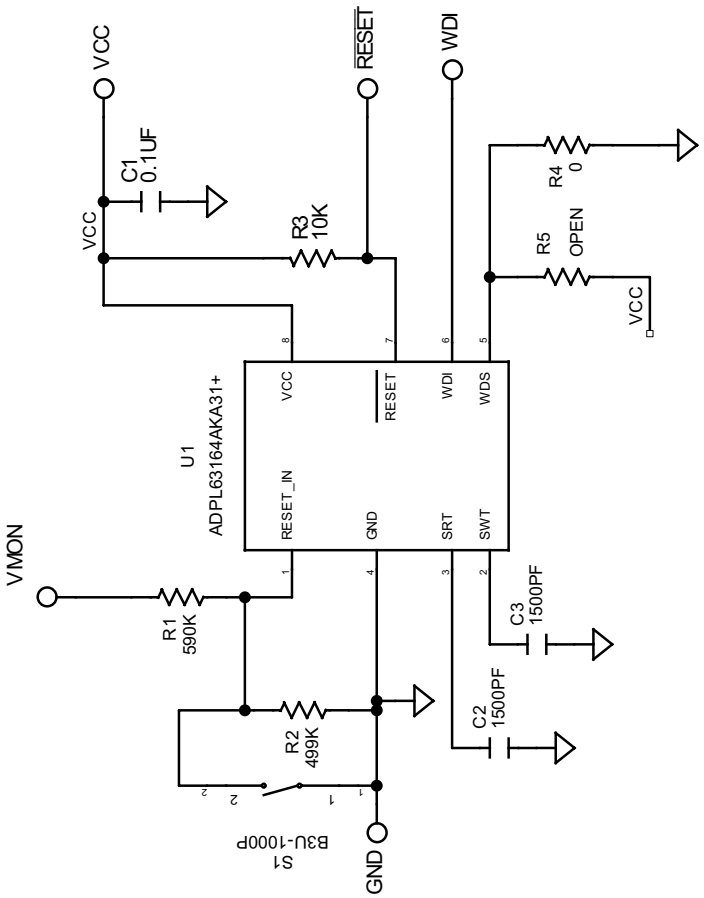
ADPL63164

The ADPL63164 is featured as high-performance supervisor in the ADI Balanced Solutions Essentials Kit, ADIPOWERESSENTKIT#. This small board provides a quick examination and evaluation of the ADPL63164, microprocessor reset circuits with capacitor-adjustable reset/watchdog timeout delay. The board design and layout follow standard part recommendations. Refer to the product data sheet at **www.analog.com/ADPL63164** for more information. Use the product evaluation kit to examine the product thoroughly.

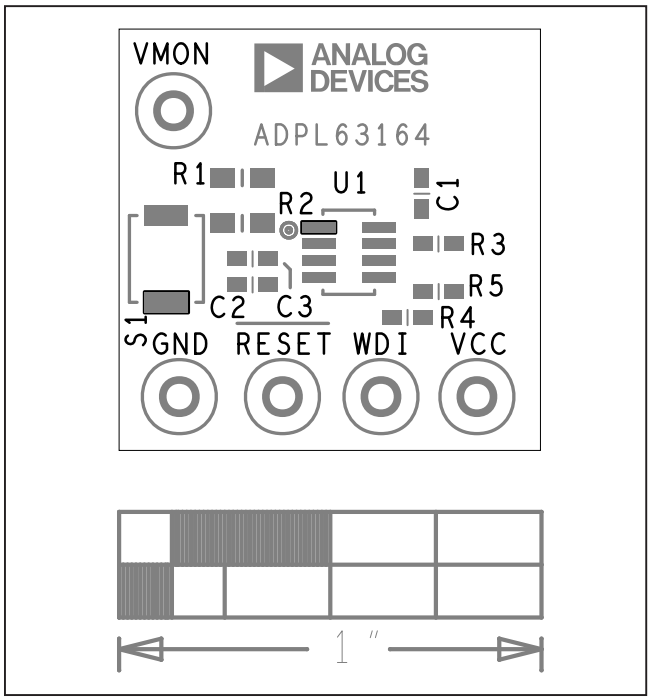
ADPL63164 Bill of Materials

ITEM	REF_DES	DNI/DNP	QTY	MFG PART #	MANUFACTURER	VALUE	DESCRIPTION
1	C1	-	1	GRM155R71A104KA01; C1005X7R1A104K050BB;	MURATA;TDK;KEMET	0.1UF	CAP; SMT (0402); 0.1UF; 10%; 10V; X7R; CERAMIC
2	C2, C3	-	2	8.85012E+11	WURTH ELECTRONICS INC	1500PF	CAP; SMT (0402); 1500PF; 10%; 10V; X7R; CERAMIC;
3	R1	-	1	CRCW0603590KFK	VISHAY DALE	590K	RES; SMT (0603); 590K; 1%; +/-100PPM/DEGC; 0.1000W
4	R2	-	1	CRCW0603499KFK; ERJ-3EKF4993; RC0603FR-07499KL	VISHAY DALE; PANASONIC;YAGEO	499K	RES; SMT (0603); 499K; 1%; +/-100PPM/DEGC; 0.1000W
5	R3	-	1	ERJ-2RKF1002	PANASONIC	10K	RES; SMT (0402); 10K; 1%; +/-100PPM/DEGC; 0.1000W;
6	R4	-	1	ERJ-2GE0R00	PANASONIC	0	RES; SMT (0402); 0; JUMPER; JUMPER; 0.1000W
7	S1	-	1	B3U-1000P	OMRON	B3U-1000P	SWITCH; SPST; SMT; STRAIGHT; 12V; 0.05A; ULTRA-SMALL TACTILE SWITCH
8	U1	-	1	ADPL63164AKA31+	ANALOG DEVICES	ADPL63164AKA31+	IC; UP; MICROPROCESSOR RESET CIRCUITS WITH CAPACITOR
9	PCB	-	1	MAXADPL63164PE	MAXIM	PCB	PCB:MAXADPL63164PE
10	GND, RESET, VCC,	DNP	0	5002	KEYSTONE	N/A	TEST POINT; PIN DIA=0.1IN; TOTAL LENGTH=0.3IN; BOARD HOLE=0.04IN; WHITE; PHOSPHOR BRONZE WIRE SILVER;
11	R5	DNP	0	N/A	N/A	OPEN	PACKAGE OUTLINE 0402 RESISTOR
TOTAL			10				

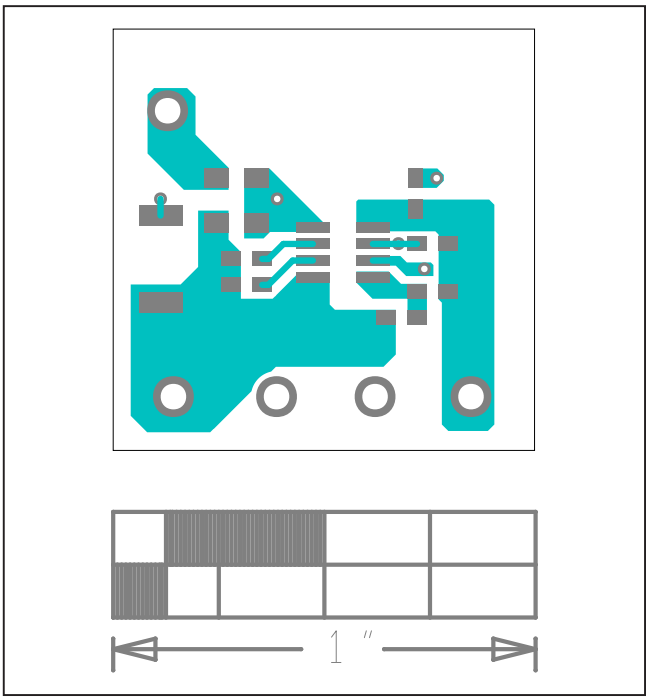
ADPL63164 Schematic



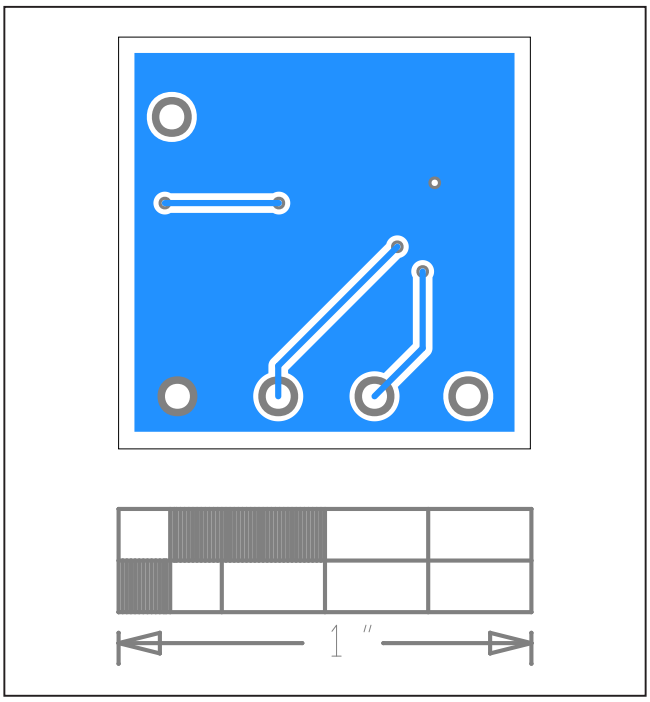
ADPL63164 PCB Layouts



ADPL63164 EV System Component Placement Guide—Top Silkscreen



ADPL63164 EV System PCB Layout—Top



ADPL63164 EV System PCB Layout—Bottom

ADI Balanced Solutions Essentials Kit

Evaluates: ADPL76030/ADPL26001/ ADPL13602/ADPL54203/ADPL20502/ ADPL62933/ADPL62935/ADPL63164

Ordering Information

PART	TYPE
ADIPOWERESSENTKIT#	EV System

#Denotes RoHS compliance.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	2/25	Initial release	—