

**PWR881 REV E2 Bill of Materials**

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
!PCB1	1		PWR881	Any	Printed Circuit Board	
1, 2, 3, 4, 5, 6, 7, 8	8	131-4244-00	131-4244-00	Tektronix	Adaptor, 3.5-mm probe clip (or 131-5031-00)	0.200 inch
C1	1	1uF	GRM219R71E105KA88D	MuRata	CAP, CERM, 1 µF, 25 V, +/- 10%, X7R, 0805	0805
C2, C4	2	10uF	GRM188R61E106MA73D	MuRata	CAP, CERM, 10 µF, 25 V, +/- 20%, X5R, 0603	0603
C3	1	1000pF	GRM1885C1E102JA01D	MuRata	CAP, CERM, 1000 pF, 25 V, +/- 5%, C0G/NP0, 0603	0603
C5, C29	2	1uF	GRM188R61E105KA12D	MuRata	CAP, CERM, 1 µF, 25 V, +/- 10%, X5R, 0603	0603
C6, C28	2	0.22uF	GRM155R71C224KA12D	MuRata	CAP, CERM, 0.22 µF, 16 V, +/- 10%, X7R, 0402	0402
C7, C30, C45	3	10uF	GRM188D71A106MA73D	MuRata	CAP, CERM, 10 µF, 10 V, +/- 20%, X7T, 0603	0603
C8, C31	2	4.7uF	GRM155R61A475MEAAD	MuRata	CAP, CERM, 4.7 µF, 10 V, +/- 20%, X5R, 0402	0402
C9	1	22uF	GRM21BR61E226ME44L	MuRata	CAP, CERM, 22 µF, 25 V, +/- 20%, X5R, 0805	0805
C10, C18, C22, C25, C26	5	10uF	GRM21BR71A106KE51L	MuRata	CAP, CERM, 10 µF, 10 V, +/- 10%, X7R, 0805	0805
C11	1	0.047uF	GRM155R71E473KA88D	MuRata	CAP, CERM, 0.047 µF, 25 V, +/- 10%, X7R, 0402	0402
C12	1	1uF	C1608X7R1C105K080AC	TDK	CAP, CERM, 1 µF, 16 V, +/- 10%, X7R, 0603	0603
C13, C14, C16, C17, C20, C21, C23, C24, C33, C34, C36, C37, C38, C39, C40, C41	16	20uF	GRMJN7R61C206ME05	MuRata	CAP, CERM, 20 µF, 16 V, +/- 20%, X5R, 0704	0704
C15, C35	2	22uF	GRM188R61A226ME15D	MuRata	CAP, CERM, 22 µF, 10 V, +/- 20%, X5R, 0603	0603
C19, C51, C52	3	4.7uF	GRM188R61C475KAAJ	MuRata	CAP, CERM, 4.7 µF, 16 V, +/- 10%, X5R, 0603	0603
C27, C42, C43, C44, C46, C47	6	0.1uF	C1608X7R1E104K080AA	TDK	CAP, CERM, 0.1 µF, 25 V, +/- 10%, X7R, 0603	0603
C32	1	10uF	C2012X5R1E106K125AB	TDK	CAP, CERM, 10 µF, 25 V, +/- 10%, X5R, 0805	0805
C48	1	1000pF	GRM188R71E102KA01D	MuRata	CAP, CERM, 1000 pF, 25 V, +/- 10%, X7R, 0603	0603
C49, C50	2	1uF	GRM188R71E105KA12D	MuRata	CAP, CERM, 1 µF, 25 V, +/- 10%, X7R, 0603	0603
C59, C60	2	270pF	GRM155R71H271KA01D	MuRata	CAP, CERM, 270 pF, 50 V, +/- 10%, X7R, 0402	0402
C61	1	0.01uF	GRM188R71E103KA01D	MuRata	CAP, CERM, 0.01 µF, 25 V, +/- 10%, X7R, 0603	0603
D1, D3, D4, D5, D6	5	Green	LTST-C190GKT	Lite-On	LED, Green, SMD	1.6x0.8x0.8mm
D2	1	13V	SMAJ13A	Littelfuse	Diode, TVS, Uni, 13 V, SMA	SMA
D7	1	75V	BAV99W-7-F	Diodes Inc.	Diode, Switching, 75 V, 0.15 A, SOT-323	SOT-323
D8, D9	2	3.6V	MMSZ5227B-7-F	Diodes Inc.	Diode, Zener, 3.6 V, 500 mW, SOD-123	SOD-123
D10	1	5V	SP4021-01FTG	Littelfuse	Diode, TVS, Uni, 5 V, 19.6 Vc, SOD-323	SOD-323
H1, H3, H5, H7	4		1902C	Keystone	Standoff, Hex, 0.5"L #4-40 Nylon	Standoff
H2, H4, H6, H8	4		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
J1, J2, J3, J4, J6, J7, J8, J9, J10, J12, J13, J14, J15, J16, J17, J18, J19, J22, J24, J26, J27, J29, J30, J31, J39, J40, J41, J42, J43	29		PEC02SAAN	Sullins Connector Solutions	Header, 100mil, 2x1, Tin, TH	Header, 2 PIN, 100mil, Tin

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
J5, J11, J28	3		1727010	Phoenix Contact	Conn Term Block, 2POS, 3.81mm, TH	2POS Terminal Block
J20, J21, J25, J33, J34, J35, J37, J38	8		TSW-103-07-T-S	Samtec	Header, 2.54 mm, 3x1, Tin, TH	Header, 2.54 mm, 3x1, TH
J23	1		20-0000016-01	Lintes Technology	Connector, Receptacle, USB Type C, R/A, SMT	Connector, Receptacle, USB Type C, SMT
J32, J36	2		22-05-3041	Molex	Header (friction lock), 100mil, 4x1, R/A, TH	4x1 R/A Header
J44	1		70246-0801	Molex	Header(shrouded), 2.54mm, 4x2, Gold, TH	Header(shrouded), 2.54mm, 4x2, TH
L1	1	1uH	IHLP2020BZER1R0M11	Vishay-Dale	Inductor, Shielded Drum Core, Powdered Iron, 1 µH, 7 A, 0.0181 ohm, SMD	5.49x2x5.18mm
LBL1	1		THT-14-423-10	Brady	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650 x 0.200 inch
Q1	1	30V	CSD17575Q3	Texas Instruments	MOSFET, N-CH, 30 V, 60 A, DQG0008A (VSON-CLIP-8)	DQG0008A
R1, R4, R6, R7, R8, R19, R26, R27, R28, R30, R31, R34, R37	13	10k	CRCW040210K0JNED	Vishay-Dale	RES, 10 k, 5%, 0.063 W, 0402	0402
R2	1	2.21k	CRCW04022K21FKED	Vishay-Dale	RES, 2.21 k, 1%, 0.063 W, 0402	0402
R3	1	18k	CRCW040218K0JNED	Vishay-Dale	RES, 18 k, 5%, 0.063 W, 0402	0402
R5, R10, R65, R66, R69, R70	6	1.00k	RC0603FR-071KL	Yageo America	RES, 1.00 k, 1%, 0.1 W, 0603	0603
R9	1	130	CRCW0402130RFKED	Vishay-Dale	RES, 130, 1%, 0.063 W, 0402	0402
R11	1	0	CRCW25120000Z0EGHP	Vishay-Dale	RES, 0, 5%, 1.5 W, AEC-Q200 Grade 0, 2512	2512
R13	1	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
R14	1	0	5106	Keystone	RES, 0, 1%, 0.5 W, 0805	0805
R15, R16, R33, R35	4	100	CRCW0603100RJNEA	Vishay-Dale	RES, 100, 5%, 0.1 W, 0603	0603
R17	1	30.1k	CRCW040230K1FKED	Vishay-Dale	RES, 30.1 k, 1%, 0.063 W, 0402	0402
R18	1	5.23k	CRCW04025K23FKED	Vishay-Dale	RES, 5.23 k, 1%, 0.063 W, 0402	0402
R21	1	180k	CRCW0402180KJNED	Vishay-Dale	RES, 180 k, 5%, 0.063 W, 0402	0402
R22	1	75k	CRCW040275K0JNED	Vishay-Dale	RES, 75 k, 5%, 0.063 W, 0402	0402
R23	1	39k	CRCW040239K0JNED	Vishay-Dale	RES, 39 k, 5%, 0.063 W, 0402	0402
R25	1	0.01	WSP1206R0100FEA	Vishay-Dale	RES, 0.01, 1%, 1 W, 1206	1206
R29, R32, R38	3	100k	3266W-1-104LF	Bourns	Trimmer, 100k ohm, 0.25W, TH	4.5x8x6.7mm
R36	1	0.002	CSNL1206FT2L00	Stackpole Electronics Inc	RES, 0.002, 1%, 1 W, 1206	1206
R39, R40, R41, R42	4	2.20k	RC0603FR-072K2L	Yageo America	RES, 2.20 k, 1%, 0.1 W, 0603	0603
R43	1	200k	CRCW0402200KJNED	Vishay-Dale	RES, 200 k, 5%, 0.063 W, 0402	0402
R44, R48, R49, R50, R51, R55, R56, R59, R60, R61, R62, R63, R64, R67, R68	15	100	RC0603FR-07100RL	Yageo America	RES, 100, 1%, 0.1 W, 0603	0603
R45, R52	2	10.0k	RC0603FR-0710KL	Yageo America	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R46	1	47.0k	RC0603FR-0747KL	Yageo America	RES, 47.0 k, 1%, 0.1 W, 0603	0603
R47	1	0	RC0603JR-070RL	Yageo America	RES, 0, 5%, 0.1 W, 0603	0603
R53, R54	2	499	RT0603DRE07499RL	Yageo America	RES, 499, 0.5%, 0.1 W, 0603	0603
R57, R58	2	4.70k	RC0603FR-074K7L	Yageo America	RES, 4.70 k, 1%, 0.1 W, 0603	0603
S1	1		ADTSM31NV	APEM	Switch, SPST-NO, Off-Mom, 0.05 A, 12 V, SMT	6x3.51mm

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
SH-J1, SH-J6, SH-J16, SH-J17, SH-J18, SH-J19, SH-J20s, SH-J21s, SH-J22, SH-J24, SH-J26, SH-J30, SH-J31, SH-J37s, SH-J38s, SH-J40, SH-J41, SH-J42, SH-J43	19	1x2	969102-0000-DA	3M	Shunt, 100mil, Gold plated, Black	Shunt
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20, TP21, TP22, TP23, TP24, TP25, TP26, TP27, TP28, TP29, TP30, TP31, TP32, TP33, TP34, TP35, TP36, TP37, TP38, TP39, TP40, TP41, TP42, TP43, TP44, TP45, TP46, TP49, TP66, TP67, TP68	50		5012	Keystone	Test Point, Multipurpose, White, TH	White Multipurpose Testpoint
TP47, TP48, TP50, TP51, TP52, TP53, TP54, TP55, TP56, TP57, TP58, TP59, TP60, TP61, TP62, TP63, TP65	17		5002	Keystone	Test Point, Miniature, White, TH	White Miniature Testpoint
TP64	1		5004	Keystone	Test Point, Miniature, Yellow, TH	Yellow Miniature Testpoint
U2	1		BQ25890RTWR	Texas Instruments	I2C Controlled 5A Single Cell Charger with NVDC Power Path Management and MaxCharge™ High Voltage Adapter Support, RTW0024H (WQFN-24)	RTW0024H
U3	1		BQ25970YFFR	Texas Instruments	97% Efficient, 8A Switched Cap Battery Charger with Integrated Protection, I2C Programmability and ADC, YFF0056ACAJ (DSBGA-56)	YFF0056ACAJ

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
U4	1		TUSB422YFF	Texas Instruments	USB Type-C Port Control with Power Delivery, YFF0009AJAK (DSBGA-9)	YFF0009AJAK
U5	1		MSP430G2955IRHA40R	Texas Instruments	MIXED SIGNAL MICROCONTROLLER, RHA0040B (VQFN-40)	RHA0040B
U6	1		TPD2EUSB30DRTR	Texas Instruments	ESD Solution for Super-Speed (6 Gbps) USB 3.0 Interface, 2 Channels, -40 to +85 degC, 3-pin SOT (DRT), Green (RoHS & No Sb/Br)	DRT0003A
U7	1		TS3USB221RSER	Texas Instruments	High-Speed USB 2.0 (480 Mbps) 1:2 Multiplexer / Demultiplexer Switch with Single Enable, 6 ohm RON, 2.5 to 3.3V, -40 to 85 degC, 10-Pin UQFN (RSE), Green (RoHS & no Sb/Br)	RSE0010A
U8, U9	2		TLV70433DBVR	Texas Instruments	Single Output LDO, 150 mA, Fixed 3.3 V Output, 2.5 to 24 V Input, with Ultra-Low IQ, 5-pin SOT-23 (DBV), -40 to 125 degC, Green (RoHS & no Sb/Br)	DBV0005A
U10, U11, U12	3		TPD2EUSB30ADRTR	Texas Instruments	ESD / Surge Solution for High Speed, Low Voltage Interface, 2 Channels, -40 to +85 degC, 3-pin SOT (DRT), Green (RoHS & no Sb/Br)	DRT0003A
C53, C54, C55, C56	0	22uF	GRM188R61A226ME15D	MuRata	CAP, CERM, 22 $\mu$ F, 10 V, +/- 20%, X5R, 0603	0603
C57, C58	0	10uF	GRM188D71A106MA73D	MuRata	CAP, CERM, 10 $\mu$ F, 10 V, +/- 20%, X7T, 0603	0603
FID1, FID2, FID3, FID4, FID5, FID6	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
R12, R20, R24	0	0	CRCW25120000Z0EGHP	Vishay-Dale	RES, 0, 5%, 1.5 W, AEC-Q200 Grade 0, 2512	2512
SH-J9, SH-J20p, SH-J21p, SH-J37p, SH-J38p, SH-J39	0	1x2	969102-0000-DA	3M	Shunt, 100mil, Gold plated, Black	Shunt
U1	0		BQ25970YFFR	Texas Instruments	97% Efficient, 8A Switched Cap Battery Charger with Integrated Protection, I2C Programmability and ADC, YFF0056ACAJ (DSBGA-56)	YFF0056ACAJ

## IMPORTANT NOTICE FOR TI DESIGN INFORMATION AND RESOURCES

Texas Instruments Incorporated ("TI") technical, application or other design advice, services or information, including, but not limited to, reference designs and materials relating to evaluation modules, (collectively, "TI Resources") are intended to assist designers who are developing applications that incorporate TI products; by downloading, accessing or using any particular TI Resource in any way, you (individually or, if you are acting on behalf of a company, your company) agree to use it solely for this purpose and subject to the terms of this Notice.

TI's provision of TI Resources does not expand or otherwise alter TI's applicable published warranties or warranty disclaimers for TI products, and no additional obligations or liabilities arise from TI providing such TI Resources. TI reserves the right to make corrections, enhancements, improvements and other changes to its TI Resources.

You understand and agree that you remain responsible for using your independent analysis, evaluation and judgment in designing your applications and that you have full and exclusive responsibility to assure the safety of your applications and compliance of your applications (and of all TI products used in or for your applications) with all applicable regulations, laws and other applicable requirements. You represent that, with respect to your applications, you have all the necessary expertise to create and implement safeguards that (1) anticipate dangerous consequences of failures, (2) monitor failures and their consequences, and (3) lessen the likelihood of failures that might cause harm and take appropriate actions. You agree that prior to using or distributing any applications that include TI products, you will thoroughly test such applications and the functionality of such TI products as used in such applications. TI has not conducted any testing other than that specifically described in the published documentation for a particular TI Resource.

You are authorized to use, copy and modify any individual TI Resource only in connection with the development of applications that include the TI product(s) identified in such TI Resource. NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT OF TI OR ANY THIRD PARTY IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information regarding or referencing third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of TI Resources 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.

TI RESOURCES ARE PROVIDED "AS IS" AND WITH ALL FAULTS. TI DISCLAIMS ALL OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, REGARDING TI RESOURCES OR USE THEREOF, INCLUDING BUT NOT LIMITED TO ACCURACY OR COMPLETENESS, TITLE, ANY EPIDEMIC FAILURE WARRANTY AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY YOU AGAINST ANY CLAIM, INCLUDING BUT NOT LIMITED TO ANY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON ANY COMBINATION OF PRODUCTS EVEN IF DESCRIBED IN TI RESOURCES OR OTHERWISE. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, DIRECT, SPECIAL, COLLATERAL, INDIRECT, PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES IN CONNECTION WITH OR ARISING OUT OF TI RESOURCES OR USE THEREOF, AND REGARDLESS OF WHETHER TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You agree to fully indemnify TI and its representatives against any damages, costs, losses, and/or liabilities arising out of your non-compliance with the terms and provisions of this Notice.

This Notice applies to TI Resources. Additional terms apply to the use and purchase of certain types of materials, TI products and services. These include; without limitation, TI's standard terms for semiconductor products (<http://www.ti.com/sc/docs/stdterms.htm>), [evaluation modules](#), and [samples](http://www.ti.com/sc/docs/sampterm.htm) (<http://www.ti.com/sc/docs/sampterm.htm>).

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
Copyright © 2018, Texas Instruments Incorporated