

# Bill of Materials

TI DESIGNS  
Part #:7499  
Literature #:PMP

COUNT	RefDes	Value	Description	Size	Part Number	MFR
1	C24	47pF	Capacitor, Ceramic, 50V, X7R, 10%	603	STD	Std
2	C15 C26	100pF	Capacitor, Ceramic, 50V, C0G, 10%	603	STD	Std
2	C7, C8	1000pF	Capacitor, Ceramic, 100V, C0G, 10%	603	STD	Std
1	C28	3900pF	Capacitor, Ceramic, 50V, X7R, 10%	603	STD	Std
1	C30	0.01uF	Capacitor, Ceramic, 50V, X7R, 10%	603	STD	Std
4	C1, C2, C3, C4	0.01uF	Capacitor, Ceramic, 100V, X7R, 10%	603	STD	Std
1	C31	0.068uF	Capacitor, Ceramic, 25V, X7R, 10%	603	STD	Std
1	C27	1uF	Capacitor, Ceramic, 10V, X5R, 20%	603	STD	Std
0	C21	DNP	Capacitor, Ceramic, 50V, X7R, 10%	603	STD	Std
1	C9	0.1uF	Capacitor, Ceramic, 100V, X7R, 10%	805	STD	Std
3	C25, C22, C29	1uF	Capacitor, Ceramic, 25V, X7R, 10%	805	STD	Std
1	C20	0.047uF	Capacitor, Ceramic, 200V, X7R, 10%	1206	STD	Std
4	C11, C12, C13, C14	2.2uF	Capacitor, Ceramic, 100V, X7R, 10%	1210	STD	Std
2	C18, C19	22uF	Capacitor, Ceramic, 16V, X7R, 10%	1210	STD	Std
1	C6	1000pF	Capacitor, Ceramic, 2KV, X7R, 10%	1812	STD	Std
2	C10, C23	4700pF	Capacitor, Ceramic, 2KV, X7R, 10%	1812	STD	Std
1	C16	22uF	Capacitor, Aluminum, 25V, 20%	0.201 x 0.262 inch	EEEFK1E220R	Panasonic
1	C17	47uF	Capacitor, Aluminum, 16V, 20%	6.3x5.8mm	EEEFK1C470P	Panasonic
1	C5	47uF	Capacitor, Aluminum, 63V, ±20%	0.328 x 0.390 inch	EEVFK1J470P	Panasonic
1	D7		Diode, TVS, 58-V, 1W	SMA	SMAJ58A	Diodes
1	D18		Diode, Dual Schottky, 200-mA, 30-V	SOT23	BAT54S	Zetex
6	D10, D11, D12, D13, D16, D17		Diode, Switching, 100V, 200mA, 225mW,		MMSD914T1	
2	D14, D15	12V	Diode, Zener, 12V, 0.5W	SOD123	MMSZ5242BT3G	On Semi
8	D1, D2, D3, D4, D5, D6, D8, D9		Diode, Schottky, 3A, 100V	SMC	B3100	Diodes, Inc
6	FB1, FB2, FB3, FB4, FB5, FB6		Bead, Ferrite, SMT, 220 Ohms, 3A	805	MPZ2012S221A	TDK
1	J3		Header, Male 2-pin, 100mil spacing, (36-pin strip)	0.100 inch x 2	PEC02SAAN	Sullins
1	J4		Header, Male 2-pin, 100mil spacing	0.100 inch x 2	PEC02SAAN	Sullins
2	J1, J2		Connector, Jack, Modular, 8 POS	0.705 x 0.820 inch	520252	AMP
2	J5, J6		Terminal Block, 2-pin, 6-A, 3.5mm	0.27 x 0.25 inch	ED555/2DS	OST
0	L1	DNP	Inductor, Common Mode, 2A, 60 milliohms	23 mm dia	7446722002	Würth Electronics
1	L2	5.5uH	Inductor, SMT, 10A, 10.3 milliohm	10.2 X 10.5 MM	744325550	Würth Electronics
1	L3	15uH	Inductor, Power, 14A, 9 milliohms	18.2 x 18.3 mm	74435571500	Würth Electronics
1	L4	2200 uH	Inductor, Power, 150mA, 6 Ohms	7x8 mm	768775322	Würth Electronics
1	Q2		MOSFET, NChan, 100V, 16A, 56 millohm	Power33	FDMC8622	Fairchild
1	Q3		Trans, NPN Midium Power, 100V 1A	SOT-23	FMMT493TC	Diodes
1	Q8		MOSFET, Pch, 150V, 3A, 1.5 Ohms	Power33	FDMC2523P	Fairchild
1	Q9		MOSFET, NChan, 150V, 20A, 25 millohm	POWER 56	FDMS86250	Fairchild
1	Q10		Trans, PNP, 40V, 200mA, 225mW	SOT23	MMBT3906LT1G	On Semi
2	Q4, Q6		Transistor, NPN, 100V, 1W	SOT-89	FCX493TA	Diodes, Inc

COUNT	RefDes	Value	Description	Size	Part Number	MFR
2	Q5, Q7		MOSFET, N-Chan, 60V, 18A, 6.1 mOhm	QFN-8 POWER	CSD18533Q5A	Texas Instruments
2	R8, R18	0	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R17	10	Resistor, Chip, 1/16W, 1%	603	STD	Std
4	R4, R5, R6, R7	75	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R10	150	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R36	499	Resistor, Chip, 1/16W, 1%	603	STD	Std
2	R20, R32	1K	Resistor, Chip, 1/16W, 1%	603	STD	Std
3	R25, R27, R37	2K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R24	2.32K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R22	4.22K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R29	6.98K	Resistor, Chip, 1/16W, 1%	603	STD	Std
2	R16, R26	10K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R34	10.5K	Resistor, Chip, 1/16W, 1%	603	STD	Std
3	R1, R2, R3	24.9K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R28	40.2K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R33	51.1K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R31	61.9K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R30	80.6K	Resistor, Chip, 1/16W, 1%	603	STD	Std
2	R19, R23	121K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R35	100K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R12	200K	Resistor, Chip, 1/16W, 1%	603	STD	Std
1	R9	63.4	Resistor, Chip, 1/10W, 1%	805	STD	Std
2	R14, R15	2K	Resistor, Chip, 1/4W, 5%	1206	STD	Std
2	R100, R101	0	Resistor, Chip, 1W, 1%	2512	STD	Std
1	R21	0.05	Resistor, Chip, 1W, 1%	2512	STD	Std
1	R13	0.25	Resistor, Chip, 1W, 1%	2512	STD	Std
1	T3		Transformer, Forward	0.860 x 1.150 inch	750313355 Rev01	Würth Electronics
2	T1, T2		XFMR, Mid-Power PoE Magnetics	S0 14 Wide	ETH1-230LD	Coilcraft
1	TP1		Test Point, White, Thru Hole	0.125 x 0.125 inch	5012	Keystone
1	U4		IC, Photocoupler, 80-160% CTR	MF4	TCMT1107	Vishay
1	U1		IC, Photocoupler, 200-400% CTR	MF4	TCMT1109	Vishay
1	U5		IC, Shunt Regulator, 2.49-V ref, 36-V, 10-mA, 1%	SOT23-5	TL431AIDBVR	Texas Instruments
1	U2		IC, IEEE 802.3at PoE High Power PD Controller	TPS2379DDA	TPS2379DDA	Texas Instruments
1	U3		IC, Current-Mode Active Clamp PWM Controller	PW20	UCC2897APW	Texas Instruments

## IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, 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 components or services are used. Information published by TI regarding third-party products or services does not constitute a license 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.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

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

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have **not** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.