

PMP4428								
Item	Qty	Reference	Type	Part Name	MFR	Value	Package	Description
1	3	C2, C3, C4	Ceramic Capacitor	STD	STD	4.7uF, 50V	1210	CAP, CERM, 4.7uF, 50V, +/-10%, X7R
2	4	C7, C8, C9, C10	Ceramic Capacitor	STD	Panasonic	470uF, 6.3V	1210	CAP, CERM, 470uF, 6.3V, +/-10%, X7R
3	1	C6	Ceramic Capacitor	STD	STD	68uF, 250V	1206	CAP, CERM, 68uF, 250V, +/-10%, X7R
4	1	C22	Ceramic Capacitor	STD	STD	2200pF, 1000V	1812	CAP, CERM, 2200pF, 1000V, +/-10%, X7R
5	5	C5, C12, C18, C19, C21	Ceramic Capacitor	STD	STD	0.1uF, 50V	603	CAP, CERM, 0.1uF, 50V, +/-10%, X7R
6	1	C13	Ceramic Capacitor	STD	STD	2.2uF, 25V	603	CAP, CERM, 2.2uF, 25V, +/-10%, X7R
7	2	C25, C26	Ceramic Capacitor	STD	STD	1nF, 50V	603	CAP, CERM, 1nF, 50V, +/-10%, X7R
8	3	C20, C23, C28	Ceramic Capacitor	STD	STD	470pF, 50V	603	CAP, CERM, 470pF, 50V, +/-10%, X7R
9	1	C15	Ceramic Capacitor	STD	STD	22nF, 25V	603	CAP, CERM, 22nF, 25V, +/-10%, X7R
10	1	C17	Ceramic Capacitor	STD	STD	10nF, 50V	603	CAP, CERM, 10nF, 50V, +/-10%, X7R
11	1	C16	Ceramic Capacitor	STD	STD	2.2nF, 50V	603	CAP, CERM, 2.2nF, 50V, +/-10%, X7R
12	2	C1, C14	Ceramic Capacitor	STD	STD	100pF, 50V	603	CAP, CERM, 100pF, 50V, +/-10%, X7R
13	1	C27	Ceramic Capacitor	STD	STD	NA	603	CAP, CERM, NA, +/-10%, X7R
14	1	R7	Resistor	STD	STD	100k	603	Resistor, Chip, 1/10W, 1%
15	1	R9	Resistor	STD	STD	55k	603	Resistor, Chip, 1/10W, 1%
16	1	R6	Resistor	STD	STD	43k	603	Resistor, Chip, 1/10W, 1%
17	1	R24	Resistor	STD	STD	200R	603	Resistor, Chip, 1/10W, 1%
18	1	R4	Resistor	STD	STD	2R	603	Resistor, Chip, 1/10W, 1%
19	2	R2, R26	Resistor	STD	STD	10R	603	Resistor, Chip, 1/10W, 1%
20	1	R27	Resistor	STD	STD	43k	603	Resistor, Chip, 1/10W, 1%
21	1	R23	Resistor	STD	STD	0R	603	Resistor, Chip, 1/10W, 1%
22	3	R5, R13, R20	Resistor	STD	STD	10k	603	Resistor, Chip, 1/10W, 1%
23	1	R10	Resistor	STD	STD	1.1k	603	Resistor, Chip, 1/10W, 1%
24	1	R15	Resistor	STD	STD	24k	603	Resistor, Chip, 1/10W, 1%
25	1	R12	Resistor	STD	STD	2k	603	Resistor, Chip, 1/10W, 1%
26	1	R21	Resistor	STD	STD	47R	1206	Resistor, Chip, 1/4W, 1%
27	1	R22	Resistor	STD	STD	1k	1206	Resistor, Chip, 1/4W, 1%
28	2	R9, R22	Resistor	STD	STD	55k	603	Resistor, Chip, 1/10W, 1%
29	2	R16, R17	Resistor	STD	STD	0.2R	1206	Resistor, Chip, 1/4W, 1%
30	1	R1	Resistor	STD	STD	500R	603	Resistor, Chip, 1/10W, 1%
31	1	R11	Resistor	STD	STD	470R	603	Resistor, Chip, 1/10W, 1%
32	1	R3	Resistor	STD	STD	50R	805	Resistor, Chip, 1/8W, 1%
33	1	R18	Resistor	STD	STD	25K	603	Resistor, Chip, 1/10W, 1%
34	1	R14	Resistor	STD	STD	75K	603	Resistor, Chip, 1/10W, 1%
35	1	R19	Resistor	STD	STD	18k	603	Resistor, Chip, 1/10W, 1%
36	2	R8, R25	Resistor	STD	STD	NA	603	Resistor, Chip, 1/10W, 1%
37	1	U1	Controller	LM5025A	TI	STD	TSSOP-16	Active Clamp Voltage Mode PWM Controller
38	1	U2	Opto-Coupler	FOD817A	Fairchild	STD	L*W:10.3mm*4.04mm	4-Pin Phototransistor Optocouplers
39	1	U3	Shunt Voltage Reference	TL431AIDBZ	TI	STD	SOT23-3	Precision Programmable Reference
40	1	D4	Zener Diode	BZT52C10	Diodes	10V	SOD-123	Surface Mount Zener Diode
41	4	D1, D2, D3, D5, D6	Diode	BAS16	Diodes	200mA, 100V	SOT23-3	Surface Mount Switching Diode
42	1	L1	Inductor	7443551111	Würth Elektronik	11.3uH	L*W:12.8mm*13mm	Rated Current11A, Saturation Current9.5A
43	1	L2	Inductor	LPS4414-105MR	Coincraft	1mH	L*W:4.7mm*4.7mm	Rated Current0.1A, Saturation Current0.1A
44	1	Q1	NPN Transistor	MMBT3904	Diodes	200mA/40V	SOT23-3	40V NPN Small Signal Surface Mount Transistor
45	2	Q2, Q4	MOSFET-N	CSD17552	TI	60A/30V	SON5mm*6mm	30V N-Channel NexFET Power MOSFETs
46	1	Q3	MOSFET-P	IRFL9110	VISHAY	1.1A/100V	SOT-223	Power MOSFET, Vds=-100V, Id=1.1A
47	1	Q5	MOSFET-N	CSD19533	TI	75A/100V	SON5mm*6mm	100V N-Channel NexFET Power MOSFETs
48	1	T1	Transformer	EFD15	Würth Elektronik	STD	L*W:15.75mm*22.23mm	10Pin, L*W:15.75mm*22.23mm

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.