

PMP11399 REV A Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
PCB1	1		PMP11399	Any	Printed Circuit Board	
C1, C2, C9, C10, C13, C14, C18, C21, C22, C23, C35, C36, C220, C235	14	1uF	GRM188R61H105KAALD	MuRata	CAP, CERM, 1 µF, 50 V, +/- 10%, X5R, 0603	0603
C3, C4, C12, C15, C29, C30, C33	7	0.01uF	C1005X7R1E103K	TDK	CAP, CERM, 0.01 µF, 25 V, +/- 10%, X7R, 0402	0402
C5, C6, C7, C8, C11, C16, C19, C20, C25, C26, C37, C172, C198, C210, C217, C225, C232, C240, C301, C305, C306, C307, C308, C309, C310, C311, C312	27	0.1uF	C1005X7R1H104K050BB	TDK	CAP, CERM, 0.1 µF, 50 V, +/- 10%, X7R, 0402	0402
C17, C157, C158, C159, C160, C183, C184, C185, C186, C206, C207, C208, C209, C221, C222, C223, C224	17	22uF	GRM21BR61E226ME44L	MuRata	CAP, CERM, 22 µF, 25 V, +/- 20%, X5R, 0805	0805
C24, C32, C34, C38, C39, C47, C51, C52, C61, C70, C79, C88, C97, C106, C114, C124, C154, C163, C179, C180, C189, C205, C218, C233, C259, C278, C280, C299	28	1000pF	C1005X7R1H102K	TDK	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0402	0402
C27, C28, C266, C286	4	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0402	0402
C31	1	0.1uF	C1608X7R1E104K	TDK	CAP, CERM, 0.1 µF, 25 V, +/- 10%, X7R, 0603	0603
C40	1	0.056uF	GRM188R71H563KA93D	MuRata	CAP, CERM, 0.056 µF, 50 V, +/- 10%, X7R, 0603	0603
C41, C42	2	2.2uF	GRM188R61C225KAAD	MuRata	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0603	0603
C43, C44	2	1uF	C1005X5R1C105K050BC	TDK	CAP, CERM, 1 µF, 16 V, +/- 10%, X5R, 0402	0402
C45, C46, C48, C49	4	22pF	C1005C0G1H220J050BA	TDK	CAP, CERM, 22 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C50	1	3300pF	C1005X7R1H332K	TDK	CAP, CERM, 3300 pF, 50 V, +/- 10%, X7R, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
C53, C54, C55, C56, C57, C71, C72, C73, C74, C75, C89, C90, C91, C92, C93, C107, C108, C109, C110, C111	20	22uF	GRM31CR61C226KE15L	MuRata	CAP, CERM, 22 μ F, 16 V, +/- 10%, X5R, 1206	1206
C58, C76, C94, C112	4	1uF	GRM188R61E105KA12D	MuRata	CAP, CERM, 1 μ F, 25 V, +/- 10%, X5R, 0603	0603
C59, C77, C95, C113	4	3300pF	GRM188R71H332KA01D	MuRata	CAP, CERM, 3300 pF, 50 V, +/- 10%, X7R, 0603	0603
C60, C78, C96, C115	4	0.1uF	06033C104JAT2A	AVX	CAP, CERM, 0.1 μ F, 25 V, +/- 5%, X7R, 0603	0603
C62, C63, C80, C81, C98, C99, C116, C117, C126, C127, C128, C129	12	470uF	EEF-GX0E471R	Panasonic	CAP, Aluminum Polymer, 470 μ F, 2.5 V, +/- 20%, 0.003 ohm, SMD_7.3x1.9x4.3mm SMD	SMD_7.3x1.9x4.3mm
C64, C82, C104, C118	4	0.1uF	C1005X7R1H104K	TDK	CAP, CERM, 0.1 μ F, 50 V, +/- 10%, X7R, 0402	0402
C65, C66, C67, C68, C83, C84, C85, C86, C100, C101, C102, C103, C119, C120, C121, C122, C130, C131, C132, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C149, C150, C151, C152, C153	40	100uF	JMK316BJ107ML-T	Taiyo Yuden	CAP, CERM, 100 μ F, 6.3 V, +/- 20%, X5R, 1206	1206
C69, C87, C105, C123	4	4.7uF	GRM188R61C475KAAJ	MuRata	CAP, CERM, 4.7 μ F, 16 V, +/- 10%, X5R, 0603	0603
C125, C155, C182, C211, C226, C260, C261, C281, C282	9	220uF	16SEPC220MD	Panasonic	CAP, Polymer, 220 μ F, 16 V, +/- 20%, 0.013 ohm, TH	8.0x7.0mm
C156, C181	2	330pF	GRM155R71H331KA01D	MuRata	CAP, CERM, 330 pF, 50 V, +/- 10%, X7R, 0402	0402
C161, C162, C187, C188	4	6800pF	GRM155R71H682KA88D	MuRata	CAP, CERM, 6800 pF, 50 V, +/- 10%, X7R, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
C164, C165, C166, C167, C168, C169, C190, C191, C192, C193, C194, C195, C213, C214, C215, C228, C229, C230	18	100uF	GRM31CR60J107ME39L	MuRata	CAP, CERM, 100 µF, 6.3 V, +/- 20%, X5R, 1206	1206
C170, C171, C196, C197	4	22uF	GRM21BR61C226ME44	MuRata	CAP, CERM, 22uF, 16V, +/-20%, X5R, 0805	0805
C173, C174, C199, C200	4	2.2uF	C1005X5R1C225K050BC	TDK	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0402	0402
C175, C201, C219, C234	4	4.7uF	GRM188R61C475KAAJ	MuRata	CAP, CERM, 4.7uF, 16V, +/-10%, X5R, 0603	0603
C176, C177, C202, C203	4	1200pF	GRM155R71H122KA01D	MuRata	CAP, CERM, 1200 pF, 50 V, +/- 10%, X7R, 0402	0402
C212, C227	2	470pF	C1005X7R1H471K	TDK	CAP, CERM, 470 pF, 50 V, +/- 10%, X7R, 0402	0402
C236, C237, C238, C239, C243, C244, C245, C246, C247, C253, C254, C255, C256, C257, C258	15	22uF	GRM188R60J226MEA0J	MuRata	CAP, CERM, 22 µF, 6.3 V, +/- 20%, X5R, 0603	0603
C241	1	2.2uF	GRM155R61C225KE11D	MuRata	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0402	0402
C242, C250	2	1uF	GRM155R61E105KA12D	MuRata	CAP, CERM, 1 µF, 25 V, +/- 10%, X5R, 0402	0402
C248	1	2200pF	GRM155R71H222KA01D	MuRata	CAP, CERM, 2200 pF, 50 V, +/- 10%, X7R, 0402	0402
C249	1	33pF	GRM1555C1H330JA01D	MuRata	CAP, CERM, 33 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C251	1	0.01uF	GCM155R71E103KA37D	MuRata	CAP, CERM, 0.01 µF, 25 V, +/- 10%, X7R, 0402	0402
C252	1	100pF	GRM1555C1H101JA01D	MuRata	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C262, C263, C264, C283, C284, C285	6	10uF	GRM31CR61E106KA12L	MuRata	CAP, CERM, 10 µF, 25 V, +/- 10%, X5R, 1206	1206
C265, C288	2	470pF	GRM1555C1H471JA01D	MuRata	CAP, CERM, 470 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C267, C268, C269, C270, C271, C272, C273, C274, C289, C290, C291, C292, C293, C294, C295, C296	16	47uF	GRM32ER71A476ME15L	MuRata	CAP, CERM, 47 µF, 10 V, +/- 20%, X7R, 1210	1210
C276, C287	2	2.2uF	GRM21BR71E225KA73L	MuRata	CAP, CERM, 2.2 µF, 25 V, +/- 10%, X7R, 0805	0805
C277, C297	2	4.7uF	GRM21BR61E475KA12L	MuRata	CAP, CERM, 4.7 µF, 25 V, +/- 10%, X5R, 0805	0805
C279	1	1000pF	C0603C102K5RACTU	Kemet	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0603	0603
C300	1	10uF	GRM188R61E106MA73	MuRata	CAP, CERM, 10 µF, 25 V, +/- 20%, X5R, 0603	0603
C302, C303	2	22uF	C1608X5R0J226M080AC	TDK	CAP, CERM, 22 µF, 6.3 V, +/- 20%, X5R, 0603	0603
C304	1	3300pF	GRM155R71H332KA01D	MuRata	CAP, CERM, 3300 pF, 50 V, +/- 10%, X7R, 0402	0402
D1, D2, D3, D4	4	Orange	LTST-C170KFKT	Lite-On	LED, Orange, SMD	LED_0805
D5, D6	2	Yellow	LTST-C170KSKT	Lite-On	LED, Yellow, SMD	LED_0805
D7, D8, D9, D10, D11, D12, D13, D14, D28	9	Blue	LTST-C170TBKT	Lite-On	LED, Blue, SMD	LED_0805
D15	1	40V	MBR540T3G	ON Semiconductor	Diode, Schottky, 40 V, 5 A, SMC	SMC
D16	1	15V	5.0SMDJ15A	Littelfuse	Diode, TVS, Uni, 15 V, 5000 W, SMC	SMC

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
D17	1	100V	1N4148W-7-F	Diodes Inc.	Diode, Ultrafast, 100 V, 0.15 A, SOD-123	SOD-123
D18, D19, D20, D21, D22, D23, D24, D25, D26, D27	10	Green	LTST-C170KGKT	Lite-On	LED, Green, SMD	LED_0805
H1, H2, H3, H4, H5, H6	6		SJ61A2	3M	Bumpon, Hemisphere, 0.375 X 0.235, Black	Black Bumpon
H7	1		Any	Any	QTY 18 metal machine screw for lugs	#10 MAX
H8	1		Any	Any	QTY 18 metal hex nuts for lugs	#10 MAX
J1	1		PEC07DAAN	Sullins Connector Solutions	Header, 100mil, 7x2, Tin, TH	Header, 7x2, 100mil, Tin
J2, J3	2	1x3	PBC03SAAN	Sullins Connector Solutions	Header, 100mil, 3x1, Gold, TH	PBC03SAAN
J4	1		5103308-1	TE Connectivity	Header (shrouded), 100mil, 5x2, Gold, TH	5x2 Shrouded header
J5, J6, J7, J8, J9, J10, J11, J12, J13, J14, J15, J16, J17, J18, J19, J20, J21, J22	18		L35	Thomas & Betts	Connector, L Type Copper Single Conductor, TH	Connector, L Type Copper Single Conductor, TH
L1, L2, L3, L4	4	150nH	PA2607.151NLT	Pulse Engineering	Inductor, Ferrite, 150 nH, 41 A, 0.00029 ohm, SMD	10.31x7.65mm
L5	1	330nH	VLB10090HT-R33K-B2	TDK	Inductor, Ferrite, 330 nH, 32.8 A, 0.00033 ohm, SMD	SMD, 2-Leads, Body 10.2x10mm
L6	1	470nH	744301047	Würth Elektronik	Inductor, Shielded Drum Core, Ferrite, 470 nH, 35 A, 0.00032 ohm, SMD	11.3x8.9x11mm
L7	1	680nH	SPM10040T-R68M-B	TDK	Inductor, Shielded, Ferrite, 680 nH, 24 A, 0.0039 ohm, SMD	10.4x5.2x11 mm
L8	1	1uH	PIMB104T-1R0MS	Cyntec	Inductor, Shielded, Powdered Iron, 1 µH, 18 A, 0.003 ohm, SMD	2-Pin SMD, Body 10.85 x 10 mm, Height 4 mm
L9	1	220nH	IHLP2525AEERR22M01	Vishay-Dale	Inductor, Drum Core, Ferrite, 220 nH, 15 A, 0.0052 ohm, SMD	IND, 6.5x1.5x6.5mm
L10, L11	2	1.5uH	XAL1010-152MEB	Coilcraft	Inductor, Shielded, Composite, 1.5 µH, 36.6 A, 0.0016 ohm, SMD	Inductor, 11.3x10x10mm
L12	1	2.2uH	DFE252012P-2R2M	Toko	Inductor, Shielded, 2.2 µH, 2.6 A, 0.07 ohm, SMD	1008
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q18, Q19, Q21, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30	25	60V	2N7002-7-F	Diodes Inc.	MOSFET, N-CH, 60 V, 0.17 A, SOT-23	SOT-23
Q15	1	30V	CSD17570Q5B	Texas Instruments	MOSFET, N-CH, 30 V, 51 A, SON 5x6mm	SON 5x6mm
Q16	1	40 V	MMBT3904T-7-F	Diodes Inc.	Transistor, NPN, 40 V, 0.2 A, SOT-523	SOT-523
Q17	1	40 V	MMBT3906	Fairchild Semiconductor	Transistor, PNP, 40 V, 0.2 A, SOT-23	SOT-23
Q20, Q22	2	0.2V	MMBT3904	Fairchild Semiconductor	Transistor, NPN, 40V, 0.2A, SOT-23	SOT-23
R1	1	1.0	CRCW06031R00JNEA	Vishay-Dale	RES, 1.0 ohm, 5%, 0.1W, 0603	0603
R2	1	0.1	ERJ-3RSFR10V	Panasonic	RES, 0.1 ohm, 1%, 0.1W, 0603	0603
R3, R4	2	11.0k	CRCW040211K0FKED	Vishay-Dale	RES, 11.0 k, 1%, 0.063 W, 0402	0402
R5, R6, R28	3	20k	CRCW040220K0JNED	Vishay-Dale	RES, 20 k, 5%, 0.063 W, 0402	0402
R7, R8, R10, R12, R15, R17, R20, R22, R25, R27, R29, R30, R31, R32, R33, R34, R35, R36, R59, R61	20	200	CRCW0402200RFKED	Vishay-Dale	RES, 200, 1%, 0.063 W, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R9, R11, R13, R16, R18, R21, R23, R26, R40, R41, R42, R43, R86, R91, R92, R93, R94, R95, R96, R97, R99, R101, R102, R103, R104, R105, R106, R107, R110, R116, R118, R119, R120, R130, R154, R155, R156, R176, R196, R197, R199, R200, R201, R222, R223, R225, R226, R227, R247, R248, R262, R263, R282, R290, R298, R318, R322, R324, R325, R349	60	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
R14, R19	2	2.00k	CRCW04022K00FKED	Vishay-Dale	RES, 2.00 k, 1%, 0.063 W, 0402	0402
R24, R265	2	15.0k	CRCW040215K0FKED	Vishay-Dale	RES, 15.0 k, 1%, 0.063 W, 0402	0402
R37, R38, R39, R122, R123, R125, R139, R173, R213, R239, R255, R270, R289, R314, R328, R333	16	1.00k	CRCW04021K00FKED	Vishay-Dale	RES, 1.00 k, 1%, 0.063 W, 0402	0402
R44, R45, R46	3	DNP	CRCW04021K00FKED	Vishay-Dale	RES, 1.00 k, 1%, 0.063 W, 0402	0402
R47, R124, R150, R151, R174, R203, R205, R215, R229, R231, R241, R250, R253, R268, R278, R279, R291, R306, R332, R343	20	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, 0402	0402
R48, R50, R51	3	4.7k	CRCW06034K70JNEA	Vishay-Dale	RES, 4.7 k, 5%, 0.1 W, 0603	0603
R49	1	0	ERJ-3GEY0R00V	Panasonic	RES, 0 ohm, 5%, 0.1W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R52, R53, R54, R55, R56, R57, R138, R172, R204, R212, R230, R238, R276, R277, R288, R304, R326, R342	18	300	CRCW0402300RJNED	Vishay-Dale	RES, 300, 5%, 0.063 W, 0402	0402
R58, R60, R62, R63, R64, R65, R66, R67, R76, R77, R78, R79, R80, R81, R82, R83, R219, R245, R280, R281, R310, R337, R346, R351	24	30.1k	CRCW040230K1FKED	Vishay-Dale	RES, 30.1 k, 1%, 0.063 W, 0402	0402
R68, R69, R70, R71, R72, R73, R74, R75, R350	9	84.5	CRCW040284R5FKED	Vishay-Dale	RES, 84.5, 1%, 0.063 W, 0402	0402
R84, R85, R88, R89, R90	5	4.75k	CRCW04024K75FKED	Vishay-Dale	RES, 4.75 k, 1%, 0.063 W, 0402	0402
R108, R109	2	0.004	ERJ-M1WSF4M0U	Panasonic	RES, 0.004, 1%, 1 W, 2512	2512
R111	1	2.00	CRCW04022R00FKED	Vishay-Dale	RES, 2.00, 1%, 0.063 W, 0402	0402
R112, R114, R202, R228, R246, R261	6	10.0	CRCW040210R0FKED	Vishay-Dale	RES, 10.0, 1%, 0.063 W, 0402	0402
R113	1	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, 0603	0603
R115, R158	2	22.6k	CRCW040222K6FKED	Vishay-Dale	RES, 22.6 k, 1%, 0.063 W, 0402	0402
R117, R126	2	44.2k	CRCW040244K2FKED	Vishay-Dale	RES, 44.2 k, 1%, 0.063 W, 0402	0402
R127	1	7.32k	CRCW04027K32FKED	Vishay-Dale	RES, 7.32 k, 1%, 0.063 W, 0402	0402
R128	1	3.83k	CRCW04023K83FKED	Vishay-Dale	RES, 3.83 k, 1%, 0.063 W, 0402	0402
R129	1	6.98k	CRCW04026K98FKED	Vishay-Dale	RES, 6.98 k, 1%, 0.063 W, 0402	0402
R134	1	2.74k	CRCW04022K74FKED	Vishay-Dale	RES, 2.74 k, 1%, 0.063 W, 0402	0402
R143, R301	2	4.99k	CRCW04024K99FKED	Vishay-Dale	RES, 4.99 k, 1%, 0.063 W, 0402	0402
R144, R153	2	100	ERJ-2RKF1000X	Panasonic	RES, 100, 1%, 0.1 W, 0402	0402
R145, R146, R178, R182, R186, R190	6	2.2	CRCW04022R20JNED	Vishay-Dale	RES, 2.2, 5%, 0.063 W, 0402	0402
R147, R149, R352	3	0	ERJ-2GE0R00X	Panasonic	RES, 0, 5%, 0.063 W, 0402	0402
R148	1	2.43k	CRCW04022K43FKED	Vishay-Dale	RES, 2.43 k, 1%, 0.063 W, 0402	0402
R152	1	4.64k	CRCW04024K64FKED	Vishay-Dale	RES, 4.64 k, 1%, 0.063 W, 0402	0402
R157	1	78.7k	CRCW040278K7FKED	Vishay-Dale	RES, 78.7 k, 1%, 0.063 W, 0402	0402
R159	1	26.7k	CRCW040226K7FKED	Vishay-Dale	RES, 26.7 k, 1%, 0.063 W, 0402	0402
R160	1	9.31k	CRCW04029K31FKED	Vishay-Dale	RES, 9.31 k, 1%, 0.063 W, 0402	0402
R161	1	16.5k	CRCW040216K5FKED	Vishay-Dale	RES, 16.5 k, 1%, 0.063 W, 0402	0402
R162	1	61.9k	CRCW040261K9FKED	Vishay-Dale	RES, 61.9 k, 1%, 0.063 W, 0402	0402
R163, R165, R251, R266	4	20.0k	CRCW040220K0FKED	Vishay-Dale	RES, 20.0 k, 1%, 0.063 W, 0402	0402
R164, R168, R169	3	24.3k	CRCW040224K3FKED	Vishay-Dale	RES, 24.3 k, 1%, 0.063 W, 0402	0402
R166	1	39k	CRCW040239K0JNED	Vishay-Dale	RES, 39 k, 5%, 0.063 W, 0402	0402
R167, R329	2	150k	CRCW0402150KFKED	Vishay-Dale	RES, 150 k, 1%, 0.063 W, 0402	0402
R170, R274	2	48.7k	CRCW040248K7FKED	Vishay-Dale	RES, 48.7 k, 1%, 0.063 W, 0402	0402
R171	1	121k	CRCW0402121KFKED	Vishay-Dale	RES, 121 k, 1%, 0.063 W, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R175, R177, R292, R293, R302, R307, R308, R309, R316, R335	10	100k	CRCW0402100KFKED	Vishay-Dale	RES, 100 k, 1%, 0.063 W, 0402	0402
R179, R183, R187, R191	4	1.00	CRCW04021R00FKED	Vishay-Dale	RES, 1.00, 1%, 0.063 W, 0402	0402
R180, R181, R184, R185, R188, R189, R192, R193	8	1.00	CRCW06031R00FKEA	Vishay-Dale	RES, 1.00, 1%, 0.1 W, 0603	0603
R194, R195, R220, R221	4	49.9	CRCW040249R9FKED	Vishay-Dale	RES, 49.9, 1%, 0.063 W, 0402	0402
R198, R224	2	1.0	CRCW08051R00JNEA	Vishay-Dale	RES, 1.0, 5%, 0.125 W, 0805	0805
R207, R233	2	40.2k	CRCW040240K2FKED	Vishay-Dale	RES, 40.2 k, 1%, 0.063 W, 0402	0402
R209, R235	2	10.5k	CRCW040210K5FKED	Vishay-Dale	RES, 10.5 k, 1%, 0.063 W, 0402	0402
R210, R242, R243	3	51.1k	CRCW040251K1FKED	Vishay-Dale	RES, 51.1 k, 1%, 0.063 W, 0402	0402
R214, R240, R256, R271	4	200k	CRCW0402200KFKED	Vishay-Dale	RES, 200 k, 1%, 0.063 W, 0402	0402
R216, R217	2	23.7k	CRCW040223K7FKED	Vishay-Dale	RES, 23.7 k, 1%, 0.063 W, 0402	0402
R218, R244	2	76.8k	CRCW040276K8FKED	Vishay-Dale	RES, 76.8 k, 1%, 0.063 W, 0402	0402
R236	1	15.4k	CRCW040215K4FKED	Vishay-Dale	RES, 15.4 k, 1%, 0.063 W, 0402	0402
R249, R264	2	3.01	CRCW08053R01FKEA	Vishay-Dale	RES, 3.01, 1%, 0.125 W, 0805	0805
R254, R269	2	240k	CRCW0402240KFKED	Vishay-Dale	RES, 240 k, 1%, 0.063 W, 0402	0402
R257, R272, R305	3	32.4k	CRCW040232K4FKED	Vishay-Dale	RES, 32.4 k, 1%, 0.063 W, 0402	0402
R259	1	57.6k	CRCW040257K6FKED	Vishay-Dale	RES, 57.6 k, 1%, 0.063 W, 0402	0402
R260, R275	2	71.5k	CRCW040271K5FKED	Vishay-Dale	RES, 71.5 k, 1%, 0.063 W, 0402	0402
R283	1	3.92k	CRCW04023K92FKED	Vishay-Dale	RES, 3.92 k, 1%, 0.063 W, 0402	0402
R284, R303	2	10	CRCW040210R0JNED	Vishay-Dale	RES, 10, 5%, 0.063 W, 0402	0402
R285, R286	2	60.4k	CRCW040260K4FKED	Vishay-Dale	RES, 60.4 k, 1%, 0.063 W, 0402	0402
R287, R312	2	47.5k	CRCW040247K5FKED	Vishay-Dale	RES, 47.5 k, 1%, 0.063 W, 0402	0402
R294, R317	2	1.0	CRCW04021R00JNED	Vishay-Dale	RES, 1.0, 5%, 0.063 W, 0402	0402
R295, R319	2	51	CRCW040251R0JNED	Vishay-Dale	RES, 51, 5%, 0.063 W, 0402	0402
R296	1	2.49k	CRCW04022K49FKED	Vishay-Dale	RES, 2.49 k, 1%, 0.063 W, 0402	0402
R297	1	2.2	CRCW12062R20JNEA	Vishay-Dale	RES, 2.2, 5%, 0.25 W, 1206	1206
R299	1	49.9k	CRCW040249K9FKED	Vishay-Dale	RES, 49.9 k, 1%, 0.063 W, 0402	0402
R300, R323	2	10.0k	PCF0402-12-10KBT1	TT Electronics/IRC	RES, 10.0 k, 0.1%, 0.063 W, 0402	0402
R311	1	19.1k	CRCW040219K1FKED	Vishay-Dale	RES, 19.1 k, 1%, 0.063 W, 0402	0402
R313	1	22.1k	CRCW040222K1FKED	Vishay-Dale	RES, 22.1 k, 1%, 0.063 W, 0402	0402
R315, R334	2	453k	CRCW0402453KFKED	Vishay-Dale	RES, 453 k, 1%, 0.063 W, 0402	0402
R320	1	3.3	CRCW12063R30JNEA	Vishay-Dale	RES, 3.3, 5%, 0.25 W, 1206	1206
R321	1	45.3k	CRCW040245K3FKED	Vishay-Dale	RES, 45.3 k, 1%, 0.063 W, 0402	0402
R327	1	64.9k	CRCW040264K9FKED	Vishay-Dale	RES, 64.9 k, 1%, 0.063 W, 0402	0402
R336	1	300k	CRCW0402300KJNED	Vishay-Dale	RES, 300 k, 5%, 0.063 W, 0402	0402
R338, R339, R340, R341, R344, R345, R347, R348, R353, R354, R355, R356, R357, R358	14	0.01	WSL2010R0100FEA18	Vishay-Dale	RES, 0.01, 1%, 1 W, 2010	2010

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
RemoteSense+1, TP1, TP11, TP13, TP15, TP19, TP23, TP27, TP31, TP35, TP37, TP41, TP45	13	Red	5000	Keystone	Test Point, Miniature, Red, TH	Red Miniature Testpoint
RemoteSense-1, TP2, TP12, TP16, TP20, TP24, TP28, TP32, TP36, TP38, TP42, TP46	12	Black	5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
S1	1		KT11P2JM34LFS	C&K Components	Switch, Tactile, SPST-NO, 1VA, 32V, SMT	Switch, 6.3x5.36x6.6 mm, SMT
S2, S3, S4, S5, S6, S7, S8, S9, S10	9		1825255-8	TE Connectivity	Switch, Slide, SP3T, 3 Pos, 0.4 A, 20 VAC, TH	Switch, 4-Leads, SP3T, Body 16x6.7mm, TH
TP5, TP6, TP7, TP8	4	White	5002	Keystone	Test Point, Miniature, White, TH	White Miniature Testpoint
U1	1		TPS715A33DRBR	Texas Instruments	HIGH INPUT VOLTAGE, MICROPOWER SON PACKAGED, 80mA, LDO LINEAR REGULATORS, DRB0008A	DRB0008A
U2	1		REF5030IDGKR	Texas Instruments	Low-Noise, Very Low Drift, Precision VOLTAGE REFERENCE, DGK0008A	DGK0008A
U3	1		UCD90240ZRBR	Texas Instruments	24-Rail PMBus Power Sequencer and Power Manager, ZRB0157A	ZRB0157A
U4	1		TCA9517DGKR	Texas Instruments	LEVEL-TRANSLATING I2C BUS REPEATER, DGK0008A	DGK0008A
U5	1		LM25066IAPSQE/NOPB	Texas Instruments	System Power Management and Protection IC With PMBus, NHZ0024B	NHZ0024B
U6	1	TPS53647R TAR	TPS53647RTAR	Texas Instruments	4-Phase, D-CAP+TM Step-Down Buck Controller with NVM and PMBus Interface, RTA0040B	RTA0040B
U7, U8, U9, U10	4	CSD95372 B	CSD95372BQ5M	Texas Instruments	Synchronous Buck NexFET Power Stage, DQP0012A	DQP0012A
U11, U12	2		TPS544C25RVF	Texas Instruments	18V, 30A PMBUS SYNCHRONOUS BUCK CONVERTERS, RVF0040A	RVF0040A
U13	1		TPS53515RVER	Texas Instruments	High Performance, 12-A Single Synchronous Step-Down Converter, RVE0028A	RVE0028A
U14	1		TPS53513RVER	Texas Instruments	High Performance, 8-A Single Synchronous Step-Down Converter, RVE0028A	RVE0028A
U15	1		TPS53317ARGBR	Texas Instruments	6-A Output D-CAP+ Mode Synchronous Step-Down, Integrated-FET Converter for DDR Memory Termination, RGB0020A	RGB0020A
U16	1		TPS548D22RVF	Texas Instruments	TPS548D22, RVF0040A	RVF0040A
U17	1		TPS549A20RVER	Texas Instruments	1.5 to 18 V (4.5 to 25 V bias) Input, 12-A Single Synchronous Step-Down SWIFT™ Converter, RVE0028A	RVE0028A
U18	1		TPS62153RGTT	Texas Instruments	Buck Step Down Regulator with 3 to 17 V Input and 5 V Output, -40 to 85 degC, 16-Pin QFN (RGT), Green (RoHS & no Sb/Br)	RGT0016C
U19, U20, U21, U22, U23, U24, U25, U26	8		INA194AIDBVR	Texas Instruments	CURRENT SHUNT MONITOR -16V to +80V Common-Mode Range, DBV0005A	DBV0005A
C178	0	DNP	GRM1555C1H331FA01J	MuRata	CAP, CERM, 330 pF, 50 V, +/- 1%, C0G/NP0, 0402	0402
C204	0	DNP	GRM1555C1H330JA01D	MuRata	CAP, CERM, 33 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
C216, C231	0	DNP	GRM31CR60J107ME39L	MuRata	CAP, CERM, 100 µF, 6.3 V, +/- 20%, X5R, 1206	1206
C275, C298	0	DNP	GRM1555C1H102JA01D	MuRata	CAP, CERM, 1000 pF, 50 V, +/- 5%, C0G/NP0, 0402	0402
FID1, FID2, FID3, FID4, FID5, FID6	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	Fiducial
R87	0	DNP	CRCW0402100KFKED	Vishay-Dale	RES, 100 k, 1%, 0.063 W, 0402	0402

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R98, R121, R131, R132, R133, R135, R136, R137, R140, R141, R142, R206, R211, R232, R237, R252, R258, R267, R273	0	DNP	CRCW0402187KFKED	Vishay-Dale	RES, 187 k, 1%, 0.063 W, 0402	0402
R100, R331	0	DNP	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
R208, R234	0	DNP	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, 0402	0402
R330	0	DNP	CRCW0402150KFKED	Vishay-Dale	RES, 150 k, 1%, 0.063 W, 0402	0402

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.