

PMP23227 REV -1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
IPC B1	1		PMP23227	Any	Printed Circuit Board	
C1	1	3.6mF	UCM1V362MNJ1MS	Nichicon	3600 µF 35 V Aluminum Electrolytic Capacitors Radial, Can - SMD 5000 Hrs @ 105°C	RADIAL
C2, C3, C5	3	1uF	CGA6M2X7R2A105K200AA	TDK	CAP, CERM, 1 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210	1210
C4	1	0.1uF	GCJ188R72A104KA01D	MuRata	CAP, CERM, 0.1 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C6, C120	2	3300pF	CGA2B2X7R1H332K050BA	TDK	CAP, CERM, 3300 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	0402
C7, C116, C119	3	0.1uF	CGA3E2X7R1H104K080AA	TDK	CAP, CERM, 0.1 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C8, C9, C11, C12, C25, C26, C39	7	0.01uF	GCM155R71H103KA55D	MuRata	CAP, CERM, 0.01 uF, 50 V, +/- 10%, C0G/NP0, 0402	0402
C10	1	0.047uF	CGA4J2X7R2A473K125AA	TDK	CAP, CERM, 0.047 uF, 100 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C13, C14	2	4.7uF	CL31B475KBHVPNE	Samsung	CAP, CERM, 4.7uF, 50V, X7R, 10%, 1206	1206
C15, C17, C28, C36, C38	5	0.1uF	CL05B104KB54PNC	Samsung	CAP, CERM, 0.1uF, 50V, X7R, 10%, 0402	0402
C16, C29	2	4.7uF	CL21B475KPQVPNE	Samsung	CAP, CERM, 4.7uF, 10V, X7R, 10%, 0805	0805
C18, C19	2	100µF	A781MS107M1JLAS030	KEMET	100 µF 63 V Aluminum - Polymer Capacitors Radial, Can - SMD 30mOhm 2000 Hrs @ 135°C	RADIAL_SMT
C21, C22, C23, C24	4	10uF	CGA5L1X7R1V106K160AE	TDK	CAP, CERM, 10uF, 35V, X7R, 10%, 1206	1206
C27	1	0.47uF	CGA4J3X7R1H474K125AB	TDK	CAP, CERM, 0.47 uF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C30, C31, C32, C33, C34, C35	6	22uF	CL32B226MOJVPNE	Samsung	CAP, CERM, 22uF, 16V, X7R, 20%, 1210	1210
C40	1	6800pF	CGA2B2X7R1H682K050BA	TDK	CAP, CERM, 6800 pF, 50 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0402	0402
C41, C59	2	10pF	CL05C100JB51PNC	Samsung	CAP, CERM, 10pF, 50V, NP0/COG, 5%, 0402	0402
C42, C68	2	0.022uF	GRM155R71C223JA01D	Murata	CAP, CERM, 0.022uF, 16V, X7R, 5%, 0402	0402
C43	1	470uF	GYA1C471MCW1GS	Nichicon	CAP, Al Electrolytic, 470uF, 16V, +/-20%, 0.02 Ohm ESR, 2.1Arms @ 100kHz, SMT	
C44, C47, C77, C80, C121, C122, C123, C124, C129, C142, C153, C154, C155, C156, C169, C170	16	10uF	GCM21BR71A106KE22L	MuRata	CAP, CERM, 10 uF, 10 V, +/- 10%, X7R, 0805	0805
C45, C48, C78, C81	4	2.2uF	CL10Y225KP84PNC	Samsung	CAP, CERM, 2.2uF, 10V, X7S, 10%, 0603	0603
C46, C49, C56, C57, C60, C61, C62, C63, C79, C82, C89, C90, C157, C181	14	0.47uF	GCM155C71A474KE36D	MuRata	CAP, CERM, 0.47 uF, 10 V, +/- 10%, X7S, 0402	0402
C50, C53, C83, C86	4	47uF	GCM32ER70J476KE19L	MuRata	CAP, CERM, 47 uF, 6.3 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210	1210
C52, C55, C64, C65	4	0.1uF	GCM155R71C104KA55D	MuRata	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0402	0402
C58	1	8.2nF	GCM1885C1H822JA16D	Murata	CAP, CERM, 8.2nF, 50V, C0G/NP0, 5%, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
C66, C67, C69, C70	4		NFM15HC105D0G3	Murata	3 Terminals Chip Multilayer Ceramic Capacitor (EMIFIL)	0402
C71, C72, C136, C137, C138, C139, C149, C150, C151, C152, C165, C166, C167, C168, C177, C178, C179, C180	18	10uF	NFM18HC106D0G3	MuRata	CAP, CERM, 10 µF, 4 V,+/- 20%, 1.6x0.8mm	1.6x0.8mm
C73, C74	2	22uF	GCM31CR71A226KE02L	MuRata	CAP, CERM, 22 uF, 10 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1206	1206
C75, C76, C85, C88	4	100uF	GRT32ER60J107ME13L	MuRata	CAP, CERM, 100 µF, 6.3 V,+/- 20%, X5R, AEC-Q200 Grade 3, 1210	1210
C117	1	0.22uF	GRM188R71E224KA88D	MuRata	CAP, CERM, 0.22 uF, 25 V, +/- 10%, X7R, 0603	0603
C118	1	4.7uF	CGA4J3X7R1A475K125AB	TDK	CAP, CERM, 4.7 µF, 10 V,+/- 10%, X7R, AEC-Q200 Grade 1, 0805	0805
C125, C126, C127, C128, C184, C185, C186, C187, C188, C189, C190, C191	12	0.1uF	GRM155R71C104KA88D	MuRata	CAP, CERM, 0.1 uF, 16 V, +/- 10%, X7R, 0402	0402
C130, C131, C133, C143, C144, C146, C159, C160, C162, C171, C172, C176	12	47uF	GCM32ER70J476ME19L	MuRata	CAP, CERM, 47 uF, 6.3 V, +/- 20%, X7R, 1210	1210
C140, C141	2		NFM18HC105C1C3D	Murata	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive	0603
C158	1	2.2uF	GCM188R70J225KE22D	MuRata	CAP, CERM, 2.2 uF, 6.3 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C182	1	1uF	GCM188R71C105KA64D	MuRata	CAP, CERM, 1 uF, 16 V, +/- 10%, X7R, AEC-Q200 Grade 1, 0603	0603
C183	1	2.2uF	GRM21BR71A225KA01L	MuRata	CAP, CERM, 2.2 uF, 10 V, +/- 10%, X7R, 0805	0805
Cx1	1	10uF	CL10B106MQ8NRNC	Samsung Electro-Mechanics	CAP, CERM, 10 µF, 6.3 V,+/- 20%, X7R, 0603	0603
D1	1	33V	TPSMD33CA	Littlefuse	Diode, TVS, Bi, 3kW, 33V, SMC	SMC
D4, D7, D14, D15	4	60V	PMEG6010CEH,115	Nexperia	Diode, Schottky, 60 V, 1 A, SOD-123F	SOD-123F
D5	1	36V	PDZVTFTR36B	Rohm	Diode, Zener, 36V, +/-5.56%, 1W, SOD-128	SOD-128
D6, D8, D9, D11, D13	5	Green	150060GS75000	Würth Elektronik	LED, Green, SMD	LED_0603
D10, D12	2	60V	PMEG6010CEJ,115	Nexperia	Diode, Schottky, 60 V, 1 A, SOD-323F	SOD-323F
H1, H2, H3, H4	4		NY PMS 440 0025 PH	B&F Fastener Supply	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw
H5, H6, H7, H8	4		1902C	Keystone	Standoff, Hex, 0.5"L #4-40 Nylon	Standoff
J3, J4	2		TSW-102-07-G-S	Samtec	Header, 100mil, 2x1, Gold, TH	2x1 Header
J5, J12, J14, J15	4		TSM-102-01-L-SV	Samtec	Header, 100mil, 2x1, Gold with Tin Tail, SMT	2x1 Header
J6, J7, J8, J9, J33	5		5102	Keystone	Shorting Jumper, 5.375mm, 2 Position, Tin, SMT	Shorting Jumper, 5.375mm, 2 Position, SMT
J10, J16, J17, J19, J21, J24, J26	7		U.FL-R-SMT-1(01)	Hirose Electric Co. Ltd.	Receptacle, Ultra Miniature Coaxial, Male Pin, 50 ohm, SMT	Ultra small CO-AX SMD
J13	1		N2510-6002-RB	3M	Header (shrouded), 100mil, 5x2, High-Temperature, Gold, TH	5x2 Shrouded header
J22, J25, J31, J32	4		TSW-103-07-G-S	Samtec	Header, 100mil, 3x1, Gold, TH	3x1 Header

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J27, J28	2		6651712-1	TE Connectivity	Receptacle, 2.5mm, 3x2, Gold, SMT	Receptacle, 2.5mm, 3x2, SMT
L1	1	1.5uH	XGL1060-152MEC	Coilcraft	Shielded Power Inductors 1.5uH 20% 31.3A 2.8mOhm	SMT2_10MM0_11MM3
L2, L6	2	56nH	IHSR2525CZER56NM5A	Vishay Dale	Power Inductor, 56nH, Shielded, 58A	SMT2_6MM65_6MM65
L10, L11, L13	3	220nH	TFM322512ALMAR22MTAA	TDK	Inductor, Thin Film, 220 nH, 7.6 A, 0.01 ohm, AEC-Q200 Grade 0, SMD	TDK Inductor
L12	1	470nH	TFM322512ALMAR47MTAA	TDK	Inductor, Thin Film, 470 nH, 5.3 A, 0.021 ohm, AEC-Q200 Grade 0, SMD	TDK Inductor
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, Q2	2	60V	NVMFS5C612NWFT1G	ON Semiconductor	MOSFET, N-CH, 60V, 1.65mOhm Max @ 10Vgs @ 25C Tj, DFN5/SO-8FL	DFN5/SO-8FL
Q3, Q5	2	40V	IAUC100N04S6L025ATMA1	Infineon	MOSFET, N-CH, 40V, 2.9mOhm Typ. @ 4.5Vgs, PG-TDSON-8	PG-TDSON-8
Q7, Q8, Q11, Q12	4	30V	NX3020NAKW,115	Nexperia	MOSFET, N-CH, 30 V, 0.18 A, SOT-323	SOT-323
Q9, Q10	2	25V	CSD16556Q5B	Texas Instruments	MOSFET, N-CH, 25 V, 40 A, DNK0008A (VSON-CLIP-8)	DNK0008A
R1	1	0.002	D1CPA0612RR002FFA-T50	Thin Film Technology Corp.	RES, 0.002 ohm, 1%, 1W, 4-terminal Kelvin sense, 1206 Wide	1206 Wide 4-Terminal
R2	1	88.7k	CRCW060388K7FKEA	Vishay-Dale	RES, 88.7 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R3	1	1.00k	CRCW04021K00FKED	Vishay-Dale	RES, 1.00 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R4, R45, R74, R76, R79, R82, R84, R89	8	49.9	RC0402FR-0749R9L	Yageo America	RES, 49.9, 1%, 0.063 W, 0402	0402
R5, R6, R7, R48	4	0.15	TLRP3A30WR150FTE	TE Connectivity	RES, 0.15 ohm, 1%, 3W, 2512	2512
R8	1	100	CRCW0603100RJNEA	Vishay-Dale	RES, 100, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R9, R11, R12, R15, R17, R36, R38, R42, R63, R67, R68, R70, R71, R88, R95, R101, R102, R103, R108, Rx3	20	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R10	1	324k	CRCW0603324KFKEA	Vishay-Dale	RES, 324 k, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R14, R53	2		RMCF0402ZT0R00	Stackpole	RMCF/RMCP Series General Purpose Thick Film Standard Power and High Power Chip Resistor	0402 (1005 metric)
R16	1	23.2k	CRCW040223K2FKED	Vishay-Dale	RES, 23.2 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R19	1	200	CRCW1206200RFKEA	Vishay-Dale	RES, 200, 1%, 0.25 W, AEC-Q200 Grade 0, 1206	1206
R20, R29, R61, R66, R100	5	750	CRCW0402750RFKED	Vishay-Dale	RES, 750, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R22, R23	2	0	ERJ-3GEY0R00V	Panasonic	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R25	1	0.003	WSL10203L000FEA	Vishay	3 mOhms ±1% 2W Chip Resistor Wide 2010 (5025 Metric), 1020 Anti-Sulfur, Automotive AEC-Q200, Current Sense, Moisture Resistant, Pulse Withstanding Metal Element	1020
R26	1	130k	CRCW0402130KFKED	Vishay-Dale	RES, 130 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R28	1	1	CRCW08051R00FKEA	Vishay-Dale	RES, 1.00, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R30	1	49.9	CRCW040249R9FKED	Vishay-Dale	RES, 49.9, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R33	1	49.9k	CRCW040249K9FKED	Vishay-Dale	RES, 49.9 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R35	1	49.9	CRCW080549R9FKEA	Vishay-Dale	RES, 49.9, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R37	1	52.3k	CRCW040252K3FKED	Vishay-Dale	RES, 52.3 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R39	1	6.49k	CRCW04026K49FKED	Vishay-Dale	RES, 6.49 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R40	1	41.2k	CRCW040241K2FKED	Vishay-Dale	RES, 41.2 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R43, R44, R55, R56	4	12.4	CRCW040212R4FKED	Vishay-Dale	RES, 12.4, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402

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R46, R59	2	0.001	RL1632T4F-R001-FNH	Delta/Cyntec	RES, 0.001 ohm, 1%, 1W, 4-terminal Kelvin sense, 1206 Wide	1206 Wide 4-Terminal
R47	1		RMCF0805ZT0R00	Stackpole Electronics	0 Ohms Jumper 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Automotive AEC-Q200 Thick Film	0805
R52	1	6.19k	CRCW04026K19FKED	Vishay-Dale	RES, 6.19 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R54	1	1.69k	RC0603FR-071K69L	Yageo	RES, 1.69 k, 1%, 0.1 W, 0603	0603
R57, R58, R87	3	2.00k	CRCW04022K00FKED	Vishay-Dale	RES, 2.00 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R60	1	47.5k	CRCW040247K5FKED	Vishay-Dale	RES, 47.5 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R64	1	0	RMCF0402ZT0R00	Stackpole	RMCF/RMCP Series General Purpose Thick Film Standard Power and High Power Chip Resistor	0402 (1005 metric)
R65, R72	2	10k Ohm	PV36W103C01B00	Bourns	Potentiometer, 10k Ohm, 0.5W, TH	9.53x4.83mm
R69	1	324k	CRCW0402324KFKED	Vishay-Dale	RES, 324 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R73	1	133	CRCW0603133RFKEA	Vishay-Dale	RES, 133, 1%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R77, R80, R81, R85, R91, R92, R93, R94, R96, R97, R98, R107, R109	13	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R86	1	105	CRCW0805105RFKEA	Vishay-Dale	RES, 105, 1%, 0.125 W, AEC-Q200 Grade 0, 0805	0805
R90	1	6.34k	CRCW04026K34FKED	Vishay-Dale	RES, 6.34 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R99	1	5.36k	CRCW04025K36FKED	Vishay-Dale	RES, 5.36 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R104	1	0.06	CRA2512-FZ-R060ELF	Bourns	RES, 0.06 ohm, 1%, 3W, 2512	2512
R105	1	0	CRCW12060000Z0EA	Vishay-Dale	RES, 0, 5%, 0.25 W, AEC-Q200 Grade 0, 1206	1206
Rx1	1	23.7k	CRCW040223K7FKED	Vishay-Dale	RES, 23.7 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
SH-J1, SH-J2, SH-J3, SH-J4, SH-J5, SH-J6, SH-J7, SH-J8	8		60900213421	Würth Elektronik	Shunt, 2.54mm, Gold, Black	Shunt, 2.54mm, Black
T1, T2, T3, T4, T5, T6	6		CB70-14-CY	Panduit	Terminal 90A Lug	CB70-14-CY
TP1, TP2, TP6, TP8, TP14, TP15	6		5010	Keystone	Test Point, Multipurpose, Red, TH	Red Multipurpose Testpoint
TP3, TP11, TP13, TP16, TP17, TP20	6		5011	Keystone, Keystone Electronic	Test Point, Multipurpose, Black, TH	Black Multipurpose Testpoint
TP4, TP5, TP7, TP9, TP10, TP12, TP18, TP19, TP27, TP30, TP31, TP32, TP33	13		5012	Keystone	Test Point, Multipurpose, White, TH	White Multipurpose Testpoint
TP21, TP22, TP23, TP24, TP25, TP26, TP28, TP29	8		1598-2	Keystone	Terminal, Turret, TH, Triple	Keystone1598-2
U1	1		LM74910_Q1	Texas Instruments		VQFN-24
U2	1		TPS7B6933QDCYRQ1	Texas Instruments	Automotive High-Voltage Ultra-Low IQ Low-Dropout Regulator/Fixed 3.3-V Output Voltage, DCY0004A (SOT-223-4)	DCY0004A
U3	1		LM25148QRGYRQ1	Texas Instruments	Automotive Synchronous Buck DC/DC Controller with Ultra-Low IQ, Adjustable, 0.8-36V, VQFN24	VQFN24
U4, U5	2		TPS62876QWRYURQ1	Texas Instruments	2.7-V to 6-V Input, 15-A, 20-A, and 25-A Fast Transient Synchronous Step-Down Converter with I2C Interface	VQFN-FCRLF15
U6	1		LM5112MY/NOPB	Texas Instruments	Tiny 7A MOSFET Gate Driver, DGN0008A (HVSSOP-8)	DGN0008A
U7	1		TLC555CD	Texas Instruments	2.1-MHz, 250-uA, Low-Power Timer, D0008A (SOIC-8)	D0008A
U8	1		LP876945C6RQKRQ1	Texas Instruments	Four-Phase, 20-A Buck Converter With Integrated Switches	VQFN-HR32

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U10	1		TL431AQDBZRQ1	Texas Instruments	Automotive Catalog Adjustable Precision Shunt Regulator, 34 ppm / degC, 100 mA, -40 to 125 degC, 3-pin SOT-23 (DBZ), Green (RoHS & no Sb/Br)	DBZ0003A
U11	1		TPS389006RTERQ1	Texas Instruments	ASIL-D Multichannel Overvoltage and Undervoltage I2C Programmable Voltage Supervisor and Monitor	WQFN16
Ux9	1		TPS74615PQWDRVRQ1	Texas Instruments	Automotive, 1-A LDO With Power-Good in Small Wettable Flank WSON Packages	WSON6
C20	0	10uF	CGA5L1X7R1V106K160AE	TDK	CAP, CERM, 10uF, 35V, X7R, 10%, 1206	1206
C37	0	1000pF	GCM1885C2A102JA16D	MuRata	CAP, CERM, 1000 pF, 100 V, +/- 5%, C0G/NP0, AEC-Q200 Grade 1, 0603	0603
C51, C54, C84, C87	0	47uF	GCM32ER70J476KE19L	MuRata	CAP, CERM, 47 uF, 6.3 V, +/- 10%, X7R, AEC-Q200 Grade 1, 1210	1210
C99	0	10pF	CL05C100JB51PNC	Samsung	CAP, CERM, 10pF, 50V, NP0/C0G, 5%, 0402	0402
C132, C134, C135, C145, C147, C148, C161, C163, C164, C173, C174, C175	0	47uF	GCM32ER70J476ME19L	MuRata	CAP, CERM, 47 uF, 6.3 V, +/- 20%, X7R, 1210	1210
D2	0	33V	1.5SMBJ33A-H	Bourns Inc.	Diode, TVS, Uni, 1.5kW, 33V, SMB	SMB
D3	0	16V	SMBJ16AQ-13-F	Diodes Inc.	Diode, TVS, Uni, 600kW, 16V, SMB	SMB
FID1, FID2, FID3	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	N/A
J1, J2, J11	0		5102	Keystone	Shorting Jumper, 5.375mm, 2 Position, Tin, SMT	Shorting Jumper, 5.375mm, 2 Position, SMT
J18, J20, J23, J29	0		S1911-46R	Harwin	JUMPER TIN SMD	6.85x0.97x2.51 mm
L3, L7	0	50nH	SLC7530S-500MLB	Coilcraft	Inductor, Shielded, Ferrite, 50 nH, 40 A, 0.000123 ohm, SMD	7.5x3.0x6.7mm
L4, L8	0	80nH	HPL505032F1080MRD3P	TDK	80 nH Shielded Wirewound Inductor 34 A 777mOhm Max Nonstandard	SMT3_5MM0_5MM0
L5, L9	0	42nH	CLT32-42N	EPCOS	42 nH Shielded Molded Inductor 28 A 1mOhm 4-SMD	SMT_IND_3MM2_2M M5
Q4, Q6	0	40V	IAUC100N04S6L025ATMA1	Infineon	MOSFET, N-CH, 40V, 2.9mOhm Typ. @ 4.5Vgs, PG-TDSON-8	PG-TDSON-8
R13, R31, R34, R50	0		RMCF0402ZT0R00	Stackpole	RMCF/RMCP Series General Purpose Thick Film Standard Power and High Power Chip Resistor	0402 (1005 metric)
R18	0	100k	CRCW0402100KFED	Vishay-Dale	RES, 100 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R21	0		RMCF0805ZT0R00	Stackpole Electronics	0 Ohms Jumper 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Automotive AEC-Q200 Thick Film	0805
R24	0	0	ERJ-3GEY0R00V	Panasonic	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603
R27	0	0	ERJ-2GE0R00X	Panasonic	RES, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0402	0402
R32	0	7.5	ERJ-8BQJ7R5V	Panasonic	RES, 7.5 ohm, 5%, 0.5W, 1206	1206
R41	0	24.9k	CRCW040224K9FKED	Vishay-Dale	RES, 24.9 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R49	0	0.15	TLRP3A30WR150FTE	TE Connectivity	RES, 0.15 ohm, 1%, 3W, 2512	2512
R51, R62	0	47.5k	CRCW040247K5FKED	Vishay-Dale	RES, 47.5 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R75	0	0.062	PRL1632-R062-F-T1	Susumu Co Ltd	RES, 0.062, 1%, 1 W, 0612	0612
R78, R83	0	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, AEC-Q200 Grade 0, 0402	0402
R106	0	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402	0402

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