

## PMP10655 REV E1 Bill of Materials

H5, H6, H7, H8       4       1902C       Keystone       Standoff, Hex, 0.5"L #4-40 N         J1, J2, J3       3       2x1       1715721       Phoenix Contact       Conn Term Block, 2POS, 5.0         L1       1       1.9uH       7443556190       Wurth Elektronik       Inductor, Shielded Drum Corrothm, SMD         L2, L3       2       1.5uH       XAL1010-152MEB       Coilcraft       Inductor, Shielded, Composit	Description	PackageReference
C3, C4         C5, C7, C39,         6         82uF         APXH160ARA820MH70G         Nippon Chemi-Con         CAP, CERM, 0.1 μF, 100 V.           C40, C41         6         32uF         APXH160ARA820MH70G         Nippon Chemi-Con         CAP, AL, 82uF, 16V, 4/-20%           C40, C41         1         4.7uF         C3225X7S2A475K200AB         TDK         CAP, CERM, 47 μF, 16V, 4/-20%           C8, C38         2         47uF         C3216X5R1C476M160AB         TDK         CAP, CERM, 47 μF, 16V, 4/-20%           C9, C37         2         33pF         G6031A330JAT2A         AVX         CAP, CERM, 3p F, 63V, 4/-2           C11, C13         2         1uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 470 pF, 100 V, 4/-2           C11, C13         2         1uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 470 pF, 100 V, 4/-2           C14, C15, C16, C16, C33, C34, C35, C50, C51         8         2.2 μF         CL31B225KCHSNNE         Samsung Electro-Mechanics A         CAP, CERM, 470 pF, 100 V, 4/-2           C59, C50, C51         1         GRM188R71E103KA01D         MuRata         CAP, CERM, 0.01 μF, 25 V, 4/-4           C47         2         0.01uF         GRM188R72H105KA05D         MuRata         CAP, CERM, 0.33 μF, 100 V           C20, C27, C28, d         1 </th <th>•</th> <th><b>X</b></th>	•	<b>X</b>
C3, C4         2         0.1 μF         GRM32NR72A104KA01L         MuRata         CAP, CERM, 0.1 μF, 100 V.           C40, C41, C5, C7, C39, C40, C41         6         82 μF         APXH160ARA820MH70G         Nippon Chemi-Con         CAP, AL, 82μF, 16V, +/-20%, C40, C41           C6         1         4,7 υF         C3225X7S2A475K200AB         TDK         CAP, CERM, 47 μF, 16V, +/-20%, C47           C9, C37         2         33pF         D6031A330JAT2A         AVX         CAP, CERM, 3p F, 100 V.           C10         1         150UF         EV-FK1151SQ         Panasonic         CAP, CERM, 3p F, 60V, +/-CCCC           C11, C13         2         1 uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 470 pF, 100 V, +/-CCCC           C12, C36         2         470pF         B06051A371JAT2A         AVX         CAP, CERM, 470 pF, 100 V, +/-CCCC           C14, C15, C16, C33         C34, C35, C35, C35, C35, C35, C35, C35, C35	/, +/-10%, X7R, 0603	0603
C40, C41         A 7UF         C3225X7S2A475K200AB         TDK         CAP, CERM, 4.7 μF, 100 V, -           C8, C38         2         47UF         C3216X5R1C476M160AB         TDK         CAP, CERM, 47 μF, 160 V, -           C9, C37         2         33pF         06031A330JAT2A         AVX         CAP, CERM, 33 pF, 100 V, -           C10         1         150UF         EEV-FK115T9Q         Panasonic         CAP, AL, 150 µF, 63 V, -+/-           C11, C13         2         1µF         C3216X7R2A105M160AA         TDK         CAP, CERM, 1µF, 100 V, -+/-           C11, C15         C16, 6         8         2.2µF         CL31B225KCHSNNE         AVX         CAP, CERM, 470 pF, 100 V, -+/-           C33, C34, C35, C550, C51         C50, C51         CS0, C51         CAP, CERM, 470 pF, 100 V, -+/-           C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, -+/-           C20, C27, C28, C4         4         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 47 pF, 50 V, -+/-           C47         C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.33 μF, 100 V, e-           C22, C24         2         2.uF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.		1210
C40, C41         4 7uF         C3225X7S2A475K200AB         TDK         CAP, CERM, 4.7 μF, 100 V, -           C8, C38         2 47uF         C3216X5R1C476M160AB         TDK         CAP, CERM, 47 μF, 160 V, -           C9, C37         2 33pF         D6031A330JA1ZA         AVX         CAP, CERM, 33 pF, 100 V, -           C10         1 150uF         EEV-FK1151SQ         Panasonic         CAP, AL, 150 µF, 63 V, -+/-           C11, C13         2 1uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 147 pF, 500 V, -           C11, C15, C16,         8 2.2µF         CL31B225KCHSNNE         Samsung Electro-Mechanics A         CAP, CERM, 470 pF, 100 V, -           C33, C34, C35,         C50, C51         C50, C51         C0003C470J5GACTU         Kemet         CAP, CERM, 0.01 µF, 25 V, -           C18, C31         2 0.01uF         GRM188R71E103K080AB         TDK         CAP, CERM, 47 pF, 50 V, -           C47         C20, C27, C28,         4 1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 0.33 µF, 100 V, -           C21, C29         2 0.33uF         GRM21AR72A334KACSL         MuRata         CAP, CERM, 0.33 µF, 100 V, -           C22, C24         2 2.2uF         C0603C225M9PACTU         Kemet         CAP, CERM, 0.01 µF, 100 V, -           C26         1 0.47uF         GRM188		H70
C8, C38         2         47μF         C3216XSR1C476M160AB         TDK         CAP, CERM, 47μF, 16V, 47-7           C9, C377         2         33pF         060314330JATZA         AVX         CAP, CERM, 33 pF, 100 L           C10         1         150uF         EEV-FK1J151Q         Panasonic         CAP, AL, 150 μF, 63 V, 47-2           C11, C13         2         1μF         C3216X7R2A105M160AA         TDK         CAP, CERM, 10F, 100V, 47-2           C12, C36         2         470pF         08051A471JAT2A         AVX         CAP, CERM, 41P, 100V, 47-2           C14, C15, C16,         8         2.2µF         CL31B225KCHSNNE         Samsung Electro-Mechanics A CAP, CERM, 100V, 10%;           C33, C34, C35,         C50, C51         2         0.01uF         GRM188R71E103KA01D         MuRata         CAP, CERM, 0.01 µF, 25 V, 400V,		
C9, C37         2         33pF         66031A330JAT2A         AVX         CAP, CERM, 33 pF, 100 V, 4-2           C10         1         150uF         EEV-FK1J151Q         Panasonic         CAP, AL, 150 μF, 63 V, 4-2           C11, C13         2         1uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 1uF, 100V, 4-2           C12, C36         2         470pF         08051A471JAT2A         AVX         CAP, CERM, 470 pF, 100 V, 4-2           C14, C15, C16, C33, C34, C35, C50         2         24pF         CL31B225KCHSNNE         Samsung Electro-Mechanics ACAP, CERM, 470 pF, 100 V, 4-2           C33, C34, C35, C50         C61         C61         C83, C34, C35, C61         CAP, CERM, 47pF, 50 V, 4-4           C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 4PpF, 50 V, 4-4           C47         C27, C28, C24         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 0.7 pF, 50 V, 4-4           C21, C29         2         0.33uF         GRM21RA72A334KACE         MuRata         CAP, CERM, 1pF, 50 V, 4-4           C21, C29         2         0.33uF         GRM21RA72A334KACE         MuRata         CAP, CERM, 1pF, 100 V, 4-4           C22, C24         2         2.ver         C0603C225M8PACTU         Kemet <t< td=""><td>V, +/- 10%, X7S, 1210</td><td>1210</td></t<>	V, +/- 10%, X7S, 1210	1210
C10         1         150uF         EV-FK1.1151Q         Panasonic         CAP, AL, 150 μF, 63 V, μ-/. 2           C11, C13         2         1uF         C3216X7R2A105M160AA         TDK         CAP, CERM, 1uF, 100V, μ-/. 2           C12, C36         2         470pF         080514A71JA12A         AVX         CAP, CERM, 470 pF, 100 V, 20. 2           C14, C15, C16, 8         2.2μF         CL31B225KCHSNNE         Samsung Electro-Mechanics & CAP, CERM, 470 pF, 100 V, 10%. 2           C33, C34, C35, C50, C51         2         0.01uF         GRM188R71E103KA01D         MuRata         CAP, CERM, 470 pF, 50 V, 4/           C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, 4/           C20, C27, C28, C47         4         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 1 μF, 25 V, 4/           C21, C29         2         0.33uF         GRM21AR72A334KACSL         MuRata         CAP, CERM, 0.33 μF, 100 V           C22, C24         2         2.2uF         C0603C225MBPACTU         Kemet         CAP, CERM, 0.01 μF, 50V, +           C23, C25         2         0.01uF         GRM188R71H103K01D         MuRata         CAP, CERM, 0.01 μF, 50V, +           C24         2         1uF         GRM188R72A104KA35J         MuRata		1206
C11, C13		0603
C12, C36         2         470pF         08051A471JAT2A         AVX         CAP, CERM, 470 pF, 100 V, C14, C15, C16, C13, C34, C35, C30, C35, C30, C35, C50, C51         8         2.2μF         CL31B225KCHSNNE         Samsung Electro-Mechanics A CAP, CERM, 470 pF, 100 V, 96, C33, C34, C35, C50, C51         CAP, CERM, 0.01 μF, 25 V, 47         C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, 47         C20, C27, C28, C47         C47         CAP, CERM, 47 pF, 50 V, 47         CAP, CERM, 1 μF, 25 V, 47         C47         CAP, CERM, 1 μF, 25 V, 47         C47         CAP, CERM, 1 μF, 25 V, 47         C47         C21, C29         2         0.33μF, 100 V, 47         C21, C29         2         0.33μF, 100 V, 47         C21, C29         2         0.01μF, 500 V, 47         C22, C24         2         2.2μF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.33 μF, 100 V, 47         C22, C24         2         2.2μF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.01μF, 50V, 47         C26         1         0.47uF         GRM3B871H103KA01D         MuRata         CAP, CERM, 0.047uF, 100V, 47         C44, C46         2         1 uF         GRM18BR72A104KA35D         MuRata         CAP, CERM, 0.047uF, 100V, 47         C44, C46         2         1 uF         GRM18BR72A104KA35D         MuRata         CAP, CERM, 0.1μF, 100 V, 47         CAP, CERM, 0.1μF, 100 V		SMT Radial H13
C14, C15, C16,         8         2.2μF         CL31B225KCHSNNE         Samsung Electro-Mechanics A CAP CER 2.2UF 100V 10% (20, C33, C34, C35)           C50, C51         C18, C31         2         0.01uF         GRM188R71E103KA01D         MuRata         CAP, CERM, 0.01 μF, 25 V, -/-           C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, +/-           C20, C27, C28,         4         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 47 pF, 50 V, +/-           C47         C47         TDK         CAP, CERM, 1 μF, 25 V, +/-         CAP, CERM, 0.33 μF, 100 V           C21, C29         2         0.33uF         GRM21AR72A334KAC5L         MuRata         CAP, CERM, 0.33 μF, 100 V, +/-           C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.31 μF, 100 V, +/-           C33, C25         2         0.01uF         GRM18BR72A103KA01L         MuRata         CAP, CERM, 0.1 μF, 100 V, +/-           C44, C46         2         1uF         GRM18BR72A104KA35D         MuRata         CAP, CERM, 0.1 μF, 100 V, +/-           C49         1         0.1uF         GRM18BR72A104KA35D         MuRata         CAP, CERM, 0.1 μF, 100 V, +/-           C49         1         0.1uF         GRM18BR72		1206
C33, C34, C35,         C50, C51           C18, C31         2         0.01uF         GRM188R71E103KA01D         MuRata         CAP, CERM, 0.01 μF, 25 V, -1018, C31           C19, C30         2         47pF         C0603C470J50ACTU         Kemet         CAP, CERM, 47 pF, 50 V, +1018, C31, C31, C31, C31, C31, C31, C31, C31	) V, +/- 5%, C0G/NP0, 0805	0805
(250, C51	% X7R 1206	1206 (3216 Metric)
C18, C31         2         0.01uF         GRM188R71E103KA01D         MuRata         CAP, CERM, 0.01 µF, 25 V, C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, 4/C20, C27, C28, C27, C28, C27, C28, C27, C28, C27         4         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 1 µF, 25 V, 4/C25 V, 4/C27, C29         2         0.33uF         GRM21AR72A334KAC5L         MuRata         CAP, CERM, 0.33 µF, 100 V         C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.21 µF, 100 V, 4/C23, C25         2         0.01uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.47uF, 100V, 4/C23, C25         2         0.01uF         GRM18R72A7474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, 4/C44, C46         2         1uF         GRM13CR72A105KA01L         MuRata         CAP, CERM, 0.47uF, 100V, 4/C44         CAB         1         0.1uF         GRM18R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, 4/C44         CAP         CERM, 0.1 µF, 100 V, 4/C44         CAP         CERM, 0.1 µF, 100 V, 4/C44         CAP, CERM, 0.1		
C19, C30         2         47pF         C0603C470J5GACTU         Kemet         CAP, CERM, 47 pF, 50 V, +/           C20, C27, C28, C47         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 1pF, 25 V, +/           C47         C21, C29         2         0.33uF         GRM21AR72A334KAC5L         MuRata         CAP, CERM, 0.33 µF, 100 V,           C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 2.2 µF, 10 V, +           C26         1         0.47uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.01uF, 50V, +           C26         1         0.47uF         GRM21BR72A474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, -           C48         1         0.1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 0.47uF, 100V, -           C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 µF, 100 V, -           D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 60 V, 1 A, S           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor		
C20, C27, C28, C47         4         1uF         C1608X7R1E105K080AB         TDK         CAP, CERM, 1 μF, 25 V, +/-C47           C21, C29         2         0.33uF         GRM21AR72A334KAC5L         MuRata         CAP, CERM, 0.33 μF, 100 V           C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 2.2 μF, 10 V, +           C23, C25         2         0.01uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.01uF, 50V, +           C46         1         0.47uF         GRM21BR72A474K73L         MuRata         CAP, CERM, 0.01uF, 100V, -           C44, C46         2         1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP,		0603
C47         C21, C29         2         0.33uF         GRM21AR72A334KAC5L         MuRata         CAP, CERM, 0.33 μF, 100 V           C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 0.31 μF, 100 V           C23, C25         2         0.01uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.01uF, 50V, +           C66         1         0.47uF         GRM21BR72A474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, +           C44         C46         2         1uF         GRM31BR72A105KA01L         MuRata         CAP, CERM, 0.1 μF, 100V, +           C48         1         0.1uF         GRM38R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, +           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, -           C52, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1A, S           D6         1         100V         10x148W-7F <t< td=""><td>, +/- 5%, C0G/NP0, 0603</td><td>0603</td></t<>	, +/- 5%, C0G/NP0, 0603	0603
C21, C29	+/- 10%, X7R, 0603	0603
C22, C24         2         2.2uF         C0603C225M8PACTU         Kemet         CAP, CERM, 2.2 μF, 10 V, +           C23, C25         2         0.01uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.01uF, 50V, +           C26         1         0.47uF         GRM21BR72A474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, -           C44, C46         2         1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 µF, 100 V, -           D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 70V, 1A, SN           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Schottky, 60 V, 1 A, S           D7, D10         2         60V         SS1613G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode,		
C23, C25         2         0.01uF         GRM188R71H103KA01D         MuRata         CAP, CERM, 0.01uF, 50V, +           C26         1         0.47uF         GRM21BR72A474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, +           C44, C46         2         1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 0.1 μF, 100 V, +           C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 μF, 100 V, -           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, -           D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 70V, 1A, SN           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Schottky, 60 V, 1 A, S           D7, D10         2         60V         SS16T3G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           R20, R25, R41, R48         14         NY PMS 440 0025 PH         B&F Fastener Supply         M		0805
C26         1         0.47uF         GRM21BR72A474KA73L         MuRata         CAP, CERM, 0.47uF, 100V, 0.47uF, 100V, 0.47uF, 100V, 0.47uF, 100V, 0.48         2         1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 1 μF, 100 V, 0.4V         CAP, CERM, 0.1 μF, 100 V, 0.0V         AMA         CAP, CERM, 0.1 μF, 100 V, 0.0V         AMA         CAP, CERM, 0.1 μF, 100 V, 0.0V         AMA         AMA         CAP, CERM, 0.1 μF, 100 V, 0.15         AMA         AMA         CAP, CERM, 0.1 μF, 100 V, 0.15         AMA	/, +/- 20%, X5R, 0603	0603
C44, C46         2         1uF         GRM31CR72A105KA01L         MuRata         CAP, CERM, 1 μF, 100 V, +/           C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 μF, 100 V, -/           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, -/           D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 70V, 1A, SN           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Schottky, 60 V, 1 A, S           D7, D10         2         60V         SS1673G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMB.60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik<		0603
C48         1         0.1uF         GRM188R72A104KA35D         MuRata         CAP, CERM, 0.1 µF, 100 V,           C49         1         0.1uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 µF, 100 V,           D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 70V, 1A, SN           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Schottky, 60 V, 1 A, S           D7, D10         2         60V         SS1673G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10,         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           R20, R25, R41,         R48         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5°L #4-40 N           L1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD	V, +/-10%, X7R, 0805	0805
C49         1         0.1 uF         GRM188R72A104KA35J         MuRata         CAP, CERM, 0.1 μF, 100 V, 100	, +/- 10%, X7R, 1206	1206
D1, D4         2         70V         B170-13-F         Diodes Inc.         Diode, Schottky, 70V, 1A, SN           D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Ultrafast, 100 V, 0.15           D7, D10         2         60V         SS16T3G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, Chottky, 60 V, 1 A, S           D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           L1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit <td></td> <td>0603</td>		0603
D2, D3, D5, D9         4         60V         PMEG6010CEJ,115         NXP Semiconductor         Diode, Schottky, 60 V, 1 A, S           D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Ultrafast, 100 V, 0.15           D7, D10         2         60V         SS16T3G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10,         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           R20, R25, R41,         R48         H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Conohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         D01608C-224MLB	V, +/- 10%, X7R, 0603	0603
D6         1         100V         1N4148W-7-F         Diodes Inc.         Diode, Ultrafast, 100 V, 0.15           D7, D10         2         60V         SS16T3G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         40V         BUK9Y21-40E,115         NXP Semiconductor         M		SMA
D7, D10         2         60V         SS16T3G         ON Semiconductor         Diode, Schottky, 60 V, 1 A, S           D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Corolom, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET	A, SOD-323F	SOD-323F
D8         1         60V         SMBJ60A-13-F         Diodes Inc.         Diode, TVS, Uni, 60 V, 600 V           D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, I           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES,		SOD-123
D11, R3, R10, R20, R25, R41, R48         7         0         CRCW06030000Z0EA         Vishay-Dale         RES, 0, 5%, 0.1 W, 0603           H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         8         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, E           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603	A, SMA	SMA
R20, R25, R41, R48       NY PMS 440 0025 PH       B&F Fastener Supply       Machine Screw, Round, #4-4         H1, H2, H3, H4       4       NY PMS 440 0025 PH       B&F Fastener Supply       Machine Screw, Round, #4-4         H5, H6, H7, H8       4       1902C       Keystone       Standoff, Hex, 0.5"L #4-40 N         J1, J2, J3       3       2x1       1715721       Phoenix Contact       Conn Term Block, 2POS, 5.0         L1       1       1.9uH       7443556190       Wurth Elektronik       Inductor, Shielded Drum Cordon, SMD         L2, L3       2       1.5uH       XAL1010-152MEB       Coilcraft       Inductor, Shielded, Composit         L4       1       220uH       DO1608C-224MLB       Coilcraft       Inductor, Drum Core, Ferrite,         Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9       40V       BUK9Y21-40E,115       NXP Semiconductor       MOSFET, N-CH, 40 V, 33 A,         Q5       1       60V       IPB90N06S4L-04       Infineon       MOSFET, N-CH, 60V, 90A, I         R1, R26       2       100k       CRCW0805100KFKEA       Vishay-Dale       RES, 100, 5%, 0.1 W, 0603         R2       1       100       CRCW0603100RJNEA       Vishay-Dale       RES, 100, 5%, 0.1 W, 0603	00 W, SMB	SMB
H1, H2, H3, H4         4         NY PMS 440 0025 PH         B&F Fastener Supply         Machine Screw, Round, #4-4           H5, H6, H7, H8         4         1902C         Keystone         Standoff, Hex, 0.5"L #4-40 N           J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         8         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, E           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603           R2         1         100         CRCW0603100RJNEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603		0603
H5, H6, H7, H8       4       1902C       Keystone       Standoff, Hex, 0.5"L #4-40 N         J1, J2, J3       3       2x1       1715721       Phoenix Contact       Conn Term Block, 2POS, 5.0         L1       1       1.9uH       7443556190       Wurth Elektronik       Inductor, Shielded Drum Conohm, SMD         L2, L3       2       1.5uH       XAL1010-152MEB       Coilcraft       Inductor, Shielded, Composit         L4       1       220uH       DO1608C-224MLB       Coilcraft       Inductor, Drum Core, Ferrite,         Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9       8       40V       BUK9Y21-40E,115       NXP Semiconductor       MOSFET, N-CH, 40 V, 33 A,         Q5       1       60V       IPB90N06S4L-04       Infineon       MOSFET, N-CH, 60V, 90A, E         R1, R26       2       100k       CRCW0805100KFKEA       Vishay-Dale       RES, 100 k, 1%, 0.125 W, 08         R2       1       100       CRCW0603100RJNEA       Vishay-Dale       RES, 100, 5%, 0.1 W, 0603	4-40 x 1/4, Nylon, Philips panhead	Screw
J1, J2, J3         3         2x1         1715721         Phoenix Contact         Conn Term Block, 2POS, 5.0           L1         1         1.9uH         7443556190         Wurth Elektronik         Inductor, Shielded Drum Cordohm, SMD           L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         8         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, E           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES, 100 k, 1%, 0.125 W, 08           R2         1         100         CRCW0603100RJNEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603		Standoff
Coilcraft   Inductor, Shielded, Composit	5.08mm, TH	2POS Terminal Block
L2, L3         2         1.5uH         XAL1010-152MEB         Coilcraft         Inductor, Shielded, Composit           L4         1         220uH         DO1608C-224MLB         Coilcraft         Inductor, Drum Core, Ferrite,           Q1, Q2, Q3, Q4, Q6, Q7, Q8, Q9         8         40V         BUK9Y21-40E,115         NXP Semiconductor         MOSFET, N-CH, 40 V, 33 A,           Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, I           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES, 100 k, 1%, 0.125 W, 08           R2         1         100         CRCW0603100RJNEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603	Core, WE-Superflux200, 1.9 µH, 32.5 A, 0.0012	18.3x8.9x18.2mm
Q1, Q2, Q3, Q4,       8       40V       BUK9Y21-40E,115       NXP Semiconductor       MOSFET, N-CH, 40 V, 33 A,         Q6, Q7, Q8, Q9       1       60V       IPB90N06S4L-04       Infineon       MOSFET, N-CH, 60V, 90A, I         R1, R26       2       100k       CRCW0805100KFKEA       Vishay-Dale       RES, 100 k, 1%, 0.125 W, 08         R2       1       100       CRCW0603100RJNEA       Vishay-Dale       RES, 100, 5%, 0.1 W, 0603	osite, 1.5 µH, 36.6 A, 0.0016 ohm, SMD	Inductor, 11.3x10x10mm
Q1, Q2, Q3, Q4,       8       40V       BUK9Y21-40E,115       NXP Semiconductor       MOSFET, N-CH, 40 V, 33 A,         Q6, Q7, Q8, Q9       1       60V       IPB90N06S4L-04       Infineon       MOSFET, N-CH, 60V, 90A, I         R1, R26       2       100k       CRCW0805100KFKEA       Vishay-Dale       RES, 100 k, 1%, 0.125 W, 08         R2       1       100       CRCW0603100RJNEA       Vishay-Dale       RES, 100, 5%, 0.1 W, 0603	rite, 220 µH, 0.22 A, 3.11 ohm, SMD	DO1608C
Q5         1         60V         IPB90N06S4L-04         Infineon         MOSFET, N-CH, 60V, 90A, I           R1, R26         2         100k         CRCW0805100KFKEA         Vishay-Dale         RES, 100 k, 1%, 0.125 W, 08           R2         1         100         CRCW0603100RJNEA         Vishay-Dale         RES, 100, 5%, 0.1 W, 0603		SOT669
R1, R26 2 100k CRCW0805100KFKEA Vishay-Dale RES, 100 k, 1%, 0.125 W, 08 R2 1 100 CRCW0603100RJNEA Vishay-Dale RES, 100, 5%, 0.1 W, 0603	A, D2PAK	D2PAK
R2 1 100 CRCW0603100RJNEA Vishay-Dale RES, 100, 5%, 0.1 W, 0603		0805
R4a, R4b, R24a, 4 0.008 PMR100HZPFU8L00 Rohm RES, 0.008, 1%, 2 W, 2512		0603
R24b		2512

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R5a, R5b, R5c	3	1.0	CRCW12061R00JNEA	Vishay-Dale	RES, 1.0 ohm, 5%, 0.25W, 1206	1206
R6, R23	2	49.9	CRCW060349R9FKEA	Vishay-Dale	RES, 49.9, 1%, 0.1 W, 0603	0603
R7, R21	2	10k	CRCW060310K0JNEA	Vishay-Dale	RES, 10 k, 5%, 0.1 W, 0603	0603
R8, R22	2	8.2	CRCW20108R20JNEF	Vishay-Dale	RES, 8.2, 5%, 0.75 W, 2010	2010
R9, R12, R13,	6	4.99	CRCW06034R99FKEA	Vishay-Dale	RES, 4.99, 1%, 0.1 W, 0603	0603
R16, R17, R19				,		
R11, R18, R56	3	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0 k, 1%, 0.1 W, 0603	0603
R14	1	0	RC0603JR-070RL	Yageo America	RES, 0 ohm, 5%, 0.1W, 0603	0603
R15	1	2.2	CRCW06032R20JNEA	Vishay-Dale	RES, 2.2, 5%, 0.1 W, 0603	0603
R33, R34	2	267	CRCW0603267RFKEA	Vishay-Dale	RES, 267, 1%, 0.1 W, 0603	0603
R35, R38	2	38.3k	CRCW060338K3FKEA	Vishay-Dale	RES, 38.3 k, 1%, 0.1 W, 0603	0603
R39, R40	2	17.8k	CRCW060317K8FKEA	Vishay-Dale	RES, 17.8 k, 1%, 0.1 W, 0603	0603
R58, R59	2	100k	CRCW0603100KJNEA	Vishay-Dale	RES, 100 k, 5%, 0.1 W, 0603	0603
TP1, TP2, TP9,	5	Red	5010	Keystone	Test Point, Multipurpose, Red, TH	Red Multipurpose
TP12, TP15				•		Testpoint
TP3, TP6, TP7,	15	White	5012	Keystone	Test Point, Multipurpose, White, TH	White Multipurpose
TP8, TP13, TP14,				Ť		Testpoint
TP18, TP19,						·
TP20, TP21,						
TP22, TP23,						
TP24, TP25, TP28						
, ,						
TP4, TP5, TP10,	8	Black	5011	Keystone	Test Point, Multipurpose, Black, TH	Black Multipurpose
TP11, TP16,				1		Testpoint
TP17, TP26, TP27						'
U1	1		LM5140QRWGTQ1	Texas Instruments	Wide Input Range Dual Synchronous Buck Controller, RHA0040C	RHA0040C
U2	1		LM5050Q1MK-1/NOPB	Texas Instruments	LM5050-1 High Side OR-ing FET Controller, DDC0006A	DDC0006A
C52, C53	0	0.1uF	GRM188R72A104KA35D	MuRata	CAP, CERM, 0.1uF, 100V, +/-10%, X7R, 0603	0603
C54, C55	0	0.1uF	C0603C104K4RACTU	Kemet	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0603	0603
D12, D13	0	60V	PMEG6010CEJ,115	NXP Semiconductor	Diode, Schottky, 60 V, 1 A, SOD-323F	SOD-323F
FID1, FID2, FID3,	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	Fiducial
FID4, FID5, FID6						
R27, R28	0	1.40k	CRCW06031K40FKEA	Vishay-Dale	RES, 1.40k ohm, 1%, 0.1W, 0603	0603
R29, R30, R31,	0	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100, 1%, 0.1 W, 0603	0603
R32						
R36, R37, R42,	0	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, 0603	0603
R43, R51						
R44	0	1.00k	CRCW06031K00FKEA	Vishay-Dale	RES, 1.00k ohm, 1%, 0.1W, 0603	0603
R45, R46, R50,	0	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0k ohm, 1%, 0.1W, 0603	0603
R52						
R47	0	22.1k	CRCW060322K1FKEA	Vishay-Dale	RES, 22.1k ohm, 1%, 0.1W, 0603	0603
R49, R54	0	100k	CRCW0603100KJNEA	Vishay-Dale	RES, 100 k, 5%, 0.1 W, 0603	0603
R53, R55	0	5.11k	CRCW06035K11FKEA	Vishay-Dale	RES, 5.11k ohm, 1%, 0.1W, 0603	0603
R57	0	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0 ohm, 5%, 0.1W, 0603	0603
T1	0	470uH	P0502NLT	Pulse Engineering	Coupled inductor, 470 µH, 14 A, 0.008 ohm, +/- 35%, SMD	30.99x25.4mm
U3	0		LMV431AIMF/NOPB	Texas Instruments	Low-Voltage (1.24V) Adjustable Precision Shunt Regulator, 3-pin SOT-23	MF03A
U4, U5	0		LMC7101QM5/NOPB	Texas Instruments	Automotive CMOS Low Power with Rail-to-Rail Input and Output	MF05A_L

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