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## TIDA-01439 REV E2 Bill of Materials



1 PCB1 2 C2, C3, C8, C9, C20, C2 2 C24, C2 2 C40, C8, C9, C20, C20, C24, C2 2 C44, C49, C5 3 C4, C7 4 C13 5 C15, C1 6 C17, C1 7 C19 8 C23 8 C23 11 C28, C3 12 C29, C3 13 C30 14 C31 15 C30 14 C31 15 C33 16 C36 17 C38, C4 17 C38, C4 18 C39 19 C41, C4 20 C43, C6 20 C43, C6 21 C44 22 C53 23 D1, D8, C7 24 D2, D9 25 D3, D1 26 D5 27 D6, D7 28 D11 29 F1, F2 30 F1, F2 31 J3 31 J4 32 J3, J6 33 J4 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R1, R1 42 R8 44 R10 45 R13, R8 45 R15 47 R24, R7 48 R15 48 R15 51 R20, R12 52 R27, R2 54 R31 55 R12 77 R20, R14 78 78 78 78 78 78 78 78 78 78 78 78 78	C3, C5, C8, C8, C8, C9, C14, C21, C22, C25, C34, C47, C48, C50, C52, C7  C7  C16  C51  C51  C51  C42  C44  C45  C45  C45  C46  C47  C46  C51  C51  C51  C51  C52  C51  C51  C52  C55  C55	Quantity 1 19 2 2 1 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 2 2 1 1 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 2 2 1	Value  0.1uF  10uF  1uF  22pF  4.7uF  1uF  22pF  4.7uF  1uF  22pF  0.01uF  0.047uF  10uF  10uF  10uF  0.047uF  10uF  10uF  10uF  22uF  2700pF  0.02vB  67een  Red  40v  7v  5v  2.45 GHz	PartNumber TIDA-01439 GRM156R70J104KA01D GRM156R70J104KA01D GRM156R70J104KA01D GRM156R70J106KE76L GRM188R70J106KA01D G0036A220JAT2A Used in BOM report Used in BOM report CC0805ZRY5V68B475 GRM168R60J106ME47D GRM31CR27A106KA01D GRM31CR27A107A106KA01D GRM31CR27A106KA01D GRM31CR27A1	Manufacturer Any MuRata MuRata MuRata MuRata AVX Used in BOM report  Vageo America MuPata MuPata MuRata TDK MuRata Kemet MuRata Kemet MuRata	Description  Printed Circuit Board  CAP, CERM, 0.1 µF, 6.3 V, +/- 10%, X7R, 0402  CAP, CERM, 10 µF, 6.3 V, +/- 10%, X7R, 0805  CAP, CERM, 1 µF, 6.3 V, +/- 10%, X7R, 0805  CAP, CERM, 22 µF, 50 V, +/- 5%, COGNP0, 0603  CAP, CERM, 22 µF, 50 V, +/- 5%, COGNP0, 0603  CAP, CERM, 47 µF, 10 V, +80-20%, X5R, 0603  CAP, CERM, 1 µF, 10 V, +/- 10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +/- 10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +/- 10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +/- 10%, X7R, 1206  CAP, CERM, 0.01 µF, 15 V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 µF, 15 V, +/- 10%, X7R, 0402  CAP, CERM, 0.04 µF, 16 V, +/- 10%, X7R, 1206  CAP, CERM, 0.04 µF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 0.04 µF, 15 V, +/- 10%, X7R, 1206  CAP, CERM, 0.05 µF, 10V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 µF, 10V, +/- 10%, X7R, 0402  CAP, CERM, 0.018 µF, 100V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0603  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 µF, 50V, +/- 10%, X7R, 0402	0805 0805 0803 0808 0808 0809 0809 0809 0809 0809
2 C2, C3, C3, C20, C20, C24, C2 C24, C24,	C3, C5, C8, C8, C8, C9, C14, C21, C22, C25, C34, C47, C48, C50, C52, C7  C7  C16  C51  C51  C51  C42  C44  C45  C45  C45  C46  C47  C46  C51  C51  C51  C51  C52  C51  C51  C52  C55  C55	2 1 1 2 2 2 1 1 1 1 1 1 2 2 4 4 1 1 1 1	10uF 1uF 22pF 4.7uF 10uF 1uF 47uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM15SR70J104KA01D  GRM21BR70J106KE78L  GRM188R70J105KA01D  000354220J4T2A  Used in BOM report  CC0805ZRY5V6BB475  GRM188R80J106ME47D  GRM31CR72A105KA01D  GRM32ER71A476KE1SL  C1005X751A105K050BC  GRM15SR71A75KA01D  GRM35CR72A73KA01D  GRM35CR72A73KA01D  GRM35CR71A75KA01D  GRM35CR71A75KA01D  GRM35SR72A72KA01D  GRM35SR72A75KA01D  GRM15SR72A75KA01D  GRM15SR72A75KA01D  GRM15SR72A75KA01D  GRM15CR72E75KA01D  GRM15CR	MuRata MuRata MuRata AVX Used in BOM report Vageo America MuRata MuRata MuRata TDK MuRata Kemet MuRata Kemet Kemet Kingbright	CAP, CERM, 10 µF, 6.3 V, +/- 10%, X7R, 0402  CAP, CERM, 10 µF, 6.3 V, +/- 10%, X7R, 0805  CAP, CERM, 1 µF, 6.3 V, +/- 10%, X7R, 0805  CAP, CERM, 22 PF, 50 V, +/- 5%, COG/NP0, 0603  CAP, CERM, 22 PF, 50 V, +/- 5%, COG/NP0, 0603  CAP, CERM, 10 µF, 63 V, +/- 20%, X5R, 0603  CAP, CERM, 10 µF, 63 V, +/- 20%, X5R, 0603  CAP, CERM, 1 µF, 100 V, +- 10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +- 10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +- 10%, X7R, 1206  CAP, CERM, 07 µF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 00 µF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1210  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1206  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1206  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1206  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1206  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 №F, 63 V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 №F, 63 V, +/- 10%, X7R, 0402  CAP, CERM, 0.02 №F, 100V, +/-10%, X7R, 0402  CAP, CERM, 0.07 №F, 100V, +/-10%, X7R, 0402	0805 0803 0803 0803 Used in PnP output and some BOM reports 0805 0805 1206 1210 0402 0402 0402 0402 0402 0402 0402
3 C4, C7 4 C13 5 C15, C1 6 C17, C1 7 C19 8 C23 9 C28 10 C27 11 C28, C3 11 C28, C3 11 C28, C3 11 C39, C37 13 C30 14 C31 15 C33 14 C31 15 C33 16 C36 17 C38, C4 18 C39 19 C41, C4 22 C53 23 D1, D8, 24 22 C53 23 D1, D8, 25 27 D6, D7 28 D11 29 F1, F2 30 FL1 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 40 R1, R2 47 R1, R4, R5, R3 48 R15 49 R17 40 R1, R2 41 R3, R3 44 R15, R3 45 R11 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20, R27 83 51 R20, R31 84 87 87 88 81 81 81 82 88 84 87 88 87 88 88 88 88 88 88 88 88 88 88	C7 , C16 , C16 , C18 , C51 , C51 , C32, C35, , C42 , C42 , C45 , C45 , C45 , C75 , C	1 1 1 1 1 2 2 1 1 1 1 2 2 2 1 1 1 1 1 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 1 2 2 2 1	1uF 22pF 4.7uF 10uF 1uF 1uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2790pF 0.02uF 3700pF 0.02vF 40V 30V 7V 5V	GRM168R70J105KA01D  GRM168R70J105KA01D  GRM36R70SH2F8  CC0806ZRY5V6BB475  GRM168R60J105ME47D  GRM31CR72AJ05KA01  GRM31CR72AJ05KA01D  GRM31CR7AAJ05KA01D  GRM31CR7AAJ05	MuRata AVX Used in BOM report Yageo America MuRata MuRata TDK MuRata TDK MuRata TDK MuRata TDK MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata Kemet MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata	CAP, CERM, 1 µF, 63, 3V, +/- 10%, X/R, 0603 CAP, CERM, 22 P, 50 V, +/- 5%, COG/NP0, 0609 CAP, CERM, xxxF, xxV, [TempCo], xx%, [PackageReference]  CAP, CERM, 47 µF, 10 V, +80/-20%, Y5V, 0805 CAP, CERM, 10 µF, 63 V, +/- 20%, SSR, 0603 CAP, CERM, 1 µF, 100 V, +/- 10%, X/R, 1206 CAP, CERM, 1 µF, 100 V, +/- 10%, X/R, 1210 CAP, CERM, 1 µF, 10 V, +/- 10%, X/R, 1240 CAP, CERM, 1 µF, 10 V, +/- 10%, X/R, 0402 CAP, CERM, 22 PF, 50 V, +/- 5%, COG/NP0, 0402 CAP, CERM, 0.047 µF, 16 V, +/- 10%, X/R, 0402 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1210 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 100pF, 100V, +/- 10%, X/R, 0402 CAP, CERM, 0.018µF, 100V, +/-10%, X/R, 0402 CAP, CERM, 0.018µF, 100V, +/-10%, X/R, 0402 CAP, CERM, 0.02µF, 63V, +/-10%, X/R, 0402 CAP, CERM, 0.07µF, 100V, +/-10%, X/R, 0603	0603 0603 Used in PnP output and some BOM reports 0605 0605 1206 1210 0402 0402 1210 1210 0402 0402 0402
4 C13 5 C15, C1 6 C17, C1 6 C17, C1 8 C28, C3 10 C27 11 C28, C29, C3 12 C29, C3 13 C30 14 C31 15 C33 16 C36 17 C38, C4 17 C38, C4 18 C39 19 C41, C4 20 C43, C4 21 C44 22 C53 23 D1, D8, 24 24 D2, D9 25 D3, D1 26 D5 27 D6, D7 28 D11 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R5 42 R8 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1 48, R5, R3 47 R14, R1 48 R15 51 R20 47 R14, R1 51 R20 53 R28 54 R31 55 R34, R3 55 R34, R3 55 R34, R3 55 R34, R3 56 R341, R4 57 R43, R4 57 R4	, C16 , C18 , C51 , C51 , C32, C35, , C40 , C42 , C45 , C45 D8, D10, D13 D9	1 1 1 1 1 2 2 1 1 1 1 2 2 2 1 1 1 1 1 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 2 2 2 1 1 1 1 1 1 1 1 2 2 2 1	1uF 22pF 4.7uF 10uF 1uF 1uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2790pF 0.02uF 3700pF 0.02vF 40V 30V 7V 5V	GRM168R70J105KA01D  GRM168R70J105KA01D  GRM36R70SH2F8  CC0806ZRY5V6BB475  GRM168R60J105ME47D  GRM31CR72AJ05KA01  GRM31CR72AJ05KA01D  GRM31CR7AAJ05KA01D  GRM31CR7AAJ05	MuRata AVX Used in BOM report Yageo America MuRata MuRata TDK MuRata TDK MuRata TDK MuRata TDK MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata Kemet MuRata MuRata MuRata MuRata MuRata MuRata MuRata MuRata	CAP, CERM, 1 µF, 63, 3V, +/- 10%, X/R, 0603 CAP, CERM, 22 P, 50 V, +/- 5%, COG/NP0, 0609 CAP, CERM, xxxF, xxV, [TempCo], xx%, [PackageReference]  CAP, CERM, 47 µF, 10 V, +80/-20%, Y5V, 0805 CAP, CERM, 10 µF, 63 V, +/- 20%, SSR, 0603 CAP, CERM, 1 µF, 100 V, +/- 10%, X/R, 1206 CAP, CERM, 1 µF, 100 V, +/- 10%, X/R, 1210 CAP, CERM, 1 µF, 10 V, +/- 10%, X/R, 1240 CAP, CERM, 1 µF, 10 V, +/- 10%, X/R, 0402 CAP, CERM, 22 PF, 50 V, +/- 5%, COG/NP0, 0402 CAP, CERM, 0.047 µF, 16 V, +/- 10%, X/R, 0402 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1210 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1206 CAP, CERM, 100pF, 100V, +/- 10%, X/R, 0402 CAP, CERM, 0.018µF, 100V, +/-10%, X/R, 0402 CAP, CERM, 0.018µF, 100V, +/-10%, X/R, 0402 CAP, CERM, 0.02µF, 63V, +/-10%, X/R, 0402 CAP, CERM, 0.07µF, 100V, +/-10%, X/R, 0603	0603 0603 Used in PnP output and some BOM reports 0605 0605 1206 1210 0402 0402 1210 1210 0402 0402 0402
5 C15, C1 6 C17, C1 6 C17, C1 6 C17, C1 7 C19 8 C23 9 C26 10 C27 11 C28, C5 11 C28, C5 12 C29, C37 13 C30 14 C31 15 C33 16 C33 16 C33 17 C38, C4 18 C39 19 C41, C4 22 C33 23 D1, D8, C2 25 D3, D4 25 D3, D4 25 D3, D4 26 D5 27 D6, D7 28 D11 29 F1, F2 30 FL1 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 38 L5 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R3 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1, R24, R2 48 R15 49 R17 50 R18 51 R20 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1, R24, R2 48 R15 49 R17 50 R18 51 R20 75 R43, R4 75 R43, R45 75 R45	, C16 , C18 , C51 , C51 , C32, C35, , C42 , C42 , C45 , C45 , C45 , C51 , C52 , C55 , C51 , C52 , C55	2 2 1 1 1 1 1 2 2 1 1 2 2 2 2 1 1 1 1 1	22pF  4.7uF 10uF 10uF 11uF 47uF 10uF 22pF  0.01uF 0.047uF 10uF 2.2uF 1800pF 0.078uF 0.022uF 0.027uF 0.027uF 0.07vF	JOSOSAS/220JATZA Used in BOM report  CC006.ZRYSV8BB475 CC006.ZRYSV8BB475 GRM158R60J106ME47D GRM31CR72A105KA01L GRM32ER71A476KE15L C1005X751A106K050BC GRM1558C1H220JA01D C1005X751A106K050BC GRM155R71C473KA01D GRM35ER71A706K412L UMX316B722SUL-1 GRM155R72A18ZKA01D C00903C183R1RACTIJ GRM155R72A18ZKA01D C0903C183R1RACTIJ GRM155R72A18ZKA01D C0903C183R1RACTIJ GRM155R72A18ZKA01D C0903C183R1RACTIJ GRM15SR72A18ZKA01D C0903C183R1RACTIJ GRM15SR72A18ZKA01D C0903C183R1RACTIJ GRM15SR72A17ZKA01D GRM15CR72A17ZKA01D GRM	AVX Used in BOM report  Yageo America Murata Murata Murata TDK MuRata TDK MuRata Kemet MuRata Kemet MuRata Kemptipht Kingbright	CAP, CERM, 22 pF, 50 V, +/- 5%, COG/NPO, 0603  CAP, CERM, xxxF, xxV, [TempCo], xx%, [PackageReference]  CAP, CERM, 4.7 pF, 10 V, +80/-20%, Y5V, 0805  CAP, CERM, 10 pF, 6.3 V, +/- 20%, SSR, 0603  CAP, CERM, 1 pF, 100, V+- 10%, X7R, 1206  CAP, CERM, 1 pF, 100, V+- 10%, X7R, 1206  CAP, CERM, 1 pF, 10 V, +/- 10%, X7R, 1206  CAP, CERM, 1 pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 pF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 0.01 pF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 0.047 pF, 18 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 80 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 80 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 10 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 10 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 10 V, +/- 10%, X7R, 1206  CAP, CERM, 10 pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 10 DF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.21pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.21pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402  CAP, CERM, 0.071pF, 10 V, +/- 10%, X7R, 0402	0603 Used in PnP output and some BOM reports (100 to 100 t
7 C19 8 C23 9 C26 10 C27 11 C28, C5 12 C29, C37 13 C30 14 C31 15 C33 14 C31 15 C33 16 C36 17 C38, C4 20 C43, C4 21 C44 22 C53 23 D1, D8, C4 21 C44 22 C53 23 D1, D8, C4 21 C44 23 C5 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 31 J2 32 J3, J6 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R3 42 R8 44 R10 45 R11 47 R14, R1, R2 48 R15 49 R17 50 R18 51 R20 42 R8 44 R10 45 R11 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 42 R8 54 R31 55 R34, R2 57 R43, R4 57	, C40 , C42 , C45 , C45 , C55 , C47 , C47 , C47 , C48 , C48 , C49 , C49	1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 1 1 1 1	10uF 1uF 47uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 0.22uF 0.027uF 0.1uF Green Red 40v 30v 7V 5v	CC0805ZRYSV6BB475 GRM188R60J108ME47D GRM31CR72A105KA0TL GRM31CR72A105KA0TL GRM31CR72A105KA0TL GRM31CR72A105KA0TL GRM31CR72A105KA0TL GRM31CR71CA105KA0TL GRM15SR71CA73KA0TD GRM15SR71CA73KA0TD GRM15SR71CA73KA0TD GRM15SR71CA73KA0TD GRM15SR71CA73KA0TD GRM15SR72A18ZKA0TD GRM15SR72A18ZKA0TD GRM15SR72A18ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72A7ZKA0TD GRM15SR72ATGRATT	Yageo America MuRata MuRata MuRata MuRata TDK MuRata MuRata TDK MuRata Kemet MuRata Kemet Kemet Kemit	CAP, CERM, 47 µF, 10 V, +80/-20%, Y5V, 0805  CAP, CERM, 10 µF, 6.3 V, +/-20%, SSR, 0803  CAP, CERM, 1 µF, 100 V, +/-10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +/-10%, X7R, 1206  CAP, CERM, 1 µF, 100 V, +/-10%, X7R, 1200  CAP, CERM, 1 µF, 10 V, +/-10%, X7S, 0402  CAP, CERM, 22 µF, 50 V, +/-5%, C0GNP0, 0402  CAP, CERM, 0.047 µF, 16 V, +/-10%, X7R, 0402  CAP, CERM, 0.047 µF, 16 V, +/-10%, X7R, 1210  CAP, CERM, 0.047 µF, 18 V, +/-10%, X7R, 1206  CAP, CERM, 10 µF, 63 V, +/-10%, X7R, 1206  CAP, CERM, 0.018 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.018 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.02 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.02 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.02 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.20 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.02 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.07 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.07 µF, 100 V, +/-10%, X7R, 0402  CAP, CERM, 0.07 µF, 100 V, +/-10%, X7R, 0402	and some BOM reports 0805 0805 0803 1206 12206 12210 0402 0402 0402 0402 0402 0402 040
8 C23 9 C26 10 C27 11 C28, C5 11 C28, C5 12 C29, C3 13 C30 14 C31 15 C33 16 C36 17 C38, C4 18 C39 19 C41, C4 20 C43, C4 21 C44 22 C53 31 J4 23 D1, D8, 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 31 J2 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R5 81 R5 42 R8 43 R9 44 R10 45 R13, R1 46 R13, R1 47 R14, R1 48 R15 47 R14, R1 48 R15 51 R20 47 R14, R1 51 R20 48 R17 52 R31 53 R28 54 R32 55 R34, R3 55 R34, R3 55 R34, R3 56 R341, R4 57 R43, R4 57 R4 58 R4 58 R4 57 R4 58 R4	, C51 , C32, C35, , C40 , C42 , C45 D8, D10, D13 D9 D4	1 1 1 2 4 1 1 1 1 1 2 2 2 2 1 1 4 4 2 2 1 1 1 2 1 2	10uF 1uF 47uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 0.22uF 0.027uF 0.1uF Green Red 40v 30v 7V 5v	GRM168R6QJ106ME47D GRM31CR72A105KA01L GRM32ER71A478KE15L C1005X751A105K050BC GRM1555C1H220JA01D C1005X7F1C103K050BA GRM155SF2A7SKA01D GRM35ER71J106K412L UMK316B72SSKLT GRM155R72A182KA01D C0603C18SK1FACTU GRM155R0224KE01D GRM155R024KE01D GRM15	MuRata MuRata MuRata TDK MuRata TDK MuRata TDK MuRata TDK MuRata Kemet	CAP, CERM, 10 µF, 63 V, +V, 20%, S/R, 0603 CAP, CERM, 1 µF, 100 V, +V, 10%, S/RF, 1206 CAP, CERM, 47 µF, 10 V, +V, 10%, S/RF, 1210 CAP, CERM, 1 µF, 10 V, +V, 10%, S/R, 0402 CAP, CERM, 0.01 µF, 16 V, +V, 10%, S/R, 0402 CAP, CERM, 0.01 µF, 16 V, +V, 10%, S/R, 0402 CAP, CERM, 0.047 µF, 16 V, +V, 10%, S/R, 0402 CAP, CERM, 10 µF, 63 V, +V, 10%, S/R, 1210 CAP, CERM, 10 µF, 63 V, +V, 10%, S/R, 1210 CAP, CERM, 10 µF, 63 V, +V, 10%, S/R, 1206 CAP, CERM, 10 µF, 63 V, +V, 10%, S/R, 0402 CAP, CERM, 0.018µF, 100V, +V, 10%, S/R, 0402 CAP, CERM, 0.018µF, 100V, +V, 10%, S/R, 0402 CAP, CERM, 0.22µF, 6.3V, +V, 10%, S/R, 0402 CAP, CERM, 0.22µF, 6.3V, +V, 10%, S/R, 0402 CAP, CERM, 0.22µF, 6.3V, +V, 10%, S/R, 0402 CAP, CERM, 0.07µF, 100V, +V, 10%, S/R, 0402 CAP, CERM, 0.07µF, 100V, +V, 10%, S/R, 0402 CAP, CERM, 0.07µF, 100V, +V, 10%, S/R, 0603	0805 0803 1206 1210 0402 0402 0402 0402 1210 1210 1226 1206 0402 0603 0402 0402
9 C26 10 C27 11 C28, C5 12 C28, C5 12 C28, C5 13 C30 14 C31 15 C33 16 C33 16 C33 16 C33 17 C38, C6 17 C38, C6 17 C38, C6 17 C38, C6 18 C39 17 C38, C6 17 C38, C6 18 C39 18 C39 19 C41, C6 19 C38 19	, C51 , C32, C35, , C40 , C42 , C45 D8, D10, D13 D9 D4	1 2 4 1 1 1 1 2 2 1 1 2 2 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1	1uF 47uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2700pF 0.10zF Green Red 40V 30V 7V 5V	GRM31CR72A 105KA01L GRM31CR72A 105KA01L GRM32ER71A476K 15L C1005X751A 105K050BC GRM155SC1H220JA01D C1005X751C103K050BA GRM155K71C473KA01D GRM32ER71J106KA12L UMK316B725KL-T GRM155K72A 182KA01D C00903C183K1RACTU GRM155K72A 182KA01D C00903C183K1RACTU GRM155K72A 182KA01D C00903C183K1RACTU GRM155K72A72KA01D C00903C273K1 FRACTU GRM155K72A 182KA01D C00903C273K1 FRACTU GRM155K72A 182KA01D C00903C273K1 FRACTU GRM155K72A 182KA01D C00903C273K1 FRACTU GRM31CR72E 105KW03L KPTL3216CGCK-01 KPTL3216CGCK-01 ZPCCS.85073A BAT54C-7-F CDSOT2S-SM712	MuRata MuRata TDK MuRata TDK MuRata TTK MuRata MuRata Talyo Yuden MuRata MuRata MuRata MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kemet Kemit	CAP, CERM, 1 JF, 100 V, +/- 10%, X/R, 1206  CAP, CERM, 4 JF, 10 V, +/- 10%, X/R, 1210  CAP, CERM, 1 JF, 10 V, +/- 10%, X/S, 0402  CAP, CERM, 22 JF, 50 V, +/- 5%, C0GNP0, 0402  CAP, CERM, 0.01 JF, 16 V, +/- 10%, X/R, 0402  CAP, CERM, 0.01 JF, 16 V, +/- 10%, X/R, 0402  CAP, CERM, 0.01 JF, 16 V, +/- 10%, X/R, 1210  CAP, CERM, 10 JF, 63 V, +/- 10%, X/R, 1200  CAP, CERM, 10 JF, 63 V, +/- 10%, X/R, 1200  CAP, CERM, 10 JF, 10 V, +/- 10%, X/R, 1002  CAP, CERM, 1007, 100V, +/- 10%, X/R, 0402  CAP, CERM, 0.018UF, 100V, +/- 10%, X/R, 0402  CAP, CERM, 0.20JF, 6.3V, +/- 10%, X/R, 0402  CAP, CERM, 0.20JF, 6.3V, +/- 10%, X/R, 0402  CAP, CERM, 0.02UF, 6.3V, +/- 10%, X/R, 0402  CAP, CERM, 0.02UF, 6.3V, +/- 10%, X/R, 0402  CAP, CERM, 0.02UF, 100V, +/- 10%, X/R, 0402  CAP, CERM, 0.02UF, 100V, +/- 10%, X/R, 0402	1206 1210 0402 0402 0402 0402 1210 1206 0402 0402 0402 0403 0402 0404 0403 0402
10 C27 11 C28, C5 12 C39, C3 13 C30 14 C31 15 C33 16 C36 17 C38, C4 18 C39 19 C41, C4 20 C43, C4 21 C44 22 C53 23 D1, D8, 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 31 J2 33 J4 34 J5 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R3 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1 48, R5, R1 49 R17 49 R17 40 R1, R2 41 R14, R1 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1 48 R15 51 R20 52 R27, R2 53 R28 54 R32 55 R34, R3 55 R34, R3 55 R34, R3 55 R34, R3 56 R31 57 R43, R4 57 R4 57 R43, R4 57 R	, C51 , C32, C35, , C40 , C42 , C45 D8, D10, D13 D9 D7	1 2 4 1 1 1 1 2 2 1 1 2 2 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1	47uF 1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 10uF 0.018uF 0.022uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM352ER71A476KE15L C1005X751A10K5K050BC GRM1555C1H220JA01D C1005X7F1C103K050BA GRM15587C1H220JA01D GRM35ER71J105KA1ZL MRX3168725SKLT GRM155872A18ZKA01D C0603C185K1FACTU GRM155R72A2ZKA01D GRM356872A2ZKA01D GRM155R00,224KE01D GRM155R00,224KE01D GRM155R00,224KE01D GRM155R00,224KE01D GRM155R00,224KE01D GRM15CR72E104KW0SL KFTL3216SUCK0-01 ZHC152F05K05K05K05K05K05K05K05K05K05K05K05K05K0	MuRata TDK MuRata TDK MuRata TDK MuRata MuRata Taiyo Yuden MuRata Kemet MuRata MuRata MuRata Kemet MuRata Kemet	CAP, CERM, 47 JF, 10 V, +/- 10%, XTR, 1210 CAP, CERM, 1 JF, 10 V, +/- 10%, XTS, 0402 CAP, CERM, 22 pF, 50 V, +/- 5%, COG/NP0, 0402 CAP, CERM, 0.01 JF, 16 V, +/- 10%, XTR, 0402 CAP, CERM, 0.047 JF, 16 V, +/- 10%, XTR, 1210 CAP, CERM, 10 JF, 63 V, +/- 10%, XTR, 1210 CAP, CERM, 12 JF, 60 V, +/- 10%, XTR, 1210 CAP, CERM, 1800pF, 100V, +/- 10%, XTR, 0402 CAP, CERM, 0.018UF, 100V, +/- 10%, XTR, 0402 CAP, CERM, 0.21UF, 6.3 V, +/- 10%, XTR, 0402 CAP, CERM, 0.21UF, 6.3 V, +/- 10%, XTR, 0402 CAP, CERM, 0.21UF, 6.3 V, +/- 10%, XTR, 0402 CAP, CERM, 0.70UF, 100V, +/- 10%, XTR, 0402 CAP, CERM, 0.07UF, 100V, +/- 10%, XTR, 0402 CAP, CERM, 0.07UF, 100V, +/- 10%, XTR, 0603	1210 0402 0402 0402 0402 1210 1206 0402 0603 0402 0603 0402 0402
111 C28, C5 12 C32 C37 13 C30 14 C31 15 C30 16 C33 16 C33 16 C33 17 C38, C4 17 C38, C4 17 C38, C4 20 C43, C4 21 C44, C4 21 C44, C4 21 C44, C4 22 C53 23 D1, D8, C4 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 48 R15 49 R17 40 R1, R2 41 R10, R3, R1 42 R8 43 R9 44 R10 45 R11 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 47 R14, R1 48 R15 51 R20 48 R35 54 R32 55 R34, R3 55 R34, R3 55 R34, R3 55 R34, R3 56 R41, R4 57 R43, R4 57 R4	, C51 C32, C35, , C40 , C42 , C45 D8, D10, D13 D9 D4 D7	2 4 1 1 1 1 2 2 2 1 1 4 2 2 2 1 1 1 2 2 1 1 1 1	1uF 22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 7V 5V	C1005X7S1A105K050BC GRM1555C1H220JA01D GRM155SC1H220JA01D GRM35ER71-G73KA01T GRM35ER71-J06KA12L UMK316B725KL-T GRM155K72A18ZKA01T GRM155K72A18ZKA01T GRM155K72A18ZKA01T C06903C183H78ACTU GRM155K72A7ZKA01T C06903C183H78ACTU GRM155K72A7ZKA01T C06902C73K1FACTU GRM155K72A7ZKA01T C06902C73K1FACTU GRM15CK72A7ZKA01T C06902C73K1FACTU GRM35CK72A7ZKA01T ATT21C5UBCCCT ATT21C5UBCCT ATT21C5UBCCCT ATT21C5UBCCT ATT21C5UBCCCT ATT21C5UB	TDK MuFata MuFata MuFata MuRata Talya-Yuden MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kemet Kemet Kenpipht Kingbight	CAP, CERM, 1 µF, 10 V, 4/- 10%, X7S, 0402  CAP, CERM, 22 pF, 50 V, 4/- 5%, C0G/NP0, 0402  CAP, CERM, 0.01 µF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 0.047 µF, 16 V, +/- 10%, X7R, 0402  CAP, CERM, 10 µF, 63 V, +/- 10%, X7R, 1206  CAP, CERM, 12 µF, 50 V, +/- 10%, X7R, 1206  CAP, CERM, 1800pF, 100V, +/- 10%, X7R, 0402  CAP, CERM, 0.018µF, 100V, +/- 10%, X7R, 0402  CAP, CERM, 0.18µF, 100V, +/- 10%, X7R, 0402  CAP, CERM, 0.22µF, 6.0V, +/- 10%, X7R, 0402  CAP, CERM, 0.22µF, 6.0V, +/- 10%, X7R, 0402  CAP, CERM, 0.02µF, 6.0V, +/- 10%, X7R, 0402  CAP, CERM, 0.02µF, 6.0V, +/- 10%, X7R, 0402  CAP, CERM, 0.02µF, 6.0V, +/- 10%, X7R, 0402	0402 0402 0402 0402 1210 1226 0402 0603 0402 0402
12 C29, 53 C37 C37 C37 C37 C37 C37 C38 C37 C37 C38 C40 C41 C41 C41 C42 C53 C41 C44 C42 C53 C41 C44 C42 C53 C54 C64 C64 C64 C64 C64 C64 C64 C64 C64 C6	, C42 , C42 , C45 , C45	1 1 1 1 1 2 2 2 1 1 4 2 2 1 1 2 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1	22pF 0.01uF 0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM155SC1H22QJA01D  C1005X7R1C1038050BA  GRM155R71C473KA01D  GRM35ER71H05KA1ZL  MMC316B725KL-T  GRM155R72A18ZKA01D  GRM155R72A18ZKA01D  GRM155R6QJ224KE01D  GRM155R6QJ224KE01D  GRM155R6QJ224KE01D  GRM15CR72E104KW0SL  KPTL3216GJCK-01  KPTL3216GJCK-01  BAT5G-7-F  LOSSOT2S-8M712	TDK MuRata MuRata MuRata Taiyo Yuden MuRata Kemet MuRata MuRata MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kingbright Kingbright	CAP, CERM, 0.01 µF, 16 V, +/- 10%, X7R, 0402 CAP, CERM, 0.047 µF, 16 V, +/- 10%, X7R, 0402 CAP, CERM, 10 µF, 68 V, +/- 10%, X7R, 1240 CAP, CERM, 10 µF, 68 V, +/- 10%, X7R, 1206 CAP, CERM, 120 µF, 50 V, +/- 10%, X7R, 1206 CAP, CERM, 1800µF, 100V, +/- 10%, X7R, 0402 CAP, CERM, 0.018 µF, 100V, +/- 10%, X7R, 0402 CAP, CERM, 0.22 µF, 6.3V, +/- 10%, X7R, 0402 CAP, CERM, 0.22 µF, 6.3V, +/- 10%, X7R, 0402 CAP, CERM, 0.02 µF, 100V, +/- 10%, X7R, 0402 CAP, CERM, 0.02 µF, 100V, +/- 10%, X7R, 0402	0402 0402 1210 1206 0402 0603 0402 0402
14 G31 15 G33 16 G36 17 G38, C4 18 G39 19 G41, C4 20 G43, C4 22 G53 23 D1, D8, 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 29 F1, F2 30 F1, 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 48 R15 49 R17 40 R1, R2 41 R14, R1 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 47 R14, R1 48 R15 51 R20 47 R14, R1 48 R15 51 R20 48 R15 51 R20 47 R14, R1 51 R20 48 R15 51 R20 47 R14, R1 51 R20 48 R15 51 R20 48 R15 51 R20 52 R27, R2 63 R31 64 R32, R27 65 R34, R3 65 R34, R3 65 R34, R3 66 R34, R3 67 R34 68 R15 69 R17 60 R18 61 R20 61 R1 61 R3 61	, C40 , C42 , C45 D8, D10, D13 D9 D4 D7 F2	1 1 1 2 1 1 2 2 1 1 4 2 2 1 1 2 2 1 1 2 2 1 1 2 2 1 1 2 1 1 2 1 1 1 2 1	0.047uF 10uF 2.2uF 1800pF 0.018uF 0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM156R71C473KA01D GRM32ER71106K412L JMK316B7225KL-T GRM155R72A182KA01D O0803C183K1RACTU GRM155R0J224KE01D GRM155R0J227KA01D C0803C273K1RACTU C0803C273K1RACTU GRM316R72E104KW03L KPTL-3216C3CK-01 Z47C3S017A JRM316R72E104KW03L JRM316R72E104KW0	MuRata MuRata Taiyo Yuden MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kemet MuRata Kingbright Kingbright	CAP, CERM, 0.047 µF, 16 V., +/- 10%, X/R, 0.402  CAP, CERM, 10 µF, 63 V, +/- 10%, X/R, 1210  CAP, CERM, 22 µF, 50 V, +/- 10%, X/R, 1206  CAP, CERM, 120 µF, 50 V, +/- 10%, X/R, 0.402  CAP, CERM, 0.018µF, 100V, +/- 10%, X/R, 0.603  CAP, CERM, 0.22µF, 6.3V, +/- 10%, X/R, 0.402  CAP, CERM, 0.22µF, 6.3V, +/- 10%, X/R, 0.402  CAP, CERM, 0.22µF, 100V, +/- 10%, X/R, 0.402  CAP, CERM, 0.27µF, 100V, +/- 10%, X/R, 0.603	0402 1210 1206 0402 0603 0402 0402
15	, C40 , C42 , C45 D8, D10, D13 D9 D4 D7	1 1 2 1 2 2 2 1 1 4 4 2 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1	10uF 2.2uF 1800pF 0.018uF 0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM302 R71/108KA12L UMK316B725KL-T GRM155R72A 182KA01D C06003 C188K 18ACTU GRM155R60,1224KE01D GRM155R60,1224KE01D GRM155R72A272KA01D GRM315CR72E 104KW03L KPTL-32165CK-01 KPTL-32165CK-01 ZPCS35073 BAT54C-7-F CDS0T23-SM712	MuRata Tugo Yuden MuRata Kemet MuRata MuRata MuRata Kemet MuRata Kemet MuRata Kingbright Kingbright	CAP, CERM, 10 µF, 63 V, ++ 10%, X7R, 1210 CAP, CERM, 22 µF, 50 V, +/ 10%, X7R, 1208 CAP, CERM, 1800pF, 100V, +/ 10%, X7R, 0402 CAP, CERM, 0.018uF, 100V, +/ 10%, X7R, 0402 CAP, CERM, 0.22uF, 6.3V, +/ 10%, X7R, 0402 CAP, CERM, 0.22uF, 6.3V, +/ 10%, X7R, 0402 CAP, CERM, 0.27uF, 100V, +/ 10%, X7R, 0402 CAP, CERM, 0.027uF, 100V, +/ 10%, X7R, 0402	1210 1206 0402 0603 0402 0402
17 C38, C4 18 C39 19 C41, C4 21 C42 20 C43, C4 21 C44 22 C53 23 D1, D8, 24 D2, D9 26 D5, 27 D6, D7 28 D11 29 F1, F2 30 F1, F2 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R1, R4, R5, R3 42 R8 44 R10 45 R13, R1 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 52 R27, R2 54 R31 51 R20 55 R34, R3 68 77 R43, R26 68 77 R43, R26 68 77 R43, R26 68 77 R43, R26 77 R43, R41, R41 77 R43, R41 77	, C40 , C42 , C45 D8, D10, D13 D9 D4 D7	2 1 2 2 1 1 4 2 2 1 2 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 1 2 1	1800pF 0.018uF 0.22uF 2700pF 0.027uF 0.01uF Green Red 40V 30V 7V 5V	GRM15587234 182KA01D C06030 T183K1 RACTU GRM155860 J224KE01D GRM155860 J224KE01D GRM155872A272KA01D C06030 C273K1 RACTU GRM31CR72E104KW03L KPTL-3216CGCK-01 KPTL-3216CGCK-01 KPTL-3216CGCK-01 KPTL-3216CGCK-01 KPTL-3216CGCK-01 GRM31CR72E104CK-01 J4CS350TA BAT54C-7-F CDSOT23-SM712	MuRata Kemet MuRata MuRata MuRata Kemet MuRata Kemet MuRata Kingbright Kingbright	CAP, CERM, 1800pF, 100V, 4/-10%, X7R, 0402 CAP, CERM, 0.18UF, 100V, 4/-10%, X7R, 0603 CAP, CERM, 0.22UF, 6.3V, +/-10%, X5R, 0402 CAP, CERM, 2700pF, 100V, +/-10%, X7R, 0402 CAP, CERM, 0.02TUF, 100V, +/-10%, X7R, 0603	0402 0603 0402 0402
18 C39 19 C41, C4 20 C43, C4 21 C44 22 C53 23 D1, D8, 24 D2, D9 25 D3 26 D5 27 D6, D7 28 D11 29 F1, F2 30 FL1 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 48 R15, 48 R14 48 R15 49 R11 46 R13, R1 47 R14, R1 49 R14, R2 48 R15 49 R11 46 R13, R1 47 R14, R1 48 R15 50 R18 51 R20 47 R14, R1 50 R18 51 R20 52 R27, R2 83 84 R35 84 R35 85 R31 87 87 88 R35 87 87 88 R35 88 R37 88 R37 88 R31 88 R25 88 R37 88 R37 88 R31 88 R35 89 R11 88 R15 89 R11 80 R18 81 R24 81 R15 81 R24 81 R35 81 R34 81 R35 81 R34 81 R35 83 R36 84 R35 85 R31 87 R34 88 R15 89 R11 89 R11 80 R18 81 R34 81 R35 81 R34 81 R35 81 R34 81 R35 81 R	D8, D10, D13 D9 D4 D7 F2	1 2 2 1 1 4 2 2 1 2 1 2 1 1 2 1 1	0.018uF 0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	C0603C183K1RACTU GRM15SR60J224KE01D GRM15SR72AZ72KA01D C0603C273K1RACTU GRM31CR72E104KW03L KPTL-3216CGCK-01 KPTL-3216SURCK-01 ZHCS350TA BAT34C7-F CDSOT23-SM712	Kemet MuRata MuRata Kemet MuRata Kemet Kungbright Kingbright	CAP, CERM, 0.018uF, 100V, +/-10%, X/R, 0603 CAP, CERM, 0.22uF, 6.3V, +/-10%, X/R, 0402 CAP, CERM, 2700pF, 100V, +/-10%, X/R, 0402 CAP, CERM, 0.027uF, 100V, +/-10%, X/R, 0603	0603 0402 0402
19 C41, C4 20 C43, C4 21 C44 22 C53 23 D1, D8, 24 D2, D9 26 D5 27 D6, D7 28 D11 29 F1, F2 30 F1, F2 30 J3, J6 31 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R4 42 R8 43 R9 44 R10 45 R14, R4 815 81 R23, R2 47 R24, R3 48 R15 81 R23, R2 48 R15 81 R23, R2 47 R24, R3 81 R25 81 R27, R2 81 R20 81 R30 81	, C42 , C45 D8, D10, D13 D9 D4 D7	2 2 1 1 4 2 2 1 2 1 1 2 1 1 2	0.22uF 2700pF 0.027uF 0.1uF Green Red 40V 30V 7V 5V	GRM155R60J224KE01D GRM155R72A272KA01D C0603C273K1RACTU GRM31CR72E104KW03L KPTL-3216CGCK-01 KPTL-3216SURCK-01 ZHC33901A BAT54C-7-F CDS0723-SM712	MuRata MuRata Kemet MuRata Kingbright Kingbright	CAP, CERM, 0.22uF, 6.3V, +/-10%, X5R, 0402 CAP, CERM, 2700pF, 100V, +/-10%, X7R, 0402 CAP, CERM, 0.027uF, 100V, +/-10%, X7R, 0603	0402 0402
21 C44 22 C53 23 D1, D8, 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 29 F1, F2 30 F1, F2 30 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R8, R3, R3 42 R8 43 R9 44 R10 45 R13, R1 46 R13, R1 87, R2 47 R14, R1 88 R15 50 R18 88 R15 51 R20 52 R27, R2 51 R24, R3 51 R20 52 R27, R2 53 R38 54 R32 55 R34, R3 64 R32 55 R34, R3 67 R43, R4 67 R43, R4 67 R43, R4 67 R34 68 R15 69 R17 69 R17 69 R17 69 R18 61 R20 61 R20 61 R3 6	D8, D10, D13 D9 D4 D7	1 1 4 2 2 1 2 1 2 1 1 2 1 1	0.027uF 0.1uF Green Red 40V 30V 7V 5V	C0603C273K1RACTU GRM31CR72E104KW03L KPTL-3216CGCK-01 KPTL-3216SURCK-01 ZHCS350TA BAT54C-7-F CDS0T23-SM712	Kemet MuRata Kingbright Kingbright	CAP, CERM, 0.027uF, 100V, +/-10%, X7R, 0603	
22 C53 23 D1, D8, 24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11, 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 40 R1, R2 41 R1, R2 42 R8 43 R9 44 R10 46 R13, R7 47 R14, R1 46 R13, R7 47 R14, R1 48 R15 49 R17 50 R18 51 R20 62 R3, R2 64 R32 64 R31 65 R34, R3 65 R27, R2 68 R37 78 R43, R68 88 R35 68 R37 89 U3	D8, D10, D13 D9 D4 D7	1 4 2 2 1 2 1 2 1 1 2 1 1	0.1uF Green Red 40V 30V 7V 5V	GRM31CR72E104KW03L KPTL-3216CGCK-01 KPTL-3216SURCK-01 Z-ICS350TA BATS4C-7-F CDSOT23-SM712	MuRata Kingbright Kingbright	CAP, CERM, 0.027uF, 100V, +/-10%, X7R, 0603 CAP, CERM, 0.1 uF, 250 V, +/- 10%, X7R, 1206	
23	D8, D10, D13 D9 D4 D7	4 2 2 1 2 1 2 1 1 2 1	Green Red 40V 30V 7V 5V	KPTL-3216CGCK-01 KPTL-3216SURCK-01 ZHCS350TA BAT54C-7-F CDSOT23-SM712	Kingbright Kingbright		
24 D2, D9 25 D3, D4 26 D5 27 D6, D7 28 D11 29 F1, F2 30 F1, F2 30 J4 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 48 L5 39 L7 40 R1, R2 41 R1, R4, R5, R3, R3 42 R8 43 R9 44 R10 45 R13, R1 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 52 R27, R2 53 R28 54 R32 55 R34, R3 68 787 7843, R3 787 874, R36 875 873 878 878 878 878 878 878 878 878 878	D9 D4 D7 F2	2 2 1 2 1 2 1 1 1	Red 40V 30V 7V 5V	KPTL-3216SURCK-01 ZHCS350TA BAT54C-7-F CDSOT23-SM712	Kingbright	LED, Green, SMD	1206 3.2x1.6mm
26 D5 D6 D7 D7 D6 D7	D7 F2	1 2 1 2 1 1 2	30V 7V 5V	BAT54C-7-F CDSOT23-SM712		LED, Red, SMD	3.2x1.6mm
27 OB. D7 28 D11 29 F1, F2 30 F1, F2 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R5 42 R8 44 R10 45 R13, R1 46 R13, R1 47 R24, R2 48 R15 50 R18 51 R20 52 R27, R2 52 R27, R2 53 R28 54 R32 55 R34, R3 56 R41, R4 57 R43, R4	F2	2 1 2 1 1 2	7V 5V	CDSOT23-SM712	Diodes Inc.	Diode, Schottky, 40V, 0.35A, SOD-523	SOD-523
28 D11 29 F1, F2 30 F1, F2 30 F1, F2 30 F1, F2 30 F1, F2 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R3 42 R8 43 R9 44 R10 45 R11, R1 46 R13, R1 47 R14, R1 48 R15 49 R17 50 R18 51 R20 52 R27, R2 53 R28 54 R32 55 R34, R3 68 R37 78 R43, R5 68 R41, R4 68 R35 68 R41 68 R41 68 R41 68 R35 68 R41	F2	1 2 1 1 2	5V		Diodes Inc. Bourns	Diode, Schottky, 30 V, 0.2 A, SOT-23 Diode, TVS, Bi, 7 V, SOT-23	SOT-23 SOT-23
29 F1, F2 30 F1, F1 31 J2 32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R38, R3 44 R10 45 R13, R1 46 R13, R1 47 R14, R1, R1 48 R15 50 R18 R15 51 R20 52 R27, R2 51 R20 52 R27, R2 53 R28 54 R32 55 R34, R3 56 R41, R4 57 R43, R4 58 U1 59 U3	F2	2 1 1 2 1		SMAJ5.0A-TR	STMicroelectronics	Diode, TVS, Uni, 5 V, 13.4 Vc, SMA	SMA
31 J2 32 J3, J6 33 J4 J5 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R38, R3 44 R10 45 R11 46 R13, R1 47 R14, R1 48 R15 50 R18 R15 51 R20 52 R27, R2 52 R27, R2 53 R28 54 R32 55 R34, R3 56 R34, R3 57 R43, R4 58 U1 59 U3	J6	1 2 1	2.45 GHz	0459.500	Littelfuse	Fuse, 0.5 A, 125VAC/VDC, SMD	PicoSMF459
32 J3, J6 33 J4 34 J5 35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R38, R9 44 R10 45 R11, R1 46 R13, R1 47 R14, R1 88 R15 11 R20 50 R18 51 R20 52 R27, R2 64 R32 64 R32 65 R34, R3 67 R43, R4 67 R4 67 R43, R4 67 R4	J6	1		LFB182G45BG5D920	MuRata	Filter, BandPass, 2.45GHz, SMD	1.6x0.8mm
33 J4  34 J5  35 L1, L6  36 L2  37 L3, L4  38 L5  39 L7  40 R1, R2  41 R4, R5, R3  42 R8  43 R9  44 R10  45 R11, R1  46 R13, R1  47 R14, R1  88, R24  48 R15  50 R18  51 R20  52 R27, R2  64 R32  64 R32  64 R32  65 R34, R3  66 R41, R4  67 R43, R4	J6	1		SMA-J-P-H-ST-EM1	Samtec	SMA Jack, 50 Ohm, Gold, R/A, SMT	SMA Jack, R/A, SMT
35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R38, R3 43 R9 44 R10 45 R11, R1 46 R13, R1 47 R14, R1, R24, R25, R27, R28, R31 51 R20 52 R27, R2 R31 53 R28 54 R32 55 R34, R3 56 R41, R4 57 R43, R4 58 U1 59 U3				GRPB052VWVN-RC	Sullins Connector Solution		Header, 5x2, 50mil
35 L1, L6 36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R5, R38, R5 44 R1, R7 45 R11 45 R11 46 R13, R1 47 R14, R1 824, R2 48 R15 50 R18 51 R20 62 R27, R2 63 R31 55 R34, R3 67 R34, R3 67 R34, R3 67 R34, R3 67 R43, R4 67 R34, R4 67 R34 67 R43		1	l	FH12-10S-0.5SH[55]	Hirose Electric Co. Ltd.	Connector, FPC 10 Pos. 9.1x2.0x5.6 mm	Connector PFC, 9.1x2.0x5.6mm
36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R4, R3, R3 42 R8 43 R9 44 R10 45 R13, R1 46 R13, R1 823, R2 47 R14, R1 824, R2 48 R15 51 R20 52 R27, R2 50 R18 51 R20 52 R27, R2 53 R38 54 R32 55 R34, R3 56 R41, R4 57 R43, R4 57 R43, R4				618026330923	Wurth Elektronik	Receptacle, D-Sub, 2.29mm, 27 Pos, Gold, R/A, TH	Receptacle, D-Sub, 2.29mm, 26 Pos,
36 L2 37 L3, L4 38 L5 39 L7 40 R1, R2 41 R3, R3, R3 42 R8 43 R9 44 R10 45 R13, R1 46 R13, R1 823, R2 47 R14, R1 824, R2 48 R15 51 R20 52 R27, R2 50 R18 51 R20 52 R27, R2 54 R32 55 R34, R3 57 R43, R4 57 R43, R4 57 R43, R4	16	2	1500 ohm	BLM18HE152SN1D	MuRata	Ferrite Bead, 1500 ohm @ 100 MHz, 0.5 A, 0603	R/A, TH 0603
37 L3, L4  38 L5  39 L7  40 R1, R2  41 R4, R5, R38, R38, R4  42 R8  43 R9  44 R10  45 R11  46 R13, R1  47 R14, R1  50 R18  51 R20  83 R28  64 R32  87 R37  66 R41, R4  87 R37  56 R41, R7  57 R43, R9  58 U3	LO	1	10uH	CKS2125100M-T	Taiyo Yuden	Inductor, Multilayer, Ferrite, 10 µH, 0.11 A, 0.52 ohm, SMD	0805
39 L7 40 R1, R2 41 R4, R5, R38, R3 42 R8 43 R9 44 R10 45 R11, R1 46 R13, R1 R24, R2 47 R14, R1 F24, R2 48 R15 51 R20 52 R27, R2 R37 R37 R37 R37 R37 R37 R37 R43, R4 R37 R37 R43, R4 R37 R43, R4 R37 R43, R4 R57 R43, R4 R59 U3	L4	2	4.7uH	MLP2520S4R7ST0S1	TDK	Inductor, Multilayer, Ferrite, 4.7 µH, 0.3 A, 0.143 ohm, SMD	Inductor,
39 L7 40 R1, R2 41 R4, R5, R38, R3 42 R8 43 R9 44 R10 45 R11, R1 46 R13, R1 R24, R2 47 R14, R1 F24, R2 48 R15 51 R20 52 R27, R2 R37 R37 R37 R37 R37 R37 R37 R43, R4 R37 R37 R43, R4 R37 R43, R4 R37 R43, R4 R57 R43, R4 R59 U3			4000 1	DI MAGILIO AGGONIAD		F :: B :: 4000 !	2.5x1.1x2mm
41 R4, R5, R38, R4 R5, R38, R5, R38, R5, R5, R5, R5, R5, R5, R5, R5, R5, R5		1	1000 ohm 100uH	BLM15HG102SN1D 744053101	MuRata Wurth Elektronik	Ferrite Bead, 1000 ohm @ 100 MHz, 0.25 A, 0402 Inductor, Shielded Drum Core, Ferrite, 100 µH, 0.45 A, 0.36 ohm, SMD	0402 WE-TPC-LH
R38, R3 42 R8 43 R9 44 R10 45 R11, 46 R13, R1 R23, R2 47 R14, R1 R24, R24 48 R15 51 R20 52 R27, R2 R37		2	0	CRCW04020000Z0ED	Vishay-Dale	RES, 0, 5%, 0.063 W, 0402	0402
43 R9 44 R10 45 R11 46 R13, R1 R23, R2 47 R14, R1 R24, R15 50 R18 51 R20 52 R27, R2 R31 53 R28 64 R32 55 R34, R3 76 R41, R4 77 R43, R4 78 R41, R4 79 R43, R4	R5, R33, , R39, R40	6	470 47.5k	CRCW0402470RJNED CRCW040247K5FKED	Vishay-Dale Vishay-Dale	RES, 470, 5%, 0.063 W, 0402 RES, 47.5 k, 1%, 0.063 W, 0402	0402
45 R11 46 R13, R1 R23, R2 47 R14, R1 R24, R2 48 R15 51 R20 S1 R20 S2 R27, R2 R31 S3 R28 S4 R32 S5 R34, R3 S6 R41, R4 S7 R43, R4 S8 U3		1	100k	CRCW0402100KJNED	Vishay-Dale Vishay-Dale	RES, 100 k, 5%, 0.063 W, 0402	0402
46 R13, R1 R23, R2 47 R14, R1 R24, R2 48 R15 50 R18 51 R20 52 R27, R2 R31 S3 R28 54 R32 55 R34, R3 S5 R34, R3 S6 R41, R4 S7 R43, R4 S8 U3		1	91.0k	RG1608P-913-B-T5	Susumu Co Ltd	RES, 91.0 k, 0.1%, 0.1 W, 0603	0603
R23, R2 47 R14, R1 R24, R2 48 R15 50 R18 51 R20 R31 52 R27, R2 R31 53 R28 54 R32 55 R34, R3 56 R41, R4 57 R43, R4 58 U1 59 U3		1	10.0k	CRCW040210K0FKED	Vishay-Dale	RES, 10.0 k, 1%, 0.063 W, 0402	0402
R24, R2 48 R15 49 R17 50 R18 51 R20 52 R27, R2 R31 53 R28 54 R32, R3 56 R41, R4 57 R43, R4 58 U1 59 U3		5	18.0k	CRCW040218K0FKED  CRCW040233K0JNED	Vishay-Dale Vishay-Dale	RES, 18.0 k, 1%, 0.063 W, AEC-Q200 Grade 0, 0402  RES, 33 k, 5%, 0.063 W, 0402	0402
49 R17 50 R18 51 R20 52 R27, R2 R31 53 R28 54 R32 55 R34, R3 F36 R41, R4 57 R43, R4 58 U1 59 U3	, R26				,		
50 R18 51 R20 52 R27, R2 R31 53 R28 54 R32 55 R34, R3 R37 56 R41, R4 57 R43, R4 58 U1 59 U3		1	2.00Meg	CRCW04022M00FKED	Vishay-Dale	RES, 2.00 M, 1%, 0.063 W, 0402	0402
51 R20 52 R27, R2 R31 53 R28 54 R32 55 R34, R3 R37 56 R41, R4 57 R43, R4 58 U1 59 U3		1	130k 110k	CRCW0402130KJNED CRCW0402110KFKED	Vishay-Dale Vishay-Dale	RES, 130 k, 5%, 0.063 W, 0402 RES, 110 k, 1%, 0.063 W, 0402	0402 0402
R31 53 R28 54 R32 55 R34, R3 R37 56 R41, R4 57 R43, R4 58 U1 59 U3		1	24.9k	CRCW040224K9FKED	Vishay-Dale	RES, 24.9 k, 1%, 0.063 W, 0402	0402
54 R32 55 R34, R3 R37 56 R41, R4 57 R43, R4 58 U1 59 U3	, R29, R30,	4	4.12k 3.24k	RG1608P-4121-B-T5	Susumu Co Ltd  TT Electronics/IRC	RES, 4.12k ohm, 0.1%, 0.1W, 0603	0603
55 R34, R3 R37 56 R41, R4 57 R43, R4 58 U1 59 U3		1	3.24k 383k	PFC-W1206R-12-3241-B CRCW0402383KFKED	Vishay-Dale	RES, 3.24k ohm, 0.1%, 0.333W, 1206 RES, 383 k, 1%, 0.063 W, 0402	0402
57 R43, R4 58 U1 59 U3	, R35, R36,	4	10	CRCW060310R0JNEAHP	Vishay-Dale	RES, 10, 5%, 0.25 W, 0603	0603
58 U1 59 U3		2	120	CRCW0603120RJNEA CRCW1206100RJNEA	Vishay-Dale Vishay-Dale	RES, 120, 5%, 0.1 W, 0603 RES, 100, 5%, 0.25 W, 1206	0603 1206
59 U3	,	1	.00	TVS3300DRVR	Texas Instruments	33V Precision Surge Protection Clamp, DRV0006A (WSON-6)	DRV0006A
		1		CC2650F128RHBR	Texas Instruments	Ultra low-power ARM Cortex M3 2.4 GHz Radio MCU, Multi-Protocol, RSHB032E	RHB0032E
60 U4 61 U5		1		MSP432P401RIRGCR LM5165DRCR	Texas Instruments Texas Instruments	Low-Power and High Performance 32-Bit ARM Cortex M4F With 256KB Flash and 64KB RAM, RGC0064B (VQFN-64) 3V-65V, 150mA Synchronous Buck Converter With Ultra-Low IQ,	RGC0064B DRC0010J
62 U6		1		ADS1220IRVAR	Texas Instruments	DRC0010J (VSON-10)  24-Bit, 2kSPS, 4-Ch, Low-Power, Delta-Sigma ADC with PGA and	RVA0016A
63 U7		1		TPS71733DSER	Texas Instruments	V Input, with Low IQ, 6-pin WSON (DSE), -40 to 125 degC, Green	DSE0006A
64 U8		1		MAX3232EIPWR	Texas Instruments	(RoHS & no Sb/Br)  3-V to 5.5-V Multichannel RS-232 Line Driver / Receiver with ±15-kV IEC ESD Protection, -40 to 85 degC, 16-Pin TSSOP (PW), Green (RoHS &	PW0016A
65 U9				SN65HVD71DGKR	Texas Instruments	no Sb/Br)  3.3-V Full-Duplex RS-485 Transceivers With 12-kV IEC ESD,	DGK0008A
66 Y1		1		TSX-3225 24.0000MF20G-AC3		DGK0008A (VSSOP-8) Crystal, 24 MHz, 9 pF, SMD	SMD, 4-Leads, Body 2.65x3.35mm, Height 0.6mm
67 Y2, Y4		1		FC-12M 32.7680KA-A3	Epson	Crystal, 32.768kHz, 12.5pF, SMD	Crystal
68 Y3	Y4		l	FA-238 48.0000MB-W0	Epson	Crystal, 48MHz, 12pF, SMD	2.05x.6x1.2mm 3.2x2.5mm
	Y4	1 2		Used in BOM report	Used in BOM report	CAP, CERM, xxxF, xxV, [TempCo], xx%, [PackageReference]	Used in PnP output and some BOM
70 FID1, FI 71 J1, J11	Y4 C10, C11	1		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	reports Fiducial

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