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Xilinx Ultrascale Kintex Power Ref Design

Designator	Description	Manufacturer	PartNumber	Quantity
!PCB1	Printed Circuit Board	Any	SAT0101	1
C1, C15, C27, C60, C82, C94, C107, C119, C200	CAP, TA, 68uF, 16V, +/-20%, 0.05 ohm, SMD	Panasonic	16TQC68MYF	9
C2, C16, C28, C61, C83, C95, C108, C120, C201	CAP, CERM, 47uF, 16V, +/-20%, X5R, 1210	MuRata	GRM32ER61C476ME15L	9
C3, C18, C30, C85, C98, C110, C121	CAP, AL, 220uF, 4V, +/-20%, 9 ohm, SMD	Panasonic	EEFSX0G221ER	7
C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C19, C20, C21, C22, C23, C24, C25, C31, C32, C33, C34, C35, C36, C37, C64, C65, C77, C78, C79, C86, C87, C88, C89, C90, C91, C92, C99, C100, C101, C102, C103, C104, C105, C111, C112, C113, C114, C115, C116, C117, C122,	CAP, CERM, 47uF, 6.3V, +/-20%, X5R, 1210	MuRata	GRM32ER60J476ME20L	61

Designator	Description	Manufacturer	PartNumber	Quantity
C14, C26, C38, C49, C50, C52, C53, C55, C81, C93, C106, C118, C131, C149, C150, C168, C169, C189, C190, C192, C193, C195	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E104KA01D	22
C39, C40, C41, C42, C43, C44, C45, C46, C47, C180, C181, C182, C183, C184, C185, C186, C187	CAP, CERM, 0.01uF, 50V, +/-10%, X7R, 0402	MuRata	GRM155R71H103KA88D	17
C48, C188	CAP, CERM, 0.01uF, 16V, +/-10%, X7R, 0402	MuRata	GRM155R71C103KA01D	2
C51, C54, C191, C194	CAP, CERM, 4.7uF, 6.3V, +/-10%, X5R, 0603	MuRata	GRM188R60J475KE19D	4
C56, C57, C58, C142, C145, C198	CAP, CERM, 1000pF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E102KA01D	6
C59, C196, C199	CAP, CERM, 1200pF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E122KA01D	3
C63, C203	CAP, CERM, 100pF, 100V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C2A101JA01D	2
C66	CAP, CERM, 4.7uF, 25V, +/-10%, X7R, 1206	TDK	C3216X7R1E475K	1
C67	CAP, AL, 100uF, 25V, +/-20%, 30 ohm, SMD	Panasonic	EEHZA1E101XP	1
C68	CAP, AL, 470uF, 2.5V, +/-20%, 4.5 ohm, SMD	Panasonic	EEFSX0E471E4	1
C69, C70, C71, C134, C135, C136, C137, C138, C139, C140, C141	CAP, CERM, 22uF, 25V, +/-10%, X5R, 1210	MuRata	GRM32ER61E226KE15L	11
C72	CAP, CERM, 0.1uF, 25V, +/-10%, X5R, 0603	MuRata	GRM188R61E104KA01D	1

Designator	Description	Manufacturer	PartNumber	Quantity
C73, C74, C75, C76, C152, C153, C154, C155, C156, C157, C158, C171, C172, C173, C174, C175, C176, C177	CAP, CERM, 100uF, 6.3V, +/-20%, X5R, 1210	MuRata	GRM32ER60J107ME20L	18
C97, C206	CAP, CERM, 3300pF, 50V, +/-10%, X7R, 0402	MuRata	GRM155R71H332KA01D	2
C132, C133	CAP, AL, 100uF, 25V, +/-20%, 0.3 ohm, SMD	Panasonic	EEE-FC1E101P	2
C143	CAP, CERM, 100pF, 50V, +/-5%, C0G/NP0, 0603	MuRata	GRM1885C1H101JA01D	1
C144, C164	CAP, CERM, 0.1uF, 25V, +/-10%, X5R, 0402	MuRata	GRM155R61E104KA87D	2
C146, C148, C166, C167	CAP, CERM, 470pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H471KA01D	4
C147, C161, C162, C163, C165	CAP, CERM, 1uF, 25V, +/-10%, X5R, 0603	MuRata	GRM188R61E105KA12D	5
C151, C179	CAP, CERM, 3300pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H332KA01D	2
C159, C170	CAP, CERM, 1000pF, 50V, +/-10%, X7R, 0603	MuRata	GRM188R71H102KA01D	2
C160, C178	CAP, TA, 560uF, 2V, +/-20%, 0.003 ohm, SMD	Panasonic	EEF-GX0D561L	2
C197	CAP, CERM, 2200pF, 25V, +/-10%, X7R, 0603	MuRata	GRM188R71E222KA01D	1
C207, C208	CAP, CERM, 1000pF, 16V, +/-10%, X5R, 0402	MuRata	GRM155R61C102KA01D	2
D1, D2	Diode, Zener, 5.1V, 300mW, SOD-523	Diodes Inc.	BZT52C5V1T-7	2
FID4, FID5, FID6	Fiducial mark. There is nothing to buy or mount.	N/A	N/A	3
H1, H2, H3, H4	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	B&F Fastener Supply	NY PMS 440 0025 PH	4
H5, H6, H7, H8	Standoff, Hex, 0.5"L #4-40 Nylon	Keystone	1902C	4
J1, J2, J3, J5, J6, J7, J8, J9, J10, J15	TERMINAL BLOCK 5.08MM VERT 2POS, TH	On-Shore Technology	ED120/2DS	10
J4	Header, 100mil, 5x2, Tin plated, TH	Sullins Connector Solutions	PEC05DAAN	1
J11, J12	Standard Banana Jack, Uninsulated	Keystone	6095	2
J13, J14	Lug, Copper, 35A,	Panduit	CX35-36-CY	2
L1, L2	Inductor, Shielded Drum Core, Ferrite, 330nH, 27A, 0.00037 ohm, SMD	Würth Elektronik eiSos	744308033	2
LBL1	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	1

Designator	Description	Manufacturer	PartNumber	Quantity
Q1, Q2	Synchronous Buck NexFET Power Stage, NexFET Q5M	Texas Instruments	CSD95378B	2
R1	RES, 8.45k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06038K45FKEA	1
R2, R8, R15, R40, R46, R53, R60, R67, R74, R81, R91, R95, R125	RES, 49.9 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060349R9FKEA	13
R3	RES, 2.15k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K15FKEA	1
R4, R76	RES, 261k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603261KFKEA	2
R5, R12, R19, R47, R57, R64, R71, R77	RES, 0.005 ohm, 1%, 2W, 1224	Ohmite	LVK25R005FER	8
R6, R21, R22, R24, R26, R82, R110, R111, R113, R115	RES, 1.00k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K00FKEA	10
R7, R52, R73	RES, 9.31k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06039K31FKEA	3
R9, R54	RES, 2.87k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K87FKEA	2
R10, R17, R55, R62, R69	RES, 324k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603324KFKEA	5
R13, R58, R65	RES, 499 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603499RFKEA	3
R14, R59, R66	RES, 6.81k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06036K81FKEA	3
R16, R61, R68	RES, 1.13k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K13FKEA	3
R20	RES, 249 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603249RFKEA	1
R23	RES, 41.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060341K2FKEA	1
R25, R114	RES, 90.9k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060390K9FKEA	2
R27, R116, R132, R133, R134, R138, R139, R140	RES, 10k ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW040210K0JNED	8
R28, R29, R30, R31, R39, R86, R96, R99, R117, R118, R119, R120, R135, R136, R141, R142	RES, 10.0k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310K0FKEA	16
R32, R33, R34	RES, 2.21k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K21FKEA	3
R35	RES, 2.80k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K80FKEA	1
R36, R37, R123	RES, 3.24k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06033K24FKEA	3

Designator	Description	Manufacturer	PartNumber	Quantity
R38, R51, R121, R124	RES, 2.55k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K55FKEA	4
R41	RES, 453 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603453RFKEA	1
R42	RES, 158k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603158KFKEA	1
R43, R128	RES, 68.1k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060368K1FKEA	2
R45, R130	RES, 12.1k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060312K1FKEA	2
R48	RES, 4.75k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06034K75FKEA	1
R49	RES, 715 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603715RFKEA	1
R50	RES, 169k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603169KFKEA	1
R72	RES, 750 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603750RFKEA	1
R75	RES, 2.43k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06032K43FKEA	1
R78	RES, 1.24k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K24FKEA	1
R79	RES, 10.0k ohm, 0.1%, 0.1W, 0603	Susumu Co Ltd	RG1608P-103-B-T5	1
R80, R83, R98, R101	RES, 0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04020000Z0ED	4
R84, R100	RES, 8.06k ohm, 1%, 0.063W, 0402	Vishay-Dale	CRCW04028K06FKED	2
R85	RES, 16.9k ohm, 0.1%, 0.1W, 0603	Yageo America	RT0603BRD0716K9L	1
R87, R88, R97, R102, R103	RES, 0 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW06030000Z0EA	5
R89, R107	RES, 121k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603121KFKEA	2
R92	RES, 40.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060340K2FKEA	1
R93, R94, R108, R109	RES, 10.0 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060310R0FKEA	4
R105	RES, 16.2k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060316K2FKEA	1
R106	RES, 25.5k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060325K5FKEA	1
R112	RES, 53.6k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW060353K6FKEA	1
R122	RES, 1.62k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW06031K62FKEA	1
R126	RES, 267 ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603267RFKEA	1
R127	RES, 105k ohm, 1%, 0.1W, 0603	Vishay-Dale	CRCW0603105KFKEA	1
R131, R137	RES, 1.0 ohm, 5%, 0.063W, 0402	Vishay-Dale	CRCW04021R00JNED	2
TP1, TP6, TP11, TP19, TP26, TP31, TP36, TP41, TP65, TP69	Test Point, Multipurpose, Orange, TH	Keystone	5013	10
TP2, TP3, TP7, TP8, TP12, TP13, TP20, TP23, TP24, TP27, TP28, TP32, TP33, TP37, TP38, TP42, TP43, TP66	Test Point, Multipurpose, Red, TH	Keystone	5010	18

Designator	Description	Manufacturer	PartNumber	Quantity
TP4, TP9, TP14, TP16, TP21, TP29, TP34, TP39, TP44, TP49, TP50, TP52, TP59, TP60, TP61, TP67	Test Point, Miniature, White, TH	Keystone	5002	16
TP5, TP10, TP15, TP22, TP25, TP30, TP35, TP40, TP45, TP68	Test Point, Multipurpose, Black, TH	Keystone	5011	10
TP17, TP46, TP48, TP53, TP62, TP63	Test Point, Miniature, Red, TH	Keystone	5000	6
TP18, TP47, TP51, TP55, TP56, TP57, TP58	Test Point, Miniature, Black, TH	Keystone	5001	7
TP54, TP64	Test Point, Miniature, SMT	Keystone	5015	2
U1, U17	6A SIMPLE SWITCHER Power Module with 2.95V-14.5V Input and Current Sharing in QFN Package, RUQ0047A	Texas Instruments	LMZ31506RUQ	2
U2, U4, U6, U10, U12, U14, U16, U18	Micro-Power (50mA), Zero-Drift, Rail-to-Rail Out Instrumentation Amplifier	Texas Instruments	INA333AIDGK	8
U3, U5, U8, U11, U13, U15, U21	3A SIMPLE SWITCHER Power Module with 4.5V-14.5V Input in QFN Package, RUQ0047A	Texas Instruments	LMZ31503RUQ	7
U7, U20	IC, Digital PWM System Controller	TI	UCD90120ARGC	2
U9	10A SIMPLE SWITCHER Power Module with 2.95V-17V Input and Current Sharing in QFN Package, RVQ0042A	Texas Instruments	LMZ31710RVQ	1
U19	Dual output, 2 phase, stackable PMBUS synchronous buck driverless controller, RHA0040B	Texas Instruments	TPS40428RHA	1

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