

Design: TIDA-00223: Automotive Audio I2S over Coax Class D Amplifier
 Project: SAT0084 E1.1
 Variant: COAX
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FPD-Link III Class-D Amplifier

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
!PCB1	1		Printed Circuit Board		SAT0084	Any	-	-
C1, C2, C3, C5, C18, C19, C24, C25, C43, C59, C61, C68, C71, C74, C77, C88, C96, C101, C105, C107, C112, C114, C116, C119, C127, C128	26	0.1uF	CAP, CERM, 0.1uF, 10V, +/-10%, X7R, 0402	0402	GRM155R71A104KA01D	MuRata		
C4, C87, C131	3	10uF	CAP, CERM, 10uF, 10V, +/-10%, X7R, 0805	0805	GRM21BR71A106KE51L	MuRata		
C6, C7, C8, C9	4	330uF	CAP, AL, 330uF, 50V, +/-20%, 0.12 ohm, SMD	SMT Radial H13	EEV-FK1H331Q	Panasonic		
C10, C11, C92, C98	4	4.7uF	CAP, CERM, 4.7uF, 50V, +/-10%, X7R, 1206	1206	GRM31CR71H475KA12L	MuRata		
C12	1	0.082uF	CAP, CERM, 0.082uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H823KA93D	MuRata		
C13	1	2200pF	CAP, CERM, 2200pF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H222KA01D	MuRata		
C14, C15, C16, C17	4	1uF	CAP, CERM, 1uF, 25V, +/-10%, X7R, 0603	0603	GRM188R71E105KA12D	MuRata		
C20, C21, C89	3	2200pF	CAP, CERM, 2200pF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C222KA01D	MuRata		
C22, C23, C102	3	2.2uF	CAP, CERM, 2.2uF, 10V, +/-10%, X7R, 0603	0603	GRM188R71A225KE15D	MuRata		
C26, C30	2	1uF	CAP, CERM, 1uF, 50V, +/-10%, X7R, 0805	0805	GRM21BR71H105KA12L	MuRata		
C27, C32, C36, C40, C44, C48, C51, C55	8	1000pF	CAP, CERM, 1000pF, 50V, +/-5%, X7R, 0603	0603	C0603C102J5RACTU	Kemet		
C28, C31, C33, C37, C39, C41, C45, C47, C49, C52, C54, C56	12	0.47uF	CAP, CERM, 0.47uF, 50V, +/-10%, X7R, 0805	0805	GRM21BR71H474KA88L	MuRata		
C29, C34, C38, C42, C46, C50, C53, C57	8	0.01uF	CAP, CERM, 0.01uF, 50V, +/-5%, X7R, 0603	0603	C0603C103J5RACTU	Kemet		
C35	1	0.22uF	CAP, CERM, 0.22uF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C224KA12D	MuRata		
C58, C62, C67, C69, C70, C72, C73, C76, C99, C103, C104, C108, C113, C115, C118	15	0.01uF	CAP, CERM, 0.01uF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C103KA01D	MuRata		
C60, C64, C66, C75, C106, C117, C132	7	4.7uF	CAP, CERM, 4.7uF, 16V, +/-10%, X7R, 0805	0805	GRM21BR71C475KA73L	MuRata		
C63, C65	2	0.1uF	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C104KA88D	MuRata		
C78, C91, C100, C120	4	22uF	CAP, CERM, 22uF, 10V, +/-10%, X7R, 1206	1206	GRM31CR71A226KE15L	MuRata		
C80, C81	2	0.1uF	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0402	0402	C1005X7R1H104K050BB	TDK		
C82, C122	2	0.1uF	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H104KA93D	MuRata		
C86, C126	2	0.047uF	CAP, CERM, 0.047uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H473KA61D	MuRata		
C90	1	1uF	CAP, CERM, 1uF, 100V, +/-10%, X7R, 1206	1206	GRM31CR72A105KA01L	MuRata		
C93	1	150pF	CAP, CERM, 150pF, 50V, +/-5%, COG/NPO, 0603	0603	GRM1885C1H151JA01D	MuRata		
C94	1	0.015uF	CAP, CERM, 0.015uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H153KA01D	MuRata		
C95	1	1uF	CAP, CERM, 1uF, 16V, +/-10%, X7R, 0603	0603	C1608X7R1C105K	TDK		
C97	1	0.022uF	CAP, CERM, 0.022uF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C223KA01D	MuRata		
C130	1	0.1uF	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	0603	GCM188R71H104KA57D	MuRata		
D1	1	Orange	LED, Orange, SMD	Orange LED	SML-P12D86	Rohm		
D2, D4, D6, D7, D10	5	Yellow/green	LED, Yellow/green, SMD	0402 LED	SML-P12MT86	Rohm		
D3, D5	2	60V	Diode, Schottky, 60V, 1A, SMA	SMA	MBRA160T3G	ON Semiconductor		
D8	1	Blue	LED, Blue, SMD	Blue LED	SMLP12BC7T86	Rohm		
D9	1	30V	Diode, Schottky, 30V, 0.2A, SOT-23	SOT-23	BAT54S-7-F	Diodes Inc.		
H1, H2, H3, H4	4		Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	Screw	NY PMS 440 0025 PH	B&F Fastener Supply	-	-
H5, H6, H7, H8	4		Standoff, Hex, 1 1/16"L #4-40 Nylon	Standoff	4805	Keystone	-	-
H9	1		Heatsink, requires 2 M3 screw Mounting hole per rails	Heatsink, 36x33x90mm	HEATSINK_V5583K	Assman WSW		
H10, H11, H12, H13	4		MACHINE SCREW PAN PHILLIPS M3 10mm	Screw M3 Phillips head	RM3X10MM 2701	APM Hexseal		
H14, H15, H16, H17	4		ROUND SPACER M3 PVC 1.4MM	Standoff	SRS-4-055	Bivar	-	-
H18	1		White silicone heatsink grease for U2	Used in PnP output	Any available	Any	-	-
J1, J2, J18, J20	4	50A	Terminal 50A Lug	CB35-36-CY	CB35-36-CY	Panduit	-	-
J3, J8, J10	3		Header, 8x2, 1.27mm	Header, 8x2, 1.27mm, SMT	FTS-108-02-L-DV	Samtec		
J4	1		Connector, Audio Jack, 3.5mm, Stereo, SMD	Audio Jack SMD	SJ-3523-SMT	CUI Inc.		
J5, J13, J16, J19	4		Header, 4x2, 1.27mm	Header, 4x2, 1.27mm, SMT	FTS-104-02-L-DV	Samtec		
J6	1		Header, TH, 100mil, 5x1, Gold plated, 230 mil above insulator	5x1 Header	TSW-105-07-G-S	Samtec		
J7, J9, J11, J12	4		Connector, Banana Jack, Double, Black Base, 15A, TH	1380x1220x630	6883	Pomona Electronics		
J14, J23	2		RIGHT ANGLE PLUG FOR PCB	16.6x11.6x8.5mm	59S20X-400L5-Y	Rosenberger		
J15, J25	2		Connector, Receptacle, Mini-USB 2.0, Type AB, R/A, SMT	9.2x9.9x4 mm	651-305-142-821	Würth Elektronik eiSos		
J17	1		Header (shrouded), 100 mil, 7x2, Gold plated, TH	7x2 Shrouded Header	SBH11-PBPC-D07-ST-BK	Sullins Connector Solutions		
J21	1		Header, 100mil, 3x1, Tin plated, TH	Header, 3 PIN, 100mil, Tin	PEC03SAAN	Sullins Connector Solutions		
J22	1		Header, 24x2, 1.27mm	Header, 24x2, 1.27mm, SMT	FTS-124-01-L-DV	Samtec		
J24, J27	2		Header, TH, 100mil, 2x1, Gold plated, 230 mil above insulator	2x1 Header	TSW-102-07-G-S	Samtec		
J26	1		Double Compliant Coax Assembly		CCH-J-02	Samtec		
L1	1	10uH	Inductor, Shielded E Core, Ferrite, 10uH, 7.2A, 0.01 ohm, SMD	SER1360	SER1360-103KLB	Coilcraft		
L2, L3, L4, L5	4	10uH	Inductor, Shielded, Ferrite, 10uH, 3A, 0.022 ohm, SMD	Inductor, 14.3x10.5x13.3mm	1155EA-0001	Toko		
L6, L7, L8, L16, L17	5	1k@100MHz	Ferrite Chip, 400 mA, ±25%	0603	BLM18AG102SN1	MuRata		
L9, L18	2	100uH	Inductor, Shielded Drum Core, Ferrite, 100uH, 0.7A, 0.28 ohm, SMD	MSS7341	MSS7341T-104MLB	Coilcraft		
L10, L19	2	5.6uH	Inductor, 5.6uH, 1.5A, 0.36 ohm, SMD	0.11x0.09 inch	1008PS-562KL	Coilcraft		
L11, L20	2	165uH	Inductor, Wirewound, Ferrite, 165uH, 0.65A, 0.46 ohm, SMD	6.77x4.45x6.48mm	KA4909-AL	Coilcraft		
L12, L21	2		Coupled inductor, 0.3A, 0.4 ohm, +/-25%, SMD	Inductor, 1.2x1.2x2.0 mm	DLW21SN261SQ2L	MuRata		
L13	1	68uH	Coupled inductor, 68uH, 1.35A, 0.2 ohm, +/-20%, SMD	PF055X	PF0552.683NL	Pulse Engineering		
L14	1	10uH	Inductor, Shielded, Ferrite, 10uH, 1.05A, 0.083 ohm, SMD	5.0x2.5x5.0mm	VLCF5028T-100M1R0-2	TDK		
LBL1	1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	PCB Label 0.650"H x 0.200"W	THT-14-423-10	Brady	-	-
R1, R2, R4, R5, R6, R19, R20, R25, R32, R43, R48, R54, R59, R74, R92, R107	16	10k	RES, 10k ohm, 5%, 0.063W, 0402	0402	CRCW040210K0JNED	Vishay-Dale		
R3	1	133	RES, 133 ohm, 1%, 0.063W, 0402	0402	CRCW0402133RKFED	Vishay-Dale		
R7, R8	2	470	RES, 470 ohm, 5%, 0.063W, 0402	0402	CRCW0402470RJNED	Vishay-Dale		
R9	1	20k	RES, 20k ohm, 5%, 0.063W, 0402	0402	CRCW040220K0JNED	Vishay-Dale		
R10, R21, R22, R41	4	47k	RES, 47k ohm, 5%, 0.063W, 0402	0402	CRCW040247K0JNED	Vishay-Dale		
R11, R12, R13, R14, R15, R16, R17, R18	8	5.60	RES, 5.60 ohm, 1%, 0.33W, 0805	0805	RL1220S-5.6-F	Susumu Co Ltd		
R23, R24, R72, R73	4	4.7k	RES, 4.7k ohm, 5%, 0.063W, 0402	0402	CRCW04024K70JNED	Vishay-Dale		
R27, R28	2	220	RES, 220 ohm, 5%, 0.063W, 0402	0402	CRCW0402220RJNED	Vishay-Dale		
R29, R30, R86, R87	4	1.0k	RES, 1.0k ohm, 5%, 0.1W, 0603	0603	CRCW06031K00JNEA	Vishay-Dale		
R31, R44, R45, R58, R64, R65, R88, R108	8	0	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		
R34	1	475	RES, 475 ohm, 1%, 0.063W, 0402	0402	CRCW0402475RKFED	Vishay-Dale		
R35, R62, R66, R67	4	365	RES, 365 ohm, 1%, 0.063W, 0402	0402	CRCW0402365RKFED	Vishay-Dale		

Designator	Quantity	Value	Description	PackageReference	PartNumber	Manufacturer	Alternate PartNumber	Alternate Manufacturer
R36, R89, R97, R99	4	10.0k	RES, 10.0k ohm, 1%, 0.063W, 0402	0402	CRCW040210K0FKED	Vishay-Dale		
R38, R91	2	0	RES, 0 ohm, 5%, 0.063W, 0402	0402	CRCW04020000Z0ED	Vishay-Dale		
R39	1	11.0k	RES, 11.0k ohm, 1%, 0.063W, 0402	0402	CRCW040211K0FKED	Vishay-Dale		
R40, R47, R96	3	49.9	RES, 49.9 ohm, 1%, 0.063W, 0402	0402	CRCW040249R9FKED	Vishay-Dale		
R46	1	1.0	RES, 1.0 ohm, 5%, 0.1W, 0603	0603	CRCW06031R00JNEA	Vishay-Dale		
R49	1	1.96k	RES, 1.96k ohm, 1%, 0.063W, 0402	0402	CRCW04021K96FKED	Vishay-Dale		
R50	1	11.5k	RES, 11.5k ohm, 1%, 0.1W, 0603	0603	CRCW060311K5FKEA	Vishay-Dale		
R51, R63	2	9.76k	RES, 9.76k ohm, 1%, 0.063W, 0402	0402	CRCW04029K76FKED	Vishay-Dale		
R52	1	1.82k	RES, 1.82k ohm, 1%, 0.063W, 0402	0402	CRCW04021K82FKED	Vishay-Dale		
R53	1	28.0k	RES, 28.0k ohm, 1%, 0.063W, 0402	0402	CRCW040228K0FKED	Vishay-Dale		
R56	1	44.2k	RES, 44.2k ohm, 1%, 0.063W, 0402	0402	CRCW040244K2FKED	Vishay-Dale		
R57, R94	2	100k	RES, 100k ohm, 5%, 0.063W, 0402	0402	CRCW0402100KJNED	Vishay-Dale		
R60	1	3.16k	RES, 3.16k ohm, 1%, 0.063W, 0402	0402	CRCW04023K16FKED	Vishay-Dale		
R61	1	0.39	RES, 0.39 ohm, 1%, 0.125W, 0402	0402	ERJ-2BQFR39X	Panasonic		
R90	1	2.00k	RES, 2.00k ohm, 1%, 0.063W, 0402	0402	CRCW04022K00FKED	Vishay-Dale		
R98	1	5.36k	RES, 5.36k ohm, 1%, 0.063W, 0402	0402	CRCW04025K36FKED	Vishay-Dale		
R100	1	18.7k	RES, 18.7k ohm, 1%, 0.063W, 0402	0402	CRCW040218K7FKED	Vishay-Dale		
R103, R105	2	100k	RES, 100k ohm, 1%, 0.063W, 0402	0402	CRCW0402100KFKED	Vishay-Dale		
R104	1	3.01k	RES, 3.01k ohm, 1%, 0.063W, 0402	0402	CRCW04023K01FKED	Vishay-Dale		
R106	1	14.0k	RES, 14.0k ohm, 1%, 0.063W, 0402	0402	CRCW040214K0FKED	Vishay-Dale		
S1, S5	2		Switch, Push Button, SMD	2.9x2x3.9mm SMD	SKRKAEE010	Alps		
SH-J3, SH-J5, SH-J8, SH-J10, SH-J13, SH-J16, SH-J19, SH-J22a, SH-J22b, SH-J22c, SH-J22d, SH-J22e, SH-J22f, SH-J22g, SH-J22h, SH-J22i, SH-J22j, SH-J22k, SH-J22l, SH-J22m, SH-J22n, SH-J22o, SH-J22p, SH-J22q, SH-J22r, SH-J22s, SH-J22t, SH-J22u, SH-J22v, SH-J22w, SH-J22x	31		CONN JUMPER SHORTING 1.27MM GOLD		NPB02SVFN-RC	Sullins Connector Solutions		
SH-J21, SH-J24, SH-J27	3	1x2	Shunt, 100mil, Gold plated, Black	Shunt	969102-0000-DA	3M	SNT-100-BK-G	Samtec
TP1, TP10, TP11, TP15, TP16, TP18, TP19	7	Red	Test Point, Compact, Red, TH	Red Compact Testpoint	5005	Keystone		
TP2, TP3, TP4, TP9, TP14, TP17, TP41, TP48	8	Black	Test Point, Compact, Black, TH	Black Compact Testpoint	5006	Keystone		
TP5, TP6, TP7, TP8, TP23, TP24, TP37, TP38, TP54, TP55	10	White	Test Point, Compact, White, TH	White Compact Testpoint	5007	Keystone		
TP12	1	Yellow	Test Point, Compact, Yellow, TH	Yellow Compact Testpoint	5009	Keystone		
TP13	1	Orange	Test Point, Compact, Orange, TH	Orange Compact Testpoint	5008	Keystone		
U1	1	PCM5102A	2-VRMS DirectPath™, 112, 106, 100-dB Audio Stereo DAC with 32-bit, 384-kHz PCM Interface, PW0020A	PW0020A	PCM5102AQPWRQ1	Texas Instruments		None
U2	1		There is nothing to buy or mount.			TI		
U3	1		IC SER/DESER 10-50MHZ 8B 48-WQFN		DS90UA102TRHSRQ1	Texas Instruments		
U6	1		MSP430F22x2 Automotive Mixed-Signal Microcontrollers		MSP430F2252TRHARQ1	Texas Instruments		
U7	1		LM5001x High-Voltage Switch-Mode Regulator		LM5001IDRQ1	Texas Instruments		
U8	1		LM34919C Ultra Small 42V, 600 mA Constant On-Time Buck Switching Regulator, DNT0012B	DNT0012B	LM34919CQSD	Texas Instruments		None
U9	1		LDO Voltage Regulators Ultra Lo Noise Hi PSRR Fast RF 200mA	SOT-5	TPS79318DBVRQ1	Texas Instruments		
U10	1		Multi-Channel Digital Audio Link, RTV0032A	RTV0032A	DS90UA101TRTVTQ1	Texas Instruments		None
U13	1		Ultra-Low Quiescent Current LDO Voltage Regulator, 8-pin Mini SOIC, Pb-Free	MUA08A	LM2936QMM-3.3/NOPB	Texas Instruments		
U14	1		IC BUS BUFF GATE 3ST SGL SC70-5	6-TSSOP (5 Lead), SC-88A, SOT-353	CAHCT1G125QDCKRQ1	Texas Instruments		
C84, C85, C124, C125	0	0.1uF	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	0603	GRM188R71H104KA93D	MuRata		
C109, C110, C111	0	1uF	CAP, CERM, 1uF, 10V, +/-10%, X7R, 0603	0603	GRM188R71A105KA61D	MuRata		
C129	0	0.33uF	CAP, CERM, 0.33uF, 16V, +/-10%, X7R, 0603	0603	GRM188R71C334KA01D	MuRata		
FID1, FID2, FID3, FID4, FID5, FID6	0		Fiducial mark. There is nothing to buy or mount.	Fiducial	N/A	N/A		
R26	0	220	RES, 220 ohm, 5%, 0.063W, 0402	0402	CRCW0402220RJNED	Vishay-Dale		
R33, R37, R93, R95	0	0	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		

Notes:

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