

TIDA-01576_ADS8686S_AFE REV E1 Bill of Materials

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
C1, C4	2	0.022uF	C0603C223K4RACTU	Kemet	CAP, CERM, 0.022 μ F, 16 V, +/- 10%, X7R, 0603	0603
C2, C3	2	22uF	EMK316BB7226ML-T	Taiyo Yuden	CAP, CERM, 22 μ F, 16 V, +/- 20%, X7R, 1206	1206
C5	1	1uF	GRM31CR72A105KA01L	MuRata	CAP, CERM, 1 μ F, 100 V, +/- 10%, X7R, 1206	1206
C6	1	2.2uF	GRM32ER72A225KA35L	MuRata	CAP, CERM, 2.2 μ F, 100 V, +/- 10%, X7R, 1210	1210
C7	1	0.022uF	GRM188R71C223KA01D	MuRata	CAP, CERM, 0.022 μ F, 16 V, +/- 10%, X7R, 0603	0603
C8, C9	2	10uF	GRM32ER71J106KA12L	MuRata	CAP, CERM, 10 μ F, 63 V, +/- 10%, X7R, 1210	1210
C10, C16, C17, C61, C64, C86, C88, C90	8	0.1uF	06033C104JAT2A	AVX	CAP, CERM, 0.1uF, 25V, +/-5%, X7R, 0603	0603
C11	1	0.022uF	C0603C223K3RACTU	Kemet	CAP, CERM, 0.022uF, 25V, +/-10%, X7R, 0603	0603
C12, C14	2	10uF	C0603C106M9PACTU	Kemet	CAP, CERM, 10 μ F, 6.3 V, +/- 20%, X5R, 0603	0603
C13	1	0.1uF	C0603C104K5RACTU	Kemet	CAP, CERM, 0.1uF, 50V, +/-10%, X7R, 0603	0603
C15, C44, C48	3	2.2uF	C0805C225K8RACTU	Kemet	CAP, CERM, 2.2uF, 10V, +/-10%, X7R, 0805	0805
C18, C89, C91	3	0.01uF	C1608C0G1E103J080AA	TDK	CAP, CERM, 0.01uF, 25V, +/-5%, C0G/NP0, 0603	0603
C21	1	4.7uF	293D475X9025C2TE3	Vishay-Sprague	CAP, TA, 4.7 μ F, 25 V, +/- 10%, 2 ohm, SMD	6032-28
C22, C23, C24, C25, C32, C34, C35, C36, C37	9	4.7uF	C3216X7R1E475M160AC	TDK	CAP, CERM, 4.7 μ F, 25 V, +/- 20%, X7R, 1206	1206
C26, C29, C31, C38, C43, C47, C49	7	0.01uF	GRM188R70J103KA01D	MuRata	CAP, CERM, 0.01 μ F, 6.3 V, +/- 10%, X7R, 0603	0603
C27	1	0.22uF	C0603C224K9RACTU	Kemet	CAP, CERM, 0.22 μ F, 6.3 V, +/- 10%, X7R, 0603	0603
C28, C30	2	10pF	C0603C100J5GACTU	Kemet	CAP, CERM, 10 pF, 50 V, +/- 5%, C0G/NP0, 0603	0603
C33, C42, C45, C51, C55, C58	6	1uF	GRM188R61E105KA12D	MuRata	CAP, CERM, 1 μ F, 25 V, +/- 10%, X5R, 0603	0603
C39, C53, C67, C68, C74, C76, C77, C84	8	1uF	GRM188R61C105KA93D	Murata	CAP, CERM, 1 μ F, 16 V, +/- 10%, X5R, 0603	0603
C40, C52, C69, C70, C73, C75, C78, C83	8	0.1uF	CGA3E2X8R1E104K080AA	TDK	CAP, CERM, 0.1 μ F, 25 V, +/- 10%, X8R, AEC-Q200 Grade 0, 0603	0603
C41, C50, C54, C56	4	10uF	GMK325AB7106MM-T	Taiyo Yuden	CAP, CERM, 10uF, 35V, +/-20%, X7R, 1210	1210
C46, C57, C59, C60, C62, C63, C71, C72, C82, C85, C87	11	100pF	06033C101KAT2A	AVX	CAP, CERM, 100pF, 25V, +/-10%, X7R, 0603	0603
C65, C66	2	1000pF	C1608C0G1H102J080AA	TDK	CAP, CERM, 1000pF, 50V, +/-5%, C0G/NP0, 0603	0603
C79, C81	2	1000pF	C0603X102K5RACTU	Kemet	CAP, CERM, 1000 pF, 50 V, +/- 10%, X7R, 0603	0603
C80	1	0.01uF	06031C103KAT2A	AVX	10000pF 100V Ceramic Capacitor X7R 0603	0603
D1	1	5.1V	MMSZ5231B-7-F	Diodes Inc.	Diode, Zener, 5.1 V, 500 mW, SOD-123	SOD-123
D2, D5	2	20V	MBRM120ET1G	ON Semiconductor	Diode, Schottky, 20 V, 1 A, POWERMITE	POWERMITE
D3, D4	2	15V	DZ2W15000L	Panasonic	Diode, Zener, 15V, 1W, SOD-123	SOD-123
D6, D7, D8	3	12V	PESD12VL1BA,115	NXP Semiconductor	TVS DIODE 12VWM 37VC SOD323	SOD323
D9, D10	2	100V	BAV19WS-7-F	Diodes Inc.	Diode, Switching, 100 V, 0.2 A, SOD-323	SOD-323

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
J1, J2	2		PBC02SAAN	Sullins Connector Solutions	Header, 100mil, 2x1, Gold, TH	Sullins 100mil, 1x2, 230 mil above insulator
J3	1		282841-2	TE Connectivity	Terminal Block, 2x1, 5.08mm, TH	10.16x15.2x9mm
J4, J9, J12, J13	4		ED120/2DS	On-Shore Technology	TERMINAL BLOCK 5.08MM VERT 2POS, TH	TERM_BLK, 2pos, 5.08mm
J5, J7, JP1, JP2, JP3	5		5-146280-2	TE Connectivity	Header, 100mil, 2x1, Gold, TH	2x1 Header
J6, J8	2		OSTVN02A150	On Shore Technology Inc	Terminal Block, 4x1, 2.54mm, TH	TERM_BLK, 2pos, 2.54mm
J10, J11	2		1803332	Phoenix Contact	Header(shrouded), 3.81mm, 8x1, Tin, R/A, TH	Header(shrouded), 3.81mm, 8x1, R/A, TH
J14, J15	2		PEC02SAAN	Sullins Connector Solutions	Header, 100mil, 2x1, Tin, TH	Header, 2 PIN, 100mil, Tin
L1, L2	2	4.7uH	VLF504012MT-4R7M	TDK	Inductor, Shielded, Ferrite, 4.7uH, 1.83A, 0.1 ohm, SMD	IND 5x1.2x4mm
L3, L4, L5, L6, L7, L8	6	21 ohm@100 Mhz	FBMJ2125HM210NT	Taiyo Yuden	Ferrite Bead, 21 ohm @ 100 MHz, 6 A, 0805	0805
MH1, MH2, MH3, MH4, MH5	5				Mountin hole, NPTH Drill 3.2mm	Screw
Q1	1	60V	CSD18534Q5A	Texas Instruments	MOSFET, N-CH, 60 V, 50 A, DQJ0008A (VSONP-8)	DQJ0008A
R1	1	49.9k	CRCW060349K9FKEA	Vishay-Dale	RES, 49.9 k, 1%, 0.1 W, 0603	0603
R2	1	5.62k	RC0603FR-075K62L	Yageo America	RES, 5.62 k, 1%, 0.1 W, 0603	0603
R3	1	887k	CRCW0603887KFKEA	Vishay-Dale	RES, 887 k, 1%, 0.1 W, 0603	0603
R4	1	68.1k	CRCW120668K1FKEA	Vishay-Dale	RES, 68.1 k, 1%, 0.25 W, 1206	1206
R5	1	61.9k	RC1206FR-0761K9L	Yageo America	RES, 61.9 k, 1%, 0.25 W, 1206	1206
R6	1	1.07k	ERA-3AEB1071V	Panasonic	RES SMD 1.07KOHM 0.1% 1/10W 0603	0603
R7	1	29.4k	CRCW060329K4FKEA	Vishay-Dale	RES, 29.4 k, 1%, 0.1 W, 0603	0603
R8	1	11.8k	CRCW120611K8FKEA	Vishay-Dale	RES, 11.8 k, 1%, 0.25 W, 1206	1206
R9	1	34.0k	CRCW060334K0FKEA	Vishay-Dale	RES, 34.0 k, 1%, 0.1 W, 0603	0603
R12	1	26.7k	CRCW060326K7FKEA	Vishay-Dale	RES, 26.7 k, 1%, 0.1 W, 0603	0603
R15, R16	2	499	CRCW0402499RFKED	Vishay-Dale	RES, 499 ohm, 1%, 0.063W, 0402	0402
R17	1	2.00k	CRCW04022K00FKED	Vishay-Dale	RES, 2.00 k, 1%, 0.063 W, 0402	0402
R18, R20, R23	3	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0 ohm, 5%, 0.1W, 0603	0603
R19	1	0.5	RL1220S-R50-F	Susumu Co Ltd	RES, 0.5, 1%, 0.33 W, 0805	0805
R21, R22, R43, R83	4	8.06k	RG1608P-8061-B-T5	Susumu Co Ltd	RES, 8.06 k, 0.1%, 0.1 W, 0603	0603
R24, R25, R66, R68, R87, R88	6	0	RC0603JR-070RL	Yageo America	RES, 0, 5%, 0.1 W, 0603	0603
R26	1	0	CRCW12060000Z0EA	Vishay-Dale	RES, 0 ohm, 5%, 0.25W, 1206	1206
R27, R30, R32, R38, R39, R44, R47, R49	8	0	CRCW06030000Z0EA	Vishay-Dale	RES, 0, 5%, 0.1 W, 0603	0603
R28	1	576k	CRCW0603576KFKEA	Vishay-Dale	RES, 576 k, 1%, 0.1 W, 0603	0603
R29, R33, R34	3	49.9k	RG1608P-4992-B-T5	Susumu Co Ltd	RES, 49.9 k, 0.1%, 0.1 W, 0603	0603
R31	1	620k	CRCW0603620KFKEA	Vishay-Dale	RES SMD 620K OHM 1% 1/10W 0603	0603
R35	1	1.00	CR0603-J/-1R0ELF	Bourns inc	RES SMD 1 OHM 5% 1/10W 0603	0603
R36	1	1.0k	CRCW06031K00JNEA	Vishay-Dale	RES, 1.0 k, 5%, 0.1 W, 0603	0603
R37	1	0	CRCW08050000Z0EA	Vishay-Dale	RES, 0 ohm, 5%, 0.125W, 0805	0805
R40, R56, R59, R62, R63	5	10.0k	RG1608P-103-B-T5	Susumu Co Ltd	RES, 10.0 k, 0.1%, 0.1 W, 0603	0603
R41, R45	2	249k	CRCW0603249KFKEA	Vishay-Dale	RES, 249 k, 1%, 0.1 W, 0603	0603

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
R42, R50, R58, R60, R75, R76, R81, R92	8	100	RG1608P-101-B-T5	Susumu Co Ltd	RES, 100, 0.1%, 0.1 W, 0603	0603
R46	1	27.0k	RC0603FR-0727KL	Yageo America	RES, 27.0 k, 1%, 0.1 W, 0603	0603
R48	1	24.0k	RC0603FR-0724KL	Yageo America	RES, 24.0 k, 1%, 0.1 W, 0603	0603
R51, R53, R64, R67	4	68.0k	RG1608P-683-B-T5	Susumu Co Ltd	RES, 68.0 k, 0.1%, 0.1 W, 0603	0603
R52, R54, R55, R57, R61, R65	6	330k	TNPV1206330KBEEN	Vishay Draloric	RES, 330 k, 0.1%, 1 W, 1206	1206
R71, R73	2	3.92k	RG1608P-3921-B-T5	Susumu Co Ltd	RES, 3.92 k, 0.1%, 0.1 W, 0603	0603
R72, R74	2	30.1k	RG1608P-3012-B-T5	Susumu Co Ltd	RES, 30.1 k, 0.1%, 0.1 W, 0603	0603
R79, R86	2	249	RT0603BRD07249RL	Yageo America	RES, 249, 0.1%, 0.1 W, 0603	0603
R80, R85, R95	3	100k	RG1608P-104-B-T5	Susumu Co Ltd	RES, 100 k, 0.1%, 0.1 W, 0603	0603
R82	1	169	RC0603FR-07169RL	Yageo America	RES, 169, 1%, 0.1 W, 0603	0603
R84	1	15.0	CPF-A-0603B15RE	TE Connectivity	RES, 15.0, 0.1%, 0.063 W, AEC-Q200 Grade 0, 0603	0603
R89	1	82.0k	RG1608P-823-B-T5	Susumu Co Ltd	RES, 82.0 k, 0.1%, 0.1 W, 0603	0603
R90, R93	2	8.20k	RG1608P-822-B-T5	Susumu Co Ltd	RES, 8.20 k, 0.1%, 0.1 W, 0603	0603
R91, R102	2	1.00Meg	CRCW06031M00FKEA	Vishay-Dale	RES, 1.00Meg ohm, 1%, 0.1W, 0603	0603
R96, R99, R103, R106	4	10k	CRCW060310K0FKEA	Stackpole Electronics Inc	RES, 10.0k ohm, 1%, 0.1W, 0603	0603
R97, R104	2	10.0k	CRCW060310K0FKEA	Vishay-Dale	RES, 10.0k ohm, 1%, 0.1W, 0603	0603
R98, R101, R105	3	100	CRCW0603100RFKEA	Vishay-Dale	RES, 100 ohm, 1%, 0.1W, 0603	0603
R100, R107	2	470	RC1206FR-07470RL	Yageo America	RES, 470, 1%, 0.25 W, 1206	1206
S1	1		PTS820 J20M SMTR LFS	C&K Components	Switch, SPST-NO, Off-Mom, 0.05A, 12VDC, SMD	3.9x2.9mm
SH-J1, SH-J2, SH-J3, SH-J4, SH-J5	5		881545-2	TE Connectivity	Shunt, 100mil, Gold plated, Black	Shunt 2 pos. 100 mil
T1	1		CR8350-2500-N	CR MAGNETICS	CURRENT TRANSFORMER, 20-1 KHz, 57 OHM, VERTICAL, THRU-4P	
TP1, TP2, TP3, TP4, TP6, TP7, TP8, TP9	8		5000	Keystone	Test Point, Miniature, Red, TH	Red Miniature Testpoint
TP5	1		5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
TP10, TP11, TP13, TP15, TP17, TP20, TP21, TP25, TP28	9	White	5002	Keystone	Test Point, Miniature, White, TH	White Miniature Testpoint
TP12, TP22, TP23, TP27	4	Black	5001	Keystone	Test Point, Miniature, Black, TH	Black Miniature Testpoint
TP14, TP16, TP18, TP19, TP24, TP26, TP29	7	Double	1573-2	Keystone	Terminal, Turret, TH, Double	Keystone1573-2
U1	1		TPS26624DRCR	Texas Instruments	7V - 57V, 800mA Industrial eFuse with Integrated Reverse Polarity Protection, DRC0010J (VSON-10)	DRC0010J
U2	1		LMZ14201TZ-ADJ/NOPB	Texas Instruments	1A SIMPLE SWITCHER® Power Module with 42V Maximum Input, 7 pin TO-PMOD	TZA07A
U3	1		TVS3300DRVR	Texas Instruments	33-V Precision Surge Protection Clamp, DRV0006A (WSON-6)	DRV0006A
U4	1		INA333AIDGKR	Texas Instruments	Low-Power, Zero-Drift, Precision Instrumentation Amplifier, DGK0008A (VSSOP-8)	DGK0008A
U5	1		TLV1117LV33DCYR	Texas Instruments	Single Output LDO, 1 A, Fixed 3.3 V Output, 2 to 5.5 V Input, 4-pin SOT-223 (DCY), -40 to 125 degC, Green (RoHS & no Sb/Br)	DCY0004A
U6	1		LM74700QDBVTQ1	Texas Instruments	Low Iq Always ON Smart Diode Controller, DBV0006A (SOT-23-6)	DBV0006A
U7	1		OPA180IDR	Texas Instruments	0.1-uV/degC Drift, Low-Noise, Rail-to-Rail Output, 36-V, Zero-Drift Operational Amplifier, D0008A (SOIC-8)	D0008A

Designator	Quantity	Value	PartNumber	Manufacturer	Description	PackageReference
U8	1		TPS65131RGET	Texas Instruments	Postive and Negative Output DC-DC Converter, 2.7 to 5.5 V, -40 to 85 degC, 24-pin QFN (RGE24), Green (RoHS & no Sb/Br)	RGE0024B
U9	1		TPS7A3901DSC	Texas Instruments	Wide-VIN (± 33 V), 150-mA, Spilt-Rail Output, Positive and Negative LDO Voltage Regulator with Startup Tracking, DSC0010J	DSC0010J
U10	1		LMT70YFQR	Texas Instruments	+/-0.1degC Precision Analog Temperature Sensor, YFQ0004ACAC (DSBGA-4)	YFQ0004ACAC
U11, U16	2		INA826AIDGK	Texas Instruments	Precision, 200- μ A Supply Current, 36-V Supply Instrumentation Amplifier, DGK0008A (VSSOP-8)	DGK0008A
U12	1		REF6241IDGKR	Texas Instruments	High-Precision Voltage Reference with Integrated High-Bandwidth Buffer, DGK0008A (VSSOP-8)	DGK0008A
U13	1		OPA2188AID	Texas Instruments	0.03 μ V/degC, 6 μ V Vos, Low Noise, Rail-to-Rail Output, Zero-Drift Operational Amplifier, 4 to 36 V, -40 to 105 degC, 8-pin SOIC (D0008A), Green (RoHS & no Sb/Br)	D0008A
U14, U15	2		INA188ID	Texas Instruments	INA188 Precision, Zero-Drift, Rail-to-Rail Out, High Voltage Instrumentation Amplifier, D0008A	D0008A
U17	1		OPA188AID	Texas Instruments	Precision, Low Noise, Rail-to-Rail Output, Zero-Drift Operational Amplifier, 4 to 36 V, -40 to 125 degC, 8-pin SOIC (D8), Green (RoHS & no Sb/Br)	D0008A
U18	1		LM2903DR	Texas Instruments	Dual Comparator, D0008A	D0008A
FID1, FID2, FID3	0		N/A	N/A	Fiducial mark. There is nothing to buy or mount.	Fiducial
R10	0	7.50k	CRCW06037K50FKEA	Vishay-Dale	RES, 7.50 k, 1%, 0.1 W, 0603	0603
R11	0	13.3k	CRCW060313K3FKEA	Vishay-Dale	RES, 13.3 k, 1%, 0.1 W, 0603	0603
R13	0	44.2k	CRCW060344K2FKEA	Vishay-Dale	RES, 44.2 k, 1%, 0.1 W, 0603	0603
R14	0	267k	CRCW0603267KFKEA	Vishay-Dale	RES, 267 k, 1%, 0.1 W, 0603	0603
R94	0	0	RC0603JR-070RL	Yageo America	RES, 0, 5%, 0.1 W, 0603	0603