

# Bill of Materials

TI DESIGNS TIDA-00176

Interface to Sin/Cos Encoders with High-Resolution Position Interpolation

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Note
3	C1, C7, C8	CAP, CERM, 0.1 µF, 50 V, +/- 10%, X7R, 0603	MuRata	GRM188R71H104KA93D	0603	Fitted
2	C2, C3	CAP, CERM, 10 µF, 50 V, +/- 10%, X5R, 1206_190	TDK	CGA5L3X5R1H106K160AB	1206_190	Fitted
1	C5	CAP, CERM, 1 µF, 50 V, +/- 10%, X7R, 0805	MuRata	GRM21BR71H105KA12L	0805_HV	Fitted
1	C6	CAP, CERM, 0.01 µF, 50 V, +/- 10%, X7R, 0805	MuRata	GRM216R71H103KA01D	0805_HV	Fitted
2	C9, C10	CAP, CERM, 2.2µF, 50V, +/-10%, X5R, 1206	MuRata	GRM31CR61H225KA88L	1206	Fitted
1	C12	CAP, CERM, 2200 pF, 16 V, +/- 10%, X5R, 0402	MuRata	GRM155R61C222KA01D	0402	Fitted
2	C13, C15	CAP, CERM, 16 pF, 50 V, +/- 5%, C0G/NP0, 0402	MuRata	GRM1555C1H160JA01D	0402	Fitted
1	C14	CAP, CERM, 4700 pF, 16 V, +/- 10%, X7R, 0402	MuRata	GRM155R71C472KA01D	0402	Fitted
3	C16, C18, C20	CAP, CERM, 10 µF, 16 V, +/- 10%, X5R, 0805	MuRata	GRM219R61C106KA73D	0805_HV	Fitted
3	C17, C19, C21	CAP, CERM, 2.2 µF, 16 V, +/- 10%, X5R, 0603	MuRata	GRM188R61C225KE15D	0603	Fitted
1	C22	CAP, CERM, 0.01 µF, 16 V, +/- 10%, X7R, 0603	MuRata	GRM188R71C103KA01D	0603	Fitted
11	C23, C33, C47, C49,	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0603	MuRata	GRM188R71C104KA01D	0603	Fitted
2	C24, C34	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0603	MuRata	GRM188R71C104KA01D	0603_HV	Fitted
2	C25, C27	CAP, CERM, 10 µF, 16 V, +/- 10%, X7R, 0805_140	Samsung	CL21B106KOQNNNE	0805_140	Fitted
9	C26, C28, C31, C35, C38, C41, C43, C44, C45	CAP, CERM, 220 pF, 50 V, +/- 5%, C0G/NP0, 0402	MuRata	GRM1555C1H221JA01D	0402	Fitted
7	C29, C39, C48, C54, C63, C67, C79	CAP, CERM, 2200 pF, 50 V, +/- 5%, C0G/NP0, 0603	MuRata	GRM1885C1H222JA01D	0603	Fitted
8	C32, C42, C51, C57,	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0402	MuRata	GRM155R71C104KA88D	0402	Fitted
2	C36, C37	CAP, CERM, 10 µF, 10 V, +/- 10%, X7R, 0805_140	MuRata	GRM21BR71A106KE51K	0805_140	Fitted
6	C46, C58, C61, C71, C72, C83	CAP, CERM, 4.7 pF, 50 V, +/- 1%, C0G/NP0, 0402	MuRata	GRM1555C1H4R7WA01D	0402	Fitted
6	C53, C55, C66, C68, C78, C80	CAP, CERM, 100 pF, 50 V, +/- 5%, C0G/NP0, 0402	MuRata	GRM1535C1H101JDD5D	0402	Fitted
2	D1, D2	Diode, Schottky, 60V, 1A, SMA	ON Semiconductor	MBRA160T3G	SMA	Fitted
2	D3, D4	LED, Green, SMD	OSRAM	LG L29K-G2J1-24-Z	LG L29K_GREEN	Fitted
15	D5, D6, D7, D8, D9,	Diode, Schottky, 40 V, 0.35 A, SOD-523	Diodes Inc.	ZHCS350TA	SOD-523	Fitted
4	H1, H2, H3, H4	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips	B&F Fastener Supply	NY PMS 440 0025 PH	NY PMS 440 0025 PH	Fitted
4	H5, H6, H7, H8	Standoff, Hex, 0.5"L #4-40 Nylon	Keystone	1902C	Keystone_1902C	Fitted
2	J1, J5	Terminal Block, 2-pole, 200mil, TH	On-Shore Technology	OSTTC022162	On-Shore OSTTC022162	Fitted
1	J2	Power Jack, mini, 2.1mm OD, R/A, TH	Switchcraft	RAPC722X	CONN_RAPC722X	Fitted
1	J3	Header, 100mil, 2x1, Tin, TH	Sullins Connector Solutions	PEC02SAAN	CONN_PEC02SAAN	Fitted
1	J4	Header, 100mil, 3x1, Tin, TH	Sullins Connector Solutions	PEC03SAAN	CONN_PEC03SAAN	Fitted
1	J6	Header, 100mil, 10x2, TH	Sullins Connector Solutions	PEC10DAAN	SULLINS_PEC10DAAN	Fitted
1	J7	Header, 100mil, 3x2, Tin, TH	Sullins Connector Solutions	PEC03DAAN	SULLINS_PEC03DAAN	Fitted
1	J8	D-Sub-15, 17Pos, TH	Harting	09 66 252 6610	Harting_09 66 252 6610	Fitted
1	J9	Header, 100mil, 8x1, TH	Mill-Max	800-10-008-10-001000	Mill-Max_800-10-008-10-	Fitted
1	L1	Inductor, Shielded Drum Core, Ferrite, 100 µH, 0.9	Würth Elektronik eiSos	744065101	WE-TPC-XLH2	Fitted
1	L2	Inductor, Shielded Drum Core, Ferrite, 1 µH, 1.5 A,	Coilcraft	LPS3010-102MLB	LPS3010	Fitted
1	R1	RES, 10 ohm, 5%, 0.25W, 0603	Vishay-Dale	CRCW060310R0JNEAHP	0603	Fitted
2	R2, R12	RES, 1.0 k, 5%, 0.063 W, 0402	Vishay-Dale	CRCW04021K00JNED	0402	Fitted
1	R3	RES, 681 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402681KFKED	0402	Fitted
1	R5	RES, 63.4 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040263K4FKED	0402	Fitted
1	R6	RES, 51 ohm, 5%, 0.1W, 0603	Vishay-Dale	CRCW060351R0JNEA	0603	Fitted
1	R7	RES, 64.9 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040264K9FKED	0402	Fitted
1	R8	RES, 237 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402237KFKED	0402	Fitted
1	R9	RES, 46.4 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040246K4FKED	0402	Fitted
1	R10	RES, 10.0 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040210K0FKED	0402	Fitted
1	R11	RES, 340 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402340KFKED	0402	Fitted
1	R13	RES, 100 k, 5%, 0.063 W, 0402	Vishay-Dale	CRCW0402100KJNED	0402	Fitted
3	R14, R17, R56	RES, 0, 5%, 0.063 W, 0402	Vishay-Dale	CRCW04020000Z0ED	0402	Fitted
1	R15	RES, 845 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402845KFKED	0402	Fitted
1	R16	RES, 160 k, 5%, 0.063 W, 0402	Vishay-Dale	CRCW0402160KJNED	0402	Fitted
4	R18, R27, R30, R37	Resistor Networks, 1K ohm, 5K ohm, SMD	Vishay-Dale	MPMT10015001AT1	SOT-23M	Fitted
16	R19, R21, R23, R25, R31, R33, R34, R36, R38, R40, R44, R48, R59, R63, R75, R79	RES, 10.0, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040210R0FKED	0402	Fitted
3	R20, R32, R39	RES, 120, 1%, 0.4 W, 0805	Rohm	ESR10EZPF1200	0805_HV	Fitted
2	R22, R26	RES, 22, 5%, 0.063 W, 0402	Vishay-Dale	CRCW040222R0JNED	0402	Fitted
2	R24, R35	RES, 10, 5%, 0.063 W, 0402	Vishay-Dale	CRCW040210R0JNED	0402	Fitted
2	R28, R29	RES, 0.22, 1%, 0.1 W, 0603	Panasonic	ERJ-3RQFR22V	0603	Fitted
2	R41, R57	RES, 100, 5%, 0.063 W, 0402	Vishay-Dale	CRCW0402100R0JNED	0402	Fitted
2	R42, R73	RES, 1.0, 5%, 0.063 W, 0402	Vishay-Dale	CRCW04021R00JNED	0402	Fitted

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6	R43, R55, R58, R70, R74, R88	RES, 8.45 k, 0.1%, 0.063 W, 0402	Panasonic	ERA-2AEB8451X	0402	Fitted
6	R45, R54, R60, R69,	RES, 220, 5%, 0.063 W, 0402	Vishay-Dale	CRCW0402220RJNED	0402	Fitted
6	R46, R52, R61, R67, R77, R85	RES, 332, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402332RFKED	0402	Fitted
6	R47, R53, R62, R68, R78, R86	RES, 4.75 k, 0.1%, 0.063 W, 0402	Panasonic	ERA-2AEB4751X	0402	Fitted
3	R49, R64, R80	RES, 20.0, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040220R0FKED	0402	Fitted
3	R50, R65, R81	RES, 26.7 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW040226K7FKED	0402	Fitted
3	R51, R66, R83	RES, 549 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW0402549KFKED	0402	Fitted
4	R71, R72, R82, R84	RES, 1.00 k, 1%, 0.063 W, 0402	Vishay-Dale	CRCW04021K00FKED	0402	Fitted
2	TP1, TP4	Test Point, Miniature, Black, TH	Keystone	5001	Keystone5001	Fitted
2	TP2, TP3	Test Point, Miniature, Red, TH	Keystone	5000	Keystone5000	Fitted
2	TP5, TP6	Test Point, Miniature, White, TH	Keystone	5002	Keystone5002	Fitted
1	U1	0.5 A, 42 V Step Down DC/DC Converter with Eco-	Texas Instruments	TPS54040ADGQ	DGQ0010D_N	Fitted
1	U2	Single Output High PSRR LDO, 200 mA, Adjustable	Texas Instruments	TPS79901DRV	DRV0006A	Fitted
1	U3	Single Output LDO, 150 mA, Adjustable 0.9 to 6.2 V	Texas Instruments	TPS71701DCKR	DCK0005A_N	Fitted
1	U4	Single Output High PSRR LDO, 200 mA, Fixed 3.3 V	Texas Instruments	TPS79933DRV	DRV0006A	Fitted
1	U5	Dual, High-Speed, 16-, 14-, and 12-Bit,	Texas Instruments	ADS8354IPWR	PW0016A_N	Fitted
2	U6, U7	Ultra Low Power, Rail-to-Rail Output, Fully-	Texas Instruments	THS4531AIDGK	DGK0008A_N	Fitted
5	U8, U10, U12, U13, U14	50 MHz, Low-Noise Single-Supply Rail-to-Rail	Texas Instruments	OPA2365AIDR	D0008A_N	Fitted
2	U9, U15	40-ns, microPOWER, Push-Pull Output	Texas Instruments	TLV3202AID	D0008A_N	Fitted
1	U11	Low-Drift, Low-Power, Dual-Output, VREF and	Texas Instruments	REF2033AIDDCR	DDC0005A_N	Fitted
0	C4	CAP, CERM, 10 µF, 50 V, +/- 10%, X5R, 1206_190	TDK	CGA5L3X5R1H106K160AB	1206_190	Not Fitted
0	C11	CAP, CERM, 4.7 µF, 50 V, +/- 10%, X5R, 0805	TDK	C2012X5R1H475K125AB	0805_HV	Not Fitted
0	C30, C40	CAP, CERM, 1000 pF, 50 V, +/- 5%, C0G/NP0, 0402	MuRata	GRM1555C1H102JA01D	0402	Not Fitted
0	C52, C56, C65, C69,	CAP, CERM, 47 pF, 25 V, +/- 5%, C0G/NP0, 0402	MuRata	GRM1555C1E470JA01D	0402	Not Fitted
0	FID1, FID2, FID3	Fiducial mark. There is nothing to buy or mount.	N/A	Fiducial	Fiducial10-20	Not Fitted
0	R4	RES, 10k ohm, 5%, 0.125W, 0805	Vishay-Dale	CRCW080510K0JNEA	0805_HV	Not Fitted

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