Bill of Materials

TI DESIGNS TIDA-00440
Leakage Current Measurement Reference Design for detecting Insulation Failure

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Note
		MAIN BOARD				
1	!PCB	Printed Circuit Board	Any	TIDA-00440MB		Fitted
5	5V_VCC1, 5V_VCC2, 6V_VCC1, 6V_VCC2, V(PRI)	Test Point, Miniature, Red, TH	Keystone	5000	Red Miniature Testpoint	Fitted
4	C1, C4, C6, C7	CAP, CERM, 1uF, 10V, +/-10%, X5R, 0805	AVX	0805ZD105KAT2A	805	Fitted
1	C2	CAP, CERM, 100pF, 50V, +/-5%, C0G/NP0, 0805	AVX	08055A101JAT2A	805	Fitted
5	C3, C5, C8, C30, C31	CAP, CERM, 1000 pF, 25 V, +/- 10%, X7R, 0805	MuRata	GRM216R71E102KA01D	805	Fitted
16	C9, C10, C12, C13, C14, C18, C19, C25, C26, C36, C37, C38, C39, C40, C41, C44	CAP, CERM, 0.1 µF, 16 V, +/- 10%, X7R, 0805	Yageo America	CC0805KRX7R7BB104	805	Fitted
3	C11, C22, C24	CAP, CERM, 0.01 µF, 25 V, +/- 5%, C0G/NP0, 0805	TDK	C2012C0G1E103J	805	Fitted
4	C16, C20, C23, C27	CAP, CERM, 1uF, 10V, +/-10%, X7R, 0805	MuRata	GRM21BR71A105KA01L	805	Fitted
2	C17, C21	CAP, CERM, 10 µF, 10 V, +/- 10%, X5R, 1210	MuRata	GRM32DR71A106KA01L	1210	Fitted
1	C28	CAP, CERM, 10 µF, 35 V, +/- 10%, X5R, 1206_190	Taiyo Yuden	GMK316BJ106KL-T	1206	Fitted
1	C29	CAP, CERM, 0.1uF, 25V, +/-10%, X7R, 0805	AVX	08053C104KAT2A	805	Fitted
2	C32, C33	CAP, CERM, 22uF, 35V, +/-20%, JB, 0805	TDK	C2012JB1V226M125AC	805	Fitted
1	C34	CAP, CERM, 1uF, 35V, +/-10%, X7R, 0805	Taiyo Yuden	GMK212B7105KG-T	805	Fitted
1	D1	Diode, Schottky, 5 V, 0.03 A, SOD-323	Toshiba	1SS315TPH3F	SOD-323	Fitted
3	D2, D3, D4	Diode, Schottky, 40V, 1A, SMB	International Rectifier	10BQ040TRPBF	SMB	Fitted
3	D6, D7, D8	LED, Green, SMD	OSRAM	LG L29K-G2J1-24-Z	1.7x0.65x0.8mm	Fitted
6	FID1, FID2, FID3, FID4, FID5, FID6	Fiducial mark. There is nothing to buy or mount.	N/A	N/A	N/A	Fitted
4	H1, H2, H3, H4	Machine Screw, Round, #4-40 x 1/4, Nylon, Philips panhead	B&F Fastener Supply	NY PMS 440 0025 PH	Screw	Fitted
4	J1, J2, J3, J4	Standard Banana Jack, Uninsulated	Pomona Electronics	3267	Pomona_3267	Fitted
4	J5, J6, J7, J8	Terminal Block, 2x1, 2.54mm, TH	TE Connectivity	282834-2	Terminal Block, 2x2, 2.54mm, TH	Fitted
4	JD1, JD2, JD3, JD4	Connector, Receptacle, 100mil, 2x1, Gold plated, TH	TE Connectivity	5-534206-1	2x1 Header Receptable	Fitted
1	K1	Relay, DPDT, 8A, 5VDC, TH	Omron Electronic Components	G2RL-2 DC5	29x15.7x12.7mm	Fitted
1	LBL1	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	PCB Label 0.650''H x 0.200''W	Fitted
2	Q1, Q2	Trans, Nch, 12V, 20A, 10 mOhm	TI	CSD13202Q2	SON2X2MM	Fitted
1	Q3	Transistor, NPN, 32 V, 1 A, SOT-89	Diodes Inc.	2DD1664R-13	SOT-89	Fitted
3	R1, R53, R54	RES, 1.00 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08051K00FKEA	805	Fitted
4	R2, R59, R61, R62	RES, 499 k, 1%, 0.75 W, 2010	Vishay-Dale	CRCW2010499KFKEF	2010	Fitted
3	R3, R44, R58	RES, 7.50 M, 1%, 0.25 W, 1206	Vishay-Dale	CRCW12067M50FKEA	1206	Fitted
8	R4, R9, R18, R20, R22, R24, R25, R29	RES, 10.0, 0.1%, 0.125 W, 0805	Yageo America	RT0805BRD0710RL	805	Fitted
6	R5, R7, R21, R23, R26, R28	RES, 470 ohm, 1%, 0.125W, 0805	Vishay-Dale	CRCW0805470RFKEA	805	Fitted
1	R6	RES, 6.8k ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW12066K80JNEA	1206	Fitted
1	R8	RES, 0, 5%, 0.75 W, 2010	Vishay-Dale	CRCW20100000Z0EF	2010	Fitted
1	R11	RES, 261, 1%, 0.25 W, 1206	Yageo America	RC1206FR-07261RL	1206	Fitted
1	R12	RES, 2.70 k, 1%, 0.25 W, 1206	Yageo America	RC1206FR-072K7L	1206	Fitted
1	R13	RES, 220 k, 1%, 0.25 W, 1206	Yageo America	RC1206FR-07220KL	1206	Fitted
2	R14, R15	RES, 2.00 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW08052K00FKEA	805	Fitted
2	R16, R17	RES, 10.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0FKEA	805	Fitted
3	R19, R64, R65	RES, 3.0 M, 5%, 0.25 W, 1206	Vishay-Dale	CRCW12063M00JNEA	1206	Fitted
1	R27	RES, 3.0 k, 5%, 0.25 W, 1206	Vishay-Dale	CRCW12063K00JNEA	1206	Fitted
5	R33, R34, R36, R41, R47	RES, 0 ohm, 5%, 0.125W, 0805	Panasonic	ERJ-6GEY0R00V	805	Fitted
1	R35	RES, 10Meg ohm, 5%, 0.25W, 1206	Vishay-Dale	CRCW120610M0JNEA	1206	Fitted
2	R45, R57	RES, 0, 5%, 0.25 W, 1206	Vishay-Dale	CRCW12060000Z0EA	1206	Fitted
1	R46	RES, 126k ohm, 0.1%, 0.125W, 0805	Yageo America	RT0805BRD07126KL	805	Fitted
1	R48	RES, 35.2 k, 0.1%, 0.125 W, 0805	Yageo America	RT0805BRD0735K2L	805	Fitted
1	R49	RES, 145 k, 0.1%, 0.125 W, 0805	Yageo America	RT0805BRD07145KL	805	Fitted
1	R50	RES, 12.7 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080512K7FKEA	805	Fitted
1	R51	RES, 19.6 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080519K6FKEA	805	Fitted
1	R52	RES, 20.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080520K0FKEA	805	Fitted
2	R55, R56	RES, 0, 5%, 0.125 W, 0805	Vishay-Dale	CRCW08050000Z0EA	805	Fitted
1	S1	DIP Switch, SPST 4Pos, Slide, TH	Grayhill	78B04ST	DIP Switch, 4Pos	Fitted
1	SW	Test Point, O.032 Hole	STD	STD		Fitted
1	T1	Transformer, 60 uH, TH	Wurth Elektronik eiSos	750342773	22.1x15.7mm	Fitted
1	U1	Micro-Power (50mA), Zerø-Drift, Rail-to-Rail Out Instrumentation Amplifier	Texas Instruments	INA333AIDGK	DGK0008A	Fitted
3	U2, U4, U5	Fully-Differential Isolation Amplifier, DWV0008A	Texas Instruments	AMC1200BDWV	DWV0008A	Fitted
1	U3	36-V, Programmable-Gain, Voltage-Output, Bidirectional, Zero-Drift Series, Current-Shunt Monitor, DGK0008A	Texas Instruments	INA225AIDGK	DGK0008A	Fitted
1	U6	Wide Input 65V, 1.5A Synchronous Step-Down DC-DC Converter, DNT0012B	Texas Instruments	LM5160ADNTR	DNT0012B	Fitted

Qty	Reference	Part Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Note
1	U7	LDO with 6.4 to 15 V Input and 5 V Output, -40 to 125 degC, 8-Pin SON (DRJ), Green (RoHS & no Sb/Br)	Texas Instruments	TLV1117-50IDRJR	DRJ0008A	Fitted
1	U8	Micropower 150 mA Low-Noise Ultra Low-Dropout Regulator, 5-pin SOT-23	Texas Instruments	LP2985AIM5-5.0	MF05A	Fitted
1	U10	IC, Dual 10 Ohms SPDT Analog Switch	TI	TS5A23157DGS	MSOP-10	Fitted
1	U11	IC,Low Power Triple and Quad Channels Digital Isolators	TI	ISO7640FM	SO-16	Fitted
0	C15, C35, C42, C43	CAP, CERM, 0.01 µF, 25 V, +/- 5%, C0G/NP0, 0805	TDK	C2012C0G1E103J	805	Fitted
0	D5, D9, D10	Diode, TVS, Uni, 5 V, 600 W, SMB	Diodes Inc.	SMBJ5.0A-13-F	SMB	Not Fitted
0	R10	RES, 51 k, 5%, 0.125 W, 0805	Vishay-Dale	CRCW080551K0JNEA	805	Not Fitted
0	R30, R31, R32, R37, R38, R39, R40, R42	RES, 0 ohm, 5%, 0.125W, 0805	Panasonic	ERJ-6GEY0R00V	805	Not Fitted
0	R43, R60, R63	RES, 7.50 M, 1%, 0.25 W, 1206	Vishay-Dale	CRCW12067M50FKEA	1206	Not Fitted
DAUGHTER BOARD						
1	!PCB1	Printed Circuit Board	Any	TIDA-00440DB		Fitted
1	C1	CAP, Film, 0.22 µF, 1000 V, +/- 5%, TH	EPCOS Inc	B32653A224J	26.50x20.50x11mm	Fitted
1	C2	CAP, CERM, 4700pF, 1000V, +/-10%, X7R, 1206	MuRata	GRM31BR73A472KW01L	1206	Fitted
2	C3, C8	CAP, CERM, 0.47 µF, 450 V, +/- 10%, X7T, 1812	TDK Corporation	C4532X7T2W474K230KA	1812	Fitted
1	C4	CAP, AL, 10uF, 35V, +/-20%, TH	Nichicon	UVR1V100MDD1TA	CAPPR2-5x11	Fitted
1	C5	CAP, CERM, 1uF, 35V, +/-10%, X7R, 0805	Taiyo Yuden	GMK212B7105KG-T	805	Fitted
1	C7	CAP, CERM, 5100 pF, 50 V, +/- 5%, C0G/NP0, 0805	MuRata	GRM2195C1H512JA01D	805	Fitted
1	C9	CAP, CERM, 0.47 µF, 630 V, +/- 10%, X7T, 2220	TDK Corporation	CGA9P1X7T2J474K250KE	2220	Fitted
1	D1	Diode, P-N, 1000V, 1A, TH	Fairchild Semiconductor	1N4007	DO-41	Fitted
1	D2	TVS DIODE	Littelfuse Inc	P4KE120	DO-204AL, DO-41, AXIAL	Fitted
2	D3, D4	Diode, P-N, 3000V, 0.25A, TH	Vishay	GP02-30-E3/73	DO-41	Fitted
1	D5	DIODE FAST REC 1KV 1A DO41	Fairchild Semiconductor	UF4007	DO-204AL, DO-41, AXIAL	Fitted
2	D6, D7	TVS DIODE 495VWM 798VC AXIAL	Littelfuse Inc	P4KE550	DO-204AL, DO-41, AXIAL	Fitted
1	D8	Diode, Switching, 600V, 1A, TH	Vishay-Semiconductor	1N4937-E3	DO-41	Fitted
1	D9	Diode, Signal, 100V, 1A	Diodes	1N4002	DO-41	Fitted
5	J1, JD1, JD2, JD3, JD4	Header, 2.54 mm, 2x1, Gold, TH	Wurth Elektronik eiSos	61300211121	Header, 2.54mm, 2x1, TH	Fitted
1	LBL1	Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	Brady	THT-14-423-10	PCB Label 0.650''H x 0.200''W	Fitted
1	LD1	LED SmartLED Green 570NM	OSRAM	LG L29K-G2J1-24-Z	603	Fitted
1	Q1	MOSFET, N-CH, 1200 V, 0.6 A, DDPAK	IXYS	IXTA06N120P	DDPAK	Fitted
4	R1, R2, R3, R5	RES, 470k ohm, 1%, 0.25W, 1206	Yageo America	RC1206FR-07470KL	1206	Fitted
1	R4	RES, 10 ohm, 5%, 1W, 2512	Panasonic	ERJ-1TYJ100U	2512	Fitted
1	R6	RES, 6.80k ohm, 0.1%, 0.125W, 0805	Susumu Co Ltd	RG2012P-682-B-T5	805	Fitted
2	R7, R9	RES, 100, 1%, 0.125 W, 0805	Vishay-Dale	CRCW0805100RFKEA	805	Fitted
1	R8	RES, 43.0 k, 0.1%, 0.125 W, 0805	Susumu Co Ltd	RG2012P-433-B-T5	805	Fitted
1	R10	RES, 10, 5%, 0.125 W, 0805	Vishay-Dale	CRCW080510R0JNEA	805	Fitted
1	R11	RES, 100 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW0805100KFKEA	805	Fitted
1	R12	RES, 10 k, 5%, 0.125 W, 0805	Vishay-Dale	CRCW080510K0JNEA	805	Fitted
1	R13	RES, 15.0 k, 1%, 0.125 W, 0805	Vishay-Dale	CRCW080515K0FKEA	805	Fitted
1	R14	RES, 390, 0.1%, 0.125 W, 0805	Susumu Co Ltd	RG2012P-391-B-T5	805	Fitted
1	R15	RES, 0.75, 1%, 1 W, 2010	Stackpole Electronics Inc	CSRN2010FKR750	2010	Fitted
1	R16	RES, 0, 5%, 0.25 W, 1206	Vishay-Dale	CRCW12060000Z0EA	1206	Fitted
2	R18, R19	RES, 1.02 M, 1%, 0.25 W, 1206	Vishay-Dale	CRCW12061M02FKEA	1206	Fitted
1	T1	Transformer, 738uH, SMT	Wurth Elektronik eiSos	750342792	20.3x14.3x17.96mm	Fitted
1	U1	IC REG CTRLR FLYBK ISO 7SOIC	Texas Instruments	UCC28711D	8-SOIC	Fitted
1	U2	Optocoupler, DC Input ,Half-Pitch Phototransistor, 3000 VRMS, SO-4	Avago	ACPL-217-56AE	SOP	Fitted
0	C6	CAP, CERM, 1000pF, 100V, +/-10%, X7R, 0805	Kemet	C0805C102K1RACTU	805	Not Fitted
0	D10	Diode, Switching, 600V, 1A, TH	Vishay-Semiconductor	1N4937-E3	DO-41	Not Fitted
0	R17	RES, 1.00 k, 1%, 1 W, 2512	Vishay-Dale	CRCW25121K00FKEG	2512	Not Fitted

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