

Bill of Materials

TI DESIGNS TIDA-00167
Isolated Power 2-wire 4-20mA Loop

Designator	Quantity	Value	Description	Package Reference	Part Number	Manufacturer	Alternate Part Number	Alternate Manufacturer
!PCB1	1		Printed Circuit Board		TIDA-00167	Any		
C1	1	0.01uF	CAP, CERM, 0.01uF, 10V, +/-10%, X5R, 0402	0402	GRM155R61A103KA01D	MuRata		
C5	1	0.47uF	CAP, CERM, 0.47uF, 100V, +/-10%, X7R, 0805	0805	GRM21BR72A474KA73L	MuRata		
C6	1	0.01uF	CAP, CERM, 0.01uF, 100V, +/-10%, X7R, 0603	0603	GRM188R72A103KA01D	MuRata		
C7, C29	2	2.2uF	CAP, CERM, 2.2uF, 16V, +/-10%, X5R, 0402	0402	C1005X5R1C225K050BC	TDK		
C10, C12, C15	3	10uF	CAP, CERM, 10uF, 10V, +/-10%, X7R, 0805	0805	GRM21BR71A106KE51L	MuRata		
C11, C28	2	0.1uF	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0603	0603	GRM188R71C104KA01D	MuRata		
C13, C19, C20, C21, C22, C23, C24, C31, C33	9	1uF	CAP, CERM, 1uF, 10V, +/-10%, X5R, 0402	0402	GRM155R61A105KE15D	MuRata		
C14	1	22uF	CAP, CERM, 22uF, 10V, +/-10%, X5R, 1206	1206	GRM31CR61A226KE19L	MuRata		
C16	1	4.7uF	CAP, CERM, 4.7uF, 10V, +/-10%, X5R, 0603	0603	C0603C475K8PACTU	Kemet		
C17	1	1uF	CAP, CERM, 1uF, 10V, +/-10%, X7R, 0603	0603	GRM188R71A105KA61D	MuRata		
C25	1	2.2uF	CAP, CERM, 2.2uF, 10V, +/-10%, X7R, 0603	0603	GRM188R71A225KE15D	MuRata		
C26, C27, C30, C32	4	0.1uF	CAP, CERM, 0.1uF, 16V, +/-10%, X7R, 0402	0402	GRM155R71C104KA88D	MuRata		
D1, D5	2	100V	Diode, Schottky, 100V, 0.25A, SOD-323F	SOD-323F	BAT46WJ,115	NXP Semiconductor		
D2, D4	2	90V	Diode, Switching, 90V, 0.1A, SOD-523F	SOD-523F	CDSU101A	Comchip Technology		
D3	1	39V	Diode, TVS, Bi, 39V, 600W, SMB	SMB	SM6T39CA	ST Microelectronics		None
D6, D7	2	75V	Diode, Fast Rectifier, 75V, 0.2A, 3.7x1.6x1.6mm	3.7x1.6x1.6mm	PMLL4153,115	NXP Semiconductor		
D8	1	3.3V	Diode, TVS, Uni, 3.3V, 0.15W, SOD-923	SOD-923	ESD9R3.3ST5G	ON Semiconductor		
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, 0.5"L #4-40 Nylon	Standoff	1902C	Keystone		
J1	1		Terminal Block, 6A, 3.5mm Pitch, 2-Pos, TH	7.0x8.2x6.5mm	ED555/2DS	On-Shore Technology		
J2, J3, J4, J5, J7, J8, J10, J11, J12, J13, J14, J15, J18, J19, J20, J21	16		Header, 100mil, 2x1, Tin, TH	Header 2x1	90120-0122	Molex		

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J6, J9	2		Header, 4x1, 100mil, Tin, TH	Header, 4x1, 100mil, TH	PEC04SAAN	Sullins Connector Solutions		
J16, J17	2		Header, 100mil, 3x1, Tin, TH	Header, 3 PIN, 100mil, Tin	PEC03SAAN	Sullins Connector Solutions		
L1	1	47uH	Inductor, Wirewound, Ferrite, 47uH, 0.11A, 1.235 ohm, SMD	2.5x1.8x1.8mm	CB2518T470K	Taiyo Yuden		
L2	1	470uH	Coupled inductor, 470uH, 0.1A, 0.35 ohm, +/-30%, SMD	5.0x3.3x3.3mm	DR221-474AE	Bourns		
L3	1	0	RES, 0 ohm, 5%, 0.125W, 0805	0805	CRCW08050000Z0EA	Vishay-Dale		
L5	1	0	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		
Q1	1	V	Transistor, NPN, 80V, 1A, SOT1061	SOT1061	BC56-16PA,115	NXP Semiconductor		
Q2	1	0.25V	Transistor, NPN, 80V, 0.5A, SOT-323	SOT-323	MMSTA06-7-F	Diodes Inc.		
R1	1	200	RES, 200 ohm, 1%, 0.25W, 1206	1206	CRCW1206200RFKEA	Vishay-Dale		
R3, R19, R20	3	1.00Meg	RES, 1.00Meg ohm, 1%, 0.063W, 0402	0402	CRCW04021M00FKED	Vishay-Dale		
R4	1	698k	RES, 698k ohm, 1%, 0.1W, 0603	0603	CRCW0603698KFKEA	Vishay-Dale		
R8	1	255k	RES, 255k ohm, 1%, 0.1W, 0603	0603	CRCW0603255KFKEA	Vishay-Dale		
R10, R13	2	499k	RES, 499k ohm, 1%, 0.063W, 0402	0402	CRCW0402499KFKEA	Vishay-Dale		
R11	1	1.00k	RES, 1.00k ohm, 1%, 0.063W, 0402	0402	CRCW04021K00FKED	Vishay-Dale		
R15, R16, R17	3	10.0	RES, 10.0 ohm, 1%, 0.1W, 0603	0603	CRCW060310R0FKEA	Vishay-Dale		
R18	1	1.00Meg	RES, 1.00Meg ohm, 1%, 0.1W, 0603	0603	CRCW06031M00FKEA	Vishay-Dale		
R21	1	24.9k	RES, 24.9k ohm, 1%, 0.25W, 1206	1206	CRCW120624K9FKEA	Vishay-Dale		
R22	1	49.9	RES, 49.9 ohm, 1%, 0.25W, 1206	1206	CRCW120649R9FKEA	Vishay-Dale		
R23	1	100	RES, 100 ohm, 1%, 0.25W, 1206	1206	CRCW1206100RFKEA	Vishay-Dale		
SH-J1, SH-J2, SH-J3, SH-J4, SH-J5, SH-J6, SH-J7, SH-J8, SH-J9	9	1x2	Shunt, 100mil, Gold plated, Black	Shunt	969102-0000-DA	3M	SNT-100-BK-G	Samtec
T1	1	3mH	Transformer, 3mH, SMT	9.78x10.54x9.14mm	750314839	Würth Elektronik eiSos		
TP4, TP5, TP7	3	Black	Test Point, Miniature, Black, TH	Black Miniature Testpoint	5001	Keystone		
U1	1		60-V, 5-µA IQ, 100-mA, Low-Dropout Voltage Regulator with Enable and Power-Good, DRB0008B	DRB0008B	TPS7A1601DRB	Texas Instruments		None
U2	1		UNREGULATED 60-mA CHARGE PUMP VOLTAGE INVERTER, DBV0005A	DBV0005A	TPS60402DBV	Texas Instruments		None
U3, U4	2		Low Noise, High-Bandwidth PSRR Low-Dropout 150mA Linear Regulator, DSE0006A	DSE0006A	TPS71733DSE	Texas Instruments		None
U5	1		1.2V - 8V, 3A PFET Load Switch with Configurable Slew Rate, Fast Transient Isolation and Hysteretic Control, DDC0006A	DDC0006A	TPS27082LDDC	Texas Instruments		None
U6, U7	2		Single Output LDO, 50 mA, Fixed 3.3 V Output, 3 to 24 V Input, 5-pin SC70 (DCK), -40 to 85 degC, Green (RoHS & no Sb/Br)	DCK0005A	TPS71533DCKR	Texas Instruments	Equivalent	None
C2, C3, C4, C8, C9	0	10uF	CAP, CERM, 10uF, 10V, +/-10%, X7R, 0805	0805	GRM21BR71A106KE51L	MuRata		
C18	0	560pF	CAP, CERM, 560pF, 50V, +/-10%, X7R, 0402	0402	GRM155R71H561KA01D	MuRata		
FID1, FID2, FID3	0		Fiducial mark. There is nothing to buy or mount.	Fiducial	N/A	N/A		

Designator	Quantity	Value	Description	Package Reference	Part Number	Manufacturer	Alternate Part Number	Alternate Manufacturer
L4	0	33uH	Inductor, Wirewound, Ferrite, 33uH, 0.13A, 0.7 ohm, SMD	2.5x1.8x1.8mm	CB2518T330K	Taiyo Yuden		
R2, R9, R12	0	0	RES, 0 ohm, 5%, 0.1W, 0603	0603	CRCW06030000Z0EA	Vishay-Dale		
R5, R6, R7	0	200	RES, 200 ohm, 1%, 0.063W, 0402	0402	CRCW0402200R0FKED	Vishay-Dale		
R14	0	10.0	RES, 10.0 ohm, 1%, 0.063W, 0402	0402	CRCW040210R0FKED	Vishay-Dale		

Notes:

Unless otherwise noted in the Alternate PartNumber and/or Alternate Manufacturer columns, all parts may be substituted with equivalents.

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