

Item Number	Quantity	Part Number	Part Reference	Value	Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Component Height	Qualifications	Low temp	High temp
1	1	PCB-034015001	A1	PCB-034015001	Bare Board, Ultrasonic	D3 Engineering	PCB-034015001					
2	6	D3-0000255	C1,C2,C5,C6,C11,C12	2.2uF	CAP 2.2UF 6.3V CERAMIC X7R 0603 SMD -55C to +125C AEC-Q200	TDK Corp.	CGA3E1X7R0J225K	CAPCEIA0603	0.90MM	AEC-Q200	-55	125
3	18	D3-0000247	C3,C4,C7,C8,C9,C10,C16,C18,C24,C26,C27,C31,C33,C46,C47,C51,C56,C61	0.1uF	CAP 0.1UF 50V CERAMIC X7R 0402 SMD -55C to +125C AEC-Q200	TDK Corp.	CGA2B3X7R1H104K	CAPCEIA0402	0.55MM	AEC-Q200	-55	125
4	1	D3-0000182	C13	2200pF	CAP 2200pF (2.2nF) 50V CERAMIC X7R 0402	Kemet	C0402C222K5RACTU	CAPCEIA0402	0.55MM		-55	125
5	2	D3-0000225	C14,C15	22pF	CAP 22pF 25V CERAMIC COG/NPO 0402	AVX	04023A220JAT2A	CAPCEIA0402	0.55MM		-55	125
6	5	D3-0000041	C17,C21,C25,C28,C38	0.01uF	CAP 0.01UF(10000pF) 50V CERAMIC X7R 0402 SMD	Kemet	C0402C103K5RACTU	CAPCEIA0402	0.55MM		-55	125
7	1	D3-0000364	C19	220pF	CAP 220pF 50V CERAMIC NPO 0603 SMD	TDK Corp.	C1608C0G1H221J080AA	CAPCEIA0603	0.80MM		-55	125
8	2	D3-0000387	C20,C30	300pF	CAP 300PF 100V CERAMIC NPO/COG 0603 SMD	Murata	GRM1885C2A301JA01D	CAPCEIA0603	0.80MM		-55	125
9	1	D3-0000025	C22	0.001uF	CAP 0.001UF(1000pF) 50V CERAMIC X7R 0603 SMD	Murata	GRM188R71H102KA01D	CAPCEIA0603	0.90MM		-55	125
10	2	D3-0000388	C23,C32	51pF	CAP 51PF 100V CERAMIC NPO/COG 0603 SMD	AVX	06031A510JAT2A	CAPCEIA0603	0.90MM		-55	125
11	4	D3-0000330	C29,C53,C54,C60	10uF	CAP 10UF 10V CERAMIC X7R 0805 SMD -55C to +125C	Murata	GRM21BR71A106KE51L	CAPCEIA0805	1.40MM		-55	125
12	2	D3-0000390	C34,C35	47uF	CAP 47UF 16V CERAMIC X7R 2220 SMD	TDK Corp.	CGA9N3X7R1C476M230KB	CAPCEIA0603	2.50MM	AEC-Q200	-55	125
13	5	D3-0000250	C36,C37,C48,C49,C50	4.7uF	CAP 4.7UF 50V CERAMIC X7R 1210 SMD -55C to +125C AEC-Q200	TDK Corp.	CGA6P3X7R1H475K	CAPCEIA1210	2.5MM	AEC-Q200	-55	125
14	1	D3-0000159	C39	5600pF	CAP 5600PF 25V CERAMIC X7R 0402 SMD	Kemet	C0402C562K3RACTU	CAPCEIA0402	0.55MM		-55	125
15	1	D3-0000353	C40	330pF	CAP 330pF 50V CERAMIC X7R 0402 SMD	TDK Corp.	C1005X7R1H331K050BA	CAPCEIA0402	0.55MM		-55	125
16	3	<del>D3-0000076</del>	<del>C41,C42,C45</del>	<del>NP</del>	<del>DO NOT POPULATE 0402 SMD</del>	<del>NO_PART</del>	<del>DO NOT POPULATE</del>	<del>CAPCEIA0402</del>	<del>0.55MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
17	2	D3-0000271	C43,C44	56pF	CAP 56PF 50V CERAMIC NPO 0402 SMD -55C to +125C AEC-Q200	TDK Corp.	CGA2B2C0G1H560J	CAPCEIA0402	0.55MM	AEC-Q200	-55	125
18	2	D3-0000392	C52,C59	15pF	CAP 15pF 50V CERAMIC COG/NPO 0402	TDK Corp.	C1005C0G1H150J050BA	CAPCEIA0402	0.55MM		-55	125
19	1	D3-0000393	C55	0.15uF	CAP 0.15uF 16V CERAMIC X7R 0402	TDK	C1005X7R1C154K050BC	CAPCEIA0402	0.50MM		-55	125
20	2	<del>D3-0000077</del>	<del>C57,C58</del>	<del>NP</del>	<del>DO NOT POPULATE 0603 SMD</del>	<del>NO_PART</del>	<del>DO NOT POPULATE</del>	<del>CAPCEIA0603</del>	<del>0.90MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
21	1	D3-0070172	D1	AMBER	LED AMBER Vf = 2V Ifcont = 20mA, 0603 SMT	Avago	ASMT-RA45-AP932	LEDC1608X45N	0.45MM	AEC-Q100	-40	100
22	7	D3-0070173	D4,D5,D6,D7,D8,D14,D15	TPD1E110B06	DIODE TVS, 12pF, ESD immunity +/-30kV air, +/-30kV contact	Texas Instruments Inc.	TPD1E110B06DPYR	DFN100X60X45-2N	0.45MM		-40	125
23	1	D3-0070174	D9	BAS40-04-7-F	Dual Schottky Diode, 40V, 200mA	Diodes Inc	BAS40-04-7-F	SOT92P240X110-3N	1.10MM	AEC-Q100	-55	125
24	2	D3-0070046	D10,D11	B360B	Diode Schottky, 60V, 3A, SMB	Diodes Inc	B360B-13-F	DIOM5336X250N	2.50MM		-55	155
25	2	D3-0070107	D12,D13	MMBZ27VCLT1G	TVS Diode Array, 2 diodes, CC, 40W, SOT-23-3	ON Semiconductor	MMBZ27VCLT1G	SOT95P237X111-3N	1.11MM			
26	1	D3-0070175	D16	B260A-13-F	Diode Schottky, 60V, 2A, SMA	Diodes Inc	B260A-13-F	DIOM5226X230N	2.30MM	AEC-Q100	-65	150
27	1	D3-0020064	J1	HEADER7x2 SMT	HEADER, 2 ROW x 7 PIN 15u GOLD SMT	Molex	15-91-0140	D3-ST_HEADER_7X2_100_SMT	11.70MM			
28	1	D3-0020585	J3	Samtec SSW-107-02-F-D-RA	RECEPTACLE, 2 ROW x 7 PIN Gold Flash, Right Angle	Samtec	SSW-107-02-F-D-RA	SAMTEC_SSW-107-02-X-D-RA	4.95MM		-55	125
29	1	D3-0020075	J4	TERM BLOCK HEADER 4x1	Terminal Block Header,4x1,3.81mm,PCB Mount RA,8A	Phoenix Contact	1803293	D3-TB-HEADER-3_81MM-4X1				
30	1	D3-0020112	J5	HEADER6x1	HEADER, .100", 6 POS, 10u GOLD	3M	961106-6404-AR	D3-ST_HEADER_6X1_100	5.60MM		-25	105
31	1	<del>D3-0020017</del>	<del>J6</del>	<del>Thru-Hole3x1</del>	<del>Thru-Hole, 1 ROW x 3</del>	<del>NO_PART</del>	<del>NO_PART</del>	<del>D3-ST_HEADER_3_100</del>	<del>0.01MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
32	2	D3-0050114	L1,L2	60 Ohm	Ferrite Bead, 60ohm@100MHz, 1.5A, DC Resistance 0.075ohm max, 0402 SMD	TDK Corp.	MPZ1005S600C	INDCEIA0402	0.55MM		-55	125
33	1	D3-0050116	L3	27uH	27uH Shielded Power Inductor, IR=4.3A, ISAT=3.1A, 37.6 m-ohm, -40 to 150C	Würth Electronics	7447798271	IND_7447798271	6.40MM		-40	150
34	1	D3-0050107	L4	B82799S0513N001	Common Mode Choke, 51UH, 0.2 Arms,DCR 0.25ohms	EPCOS Inc	B82799S0513N001	INDP4532X32	3.20MM	AEC-Q200	-55	150
35	1	D3-0050154	L5	22uH	Power Inductor, 22uH Shielded Inductor, DCR = 142 m-Ohm, Isat = 1.9A, Irms = 1.5A	Bourns	SRN6045-220M	IND_BOURNS_SRN6045	4.50MM		-40	125
36	4	<del>D3-0100035</del>	<del>MH1,MH2,MH3,MH4</del>	<del>MOUNT HOLE</del>	<del>Mounting Hole #4-40 with No washer</del>	<del>NO_PART</del>	<del>NO_PART</del>	<del>D3-MH_4-40</del>	<del>0.01MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
37	1	D3-0080018	Q1	FDN5618P	MOSFET P-CH 60V 1.25A SOT-23	Fairchild Semiconductor	FDN5618P	SOT95P237X111-3N	1.12MM		-55	150
38	1	D3-0080098	Q2	2N7002A	N-channel, 60V, 180mA, SOT-23, Automotive Grade	Diodes Incorporated	2N7002A-7	SOT95P237X111-3N_GDS	1.20MM	AEC-Q101	-55	150
39	1	D3-0010449	R1	220_1%	Carbon Film Resistor 220 OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF2200X	RESCEIA0402	0.35MM		-55	155
40	2	D3-0010563	R2,R17	2.21K_1%	Carbon Film Resistor 2.21K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF2211X	RESCEIA0402	0.35MM		-55	155
41	7	<del>D3-0010052</del>	<del>R3,R9,R10,R15,R18,R19,R65</del>	<del>NP</del>	<del>DO NOT POPULATE 0402 SMD</del>	<del>NO_PART</del>	<del>DO NOT POPULATE</del>	<del>RESCEIA0402</del>	<del>0.01MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
42	7	D3-0010336	R5,R11,R12,R13,R14,R16,R22	22.0_1%	Carbon Film Resistor 22.0 OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF22R0X	RESCEIA0402	0.35MM		-55	155
43	9	D3-0010080	R7,R8,R20,R24,R25,R29,R33,R41,R43	10K_1%	Carbon Film Resistor 10K OHM 1/16W 1% 0402 SMD	Panasonic	ERJ-2RKF1002X	RESCEIA0402	0.35MM		-55	155
44	2	<del>D3-0010053</del>	<del>R21,R59</del>	<del>NP</del>	<del>DO NOT POPULATE 0603 SMD</del>	<del>NO_PART</del>	<del>DO NOT POPULATE</del>	<del>RESCEIA0603</del>	<del>0.45MM</del>	<del>NA</del>	<del>NA</del>	<del>NA</del>
45	1	D3-0011835	R23	51K_1%	Carbon Film Resistor 51K OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF5102V	RESCEIA0603	0.55MM		-55	155
46	3	D3-0011120	R26,R30,R39	110_1%	Carbon Film Resistor 110 OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF1100V	RESCEIA0603	0.45MM		-55	155
47	2	D3-0011863	R27,R32	4.99M_1%	Carbon Film Resistor 49.9M OHM 1/16W 1% 0402 SMD AEC-Q200 qualified	Vishay	CRCW04024M99FKED	RESCEIA0402	0.40MM	AEC-Q200	-55	155

Item Number	Quantity	Part Number	Part Reference	Value	Description	Manufacturer	Manufacturer Part Number	PCB Footprint	Component Height	Qualifications	Low temp	High temp
48	8	D3-0010050	R28,R38,R47,R48,R49,R52,R53,R66	0.0	Carbon Film Resistor 0.0 OHM 1/16W 5% 0402 SMD	Vishay	CRCW04020000Z0ED	RESCEIA0402	0.35MM	AEC-Q200	-55	155
49	2	D3-0010044	R31,R60	0.0	Carbon Film Resistor 0.0 OHM 1/10W 5% 0603 SMD	Vishay	CRCW06030000Z0EA	RESCEIA0603	0.45MM		-55	155
50	1	D3-0011165	R34	300_1%	Carbon Film Resistor 300 OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF3000V	RESCEIA0603	0.45MM		-55	155
51	1	D3-0011862	R35	1K_0.1%	Metal Film Resistor 1K OHM 1/10W 0.1% 0603 SMD AEC-Q200 qualified	Panasonic	ERA-3ARB102V	RESCEIA0603	0.55MM	AEC-Q200	-55	155
52	1	D3-0011836	R36	1K_1%	Carbon Film Resistor 1K OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF1001V	RESCEIA0603	0.55MM		-55	155
53	1	D3-0011289	R37	5.36K_1%	Carbon Film Resistor 5.36K OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF5361V	RESCEIA0603	0.45MM		-55	155
54	1	D3-0010713	R40	53.6K_1%	Carbon Film Resistor 53.6K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF5362X	RESCEIA0402	0.35MM		-55	155
55	1	D3-0010804	R42	348K_1%	Carbon Film Resistor 348K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF3483X	RESCEIA0402	0.35MM		-55	155
56	1	D3-0010727	R44	69.8K_1%	Carbon Film Resistor 69.8K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF6982X	RESCEIA0402	0.35MM		-55	155
57	1	D3-0010813	R45	412K_1%	Carbon Film Resistor 412K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF4123X	RESCEIA0402	0.35MM		-55	155
58	1	D3-0010637	R46	11.0K_1%	Carbon Film Resistor 11.0K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF1102X	RESCEIA0402	0.35MM		-55	155
59	2	D3-0011096	R50,R51	62.0_1%	Carbon Film Resistor 62.0 OHM 1/10W 1% 0603 SMD	Panasonic	ERJ-3EKF62R0V	RESCEIA0603	0.45MM		-55	155
60	1	D3-0010786	R54	243K_1%	Carbon Film Resistor 243K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF2433X	RESCEIA0402	0.35MM		-55	155
61	1	D3-0011699	R55	51K_1%	Carbon Film Resistor 51K OHM 1/16W 1% 0402 SMD AEC-Q200 qualified	Vishay	CRCW040251K0FKED	RESCEIA0402	0.35MM	AEC-Q200	-55	155
62	1	D3-0010635	R56	10.5K_1%	Carbon Film Resistor 10.5K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF1052X	RESCEIA0402	0.35MM		-55	155
63	2	D3-0010227	R57,R62	30.1K_1%	Carbon Film Resistor 30.1K OHM 1/16W 1% 0402 SMD	Panasonic	ERJ-2RKF3012X	RESCEIA0402	0.35MM			
64	2	D3-0010622	R58,R64	7.87K_1%	Carbon Film Resistor 7.87K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF7871X	RESCEIA0402	0.35MM		-55	155
65	2	D3-0010733	R61,R63	80.6K_1%	Carbon Film Resistor 80.6K OHM 1/10W 1% 0402 SMD	Panasonic	ERJ-2RKF8062X	RESCEIA0402	0.35MM		-55	155
66	21	D3-0100002	TP1,TP2,TP3,TP4,TP5,TP6,TP7,TP8,TP9,TP10,TP11,TP12,TP13,TP14,TP17,TP19,TP22,TP24,TP25,TP26,TP27	TEST-POINT	Test Point, 13 MIL Drill	NO_PART	NO_PART	D3_TP_13	0.01MM		NA	NA
67	2	D3-0100038	TP15,TP18	TP-LOOP-RED	Test Point, Red, Miniature style	Keystone	5000	D3-KEYSTONE-MINI-TP	4.60MM		NA	NA
68	4	D3-0100037	TP16,TP20,TP21,TP23	TP-LOOP-BLACK	Test Point, Black, Miniature style	Keystone	5001	D3-KEYSTONE-MINI-TP	4.60MM		NA	NA
69	1	D3-0160042	U1	TMS320F28035-Q	TMS320F28035 Piccolo, TQFP-64, -40C-125C, Automotive Grade	Texas Instruments Inc.	TMS320F28035PAGQ	QFP50P1200X1200X120-64N	1.20MM	AEC-Q100	-40	125
70	1	D3-0150091	U2	8.000MHz	8.000MHZ Oscillator 3.3V SMT -55-125C	ECS	ECS-2033-080-AU	OSCCC200X250X90-4N	0.90MM		-55	125
71	1	D3-0140043	U3	TDC1000-Q1	Ultrasonic AFE, TOF Applications, Dual Transducer, 4MHz	Texas Instruments Inc.	TDC1000QPWQ1	SOP65P640X120-28N	1.00MM		-40	125
72	1	D3-0130240	U4	UCC27531-Q1	2.5A Source\5A Sink, 10V-35V Single Non-Inverting High Speed IGBT\MOSFET Driver, SOT23-6, AEC-Q100	Texas Instruments Inc.	UCC27531QDBVRQ1	SOT95P280X145-6N	1.45MM	AEC-Q100	-40	140
73	1	D3-0130239	U5	TPS54260-Q1	2.5A, 3.5-60V Step Down, SWIFT DC/DC Converter, 100kHz to 2.5MHz, AEC-Q100	Texas Instruments Inc.	TPS54260QDGRQ1	SOP50P490X110-11N	1.10MM	AEC-Q100	-40	125
74	1	D3-0120095	U6	HVDA551-Q1	5V CAN Transceiver 8-SOIC, -40C to +125C, AEC-Q100	Texas Instruments Inc.	HVDA551QDRQ1	SOIC127P600X175-8N	1.75MM	AEC-Q100	-40	125
75	2	D3-0130242	U7,U9	TPS79501-Q1	500mA, ADJ 1.2-5.4 Vout, 2.4-5.5 Vin, Low Noise, High PSRR, SON-8	Texas Instruments Inc.	TPS79501QDRBRQ1	SON65P300X300X100-9AN	1.00MM	AEC-Q100	-40	125
76	1	D3-0130241	U8	TPS61170-Q1	1.2A, 3-18Vin, Adjustable Output 38V max, Boost Converter, 1.2MHz, AEC-Q100	Texas Instruments Inc.	TPS61170QDRVRQ1	SON65P200X200X80-7N	0.80MM	AEC-Q100	-40	125
77	1	D3-0040055	U10	SN74LVC1G32QDBVRQ1	Single 2 Input Positive OR Gate, 1.65-5.5V, SOT23-5 AEC-Q100	Texas Instruments Inc.	SN74LVC1G32QDBVRQ1	SOT95P284X122-5N	1.45MM	AEC-Q100	-40	125
78	1	D3-0150092	Y1	20.00MHz	20.000 MHz Crystal, 18PF, +/-100ppm, -40-125C	ECS	ECS-200-18-33Q-DS	OSCCC250X320X80-4N	0.80MM	AEC-Q200	-40	125

## IMPORTANT NOTICE FOR TI REFERENCE DESIGNS

Texas Instruments Incorporated ("TI") reference designs are solely intended to assist designers ("Buyers") who are developing systems that incorporate TI semiconductor products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products.

TI reference designs have been created using standard laboratory conditions and engineering practices. **TI has not conducted any testing other than that specifically described in the published documentation for a particular reference design.** TI may make corrections, enhancements, improvements and other changes to its reference designs.

Buyers are authorized to use TI reference designs with the TI component(s) identified in each particular reference design and to modify the reference design in the development of their end products. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER TI INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN, including but not limited to any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services, or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

TI REFERENCE DESIGNS ARE PROVIDED "AS IS". TI MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE REFERENCE DESIGNS OR USE OF THE REFERENCE DESIGNS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. TI DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO TI REFERENCE DESIGNS OR USE THEREOF. TI SHALL NOT BE LIABLE FOR AND SHALL NOT DEFEND OR INDEMNIFY BUYERS AGAINST ANY THIRD PARTY INFRINGEMENT CLAIM THAT RELATES TO OR IS BASED ON A COMBINATION OF COMPONENTS PROVIDED IN A TI REFERENCE DESIGN. IN NO EVENT SHALL TI BE LIABLE FOR ANY ACTUAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY AND WHETHER OR NOT TI HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, ARISING IN ANY WAY OUT OF TI REFERENCE DESIGNS OR BUYER'S USE OF TI REFERENCE DESIGNS.

TI reserves the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques for TI components are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

Reproduction of significant portions of TI information in TI data books, data sheets or reference designs is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards that anticipate dangerous failures, monitor failures and their consequences, lessen the likelihood of dangerous failures and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in Buyer's safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed an agreement specifically governing such use.

Only those TI components that TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components that have **not** been so designated is solely at Buyer's risk, and Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.