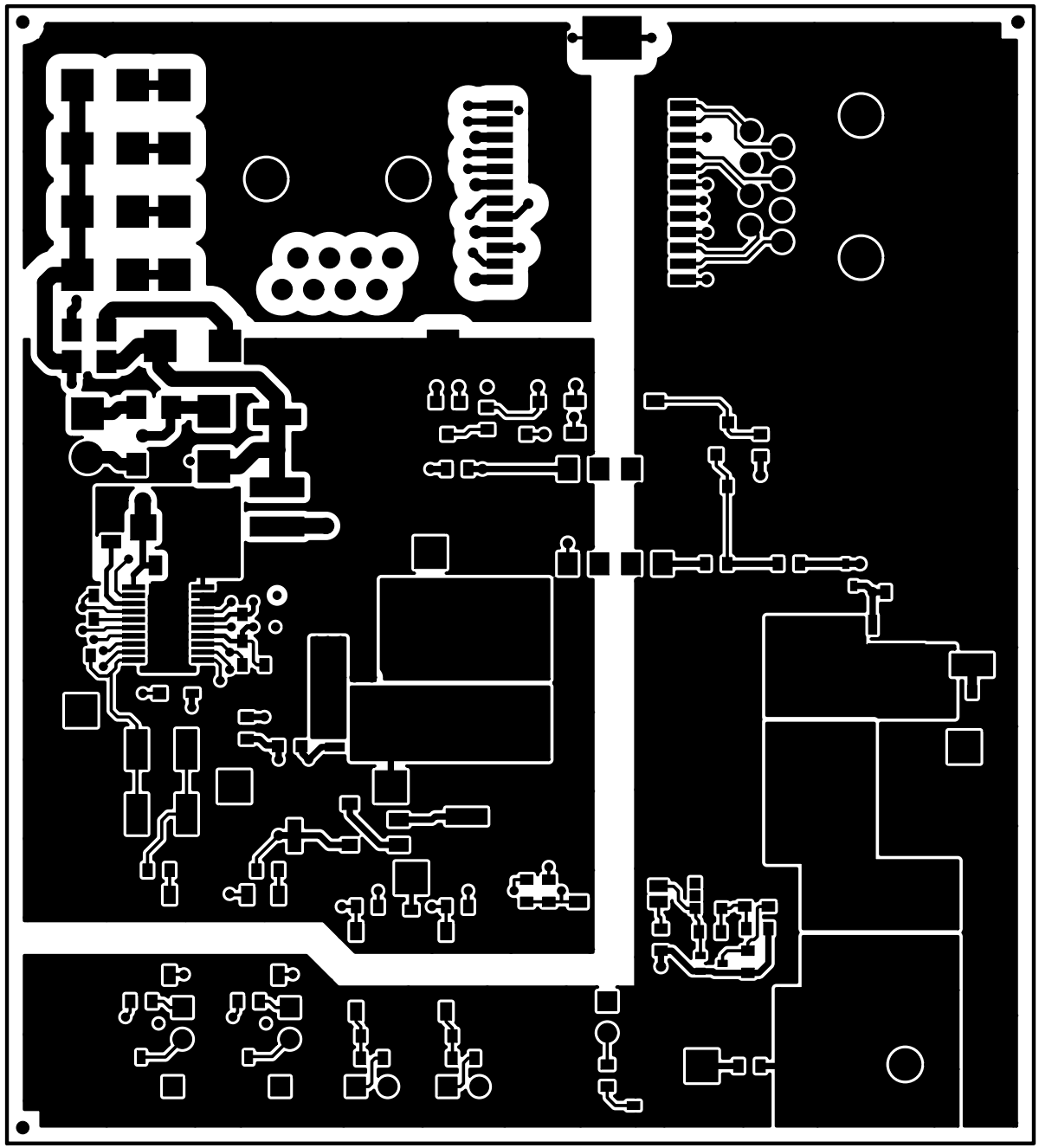
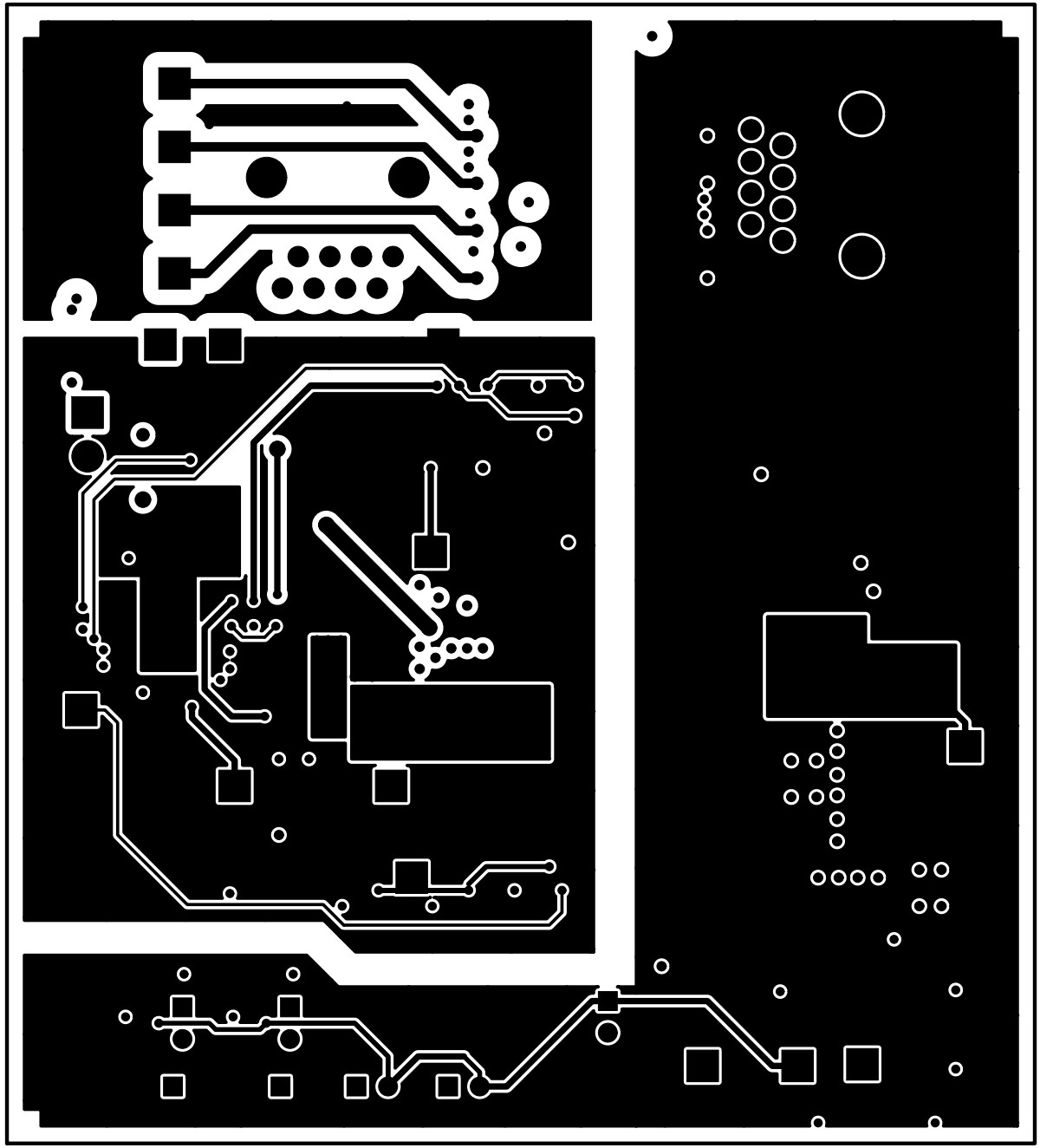
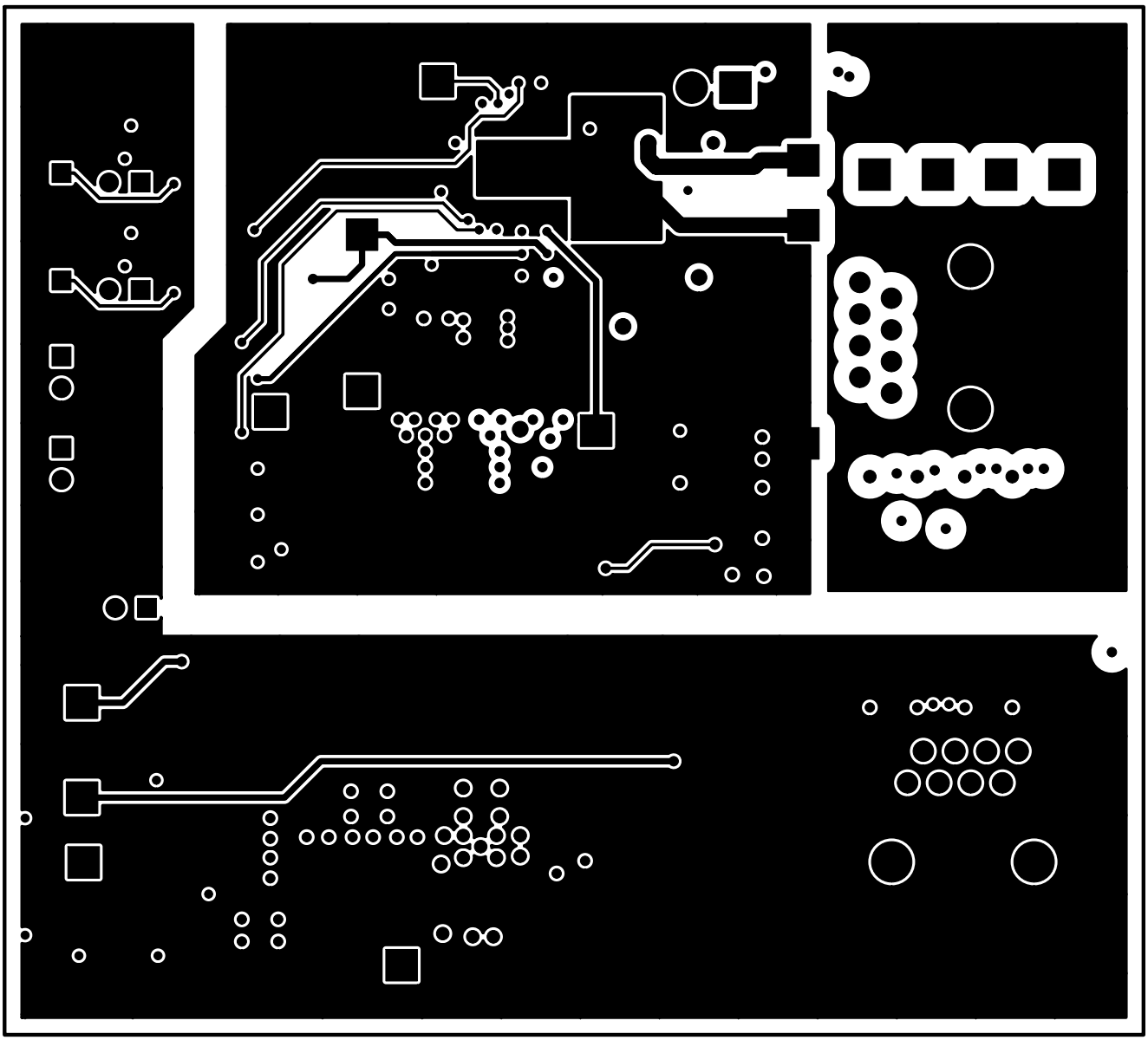
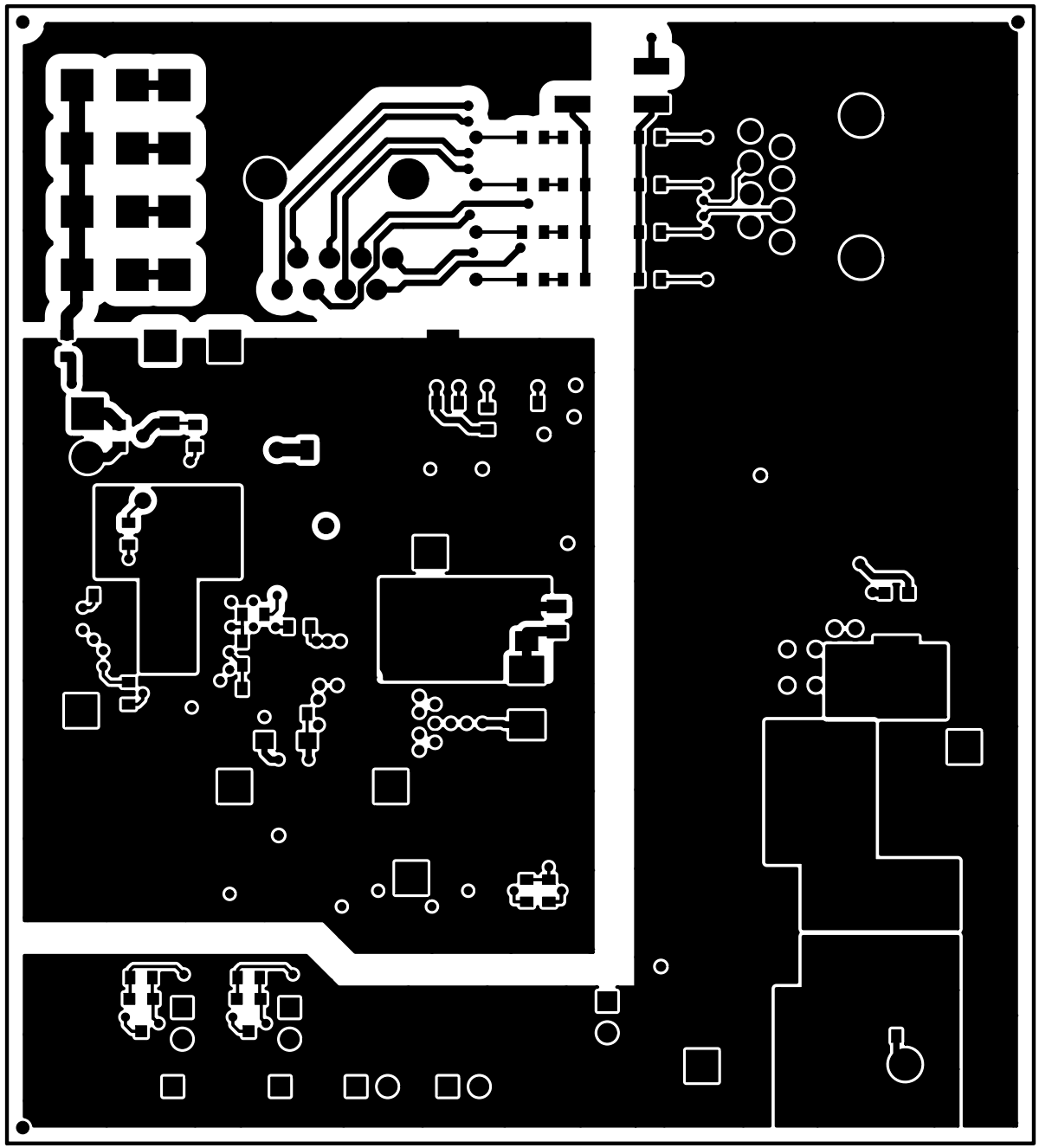
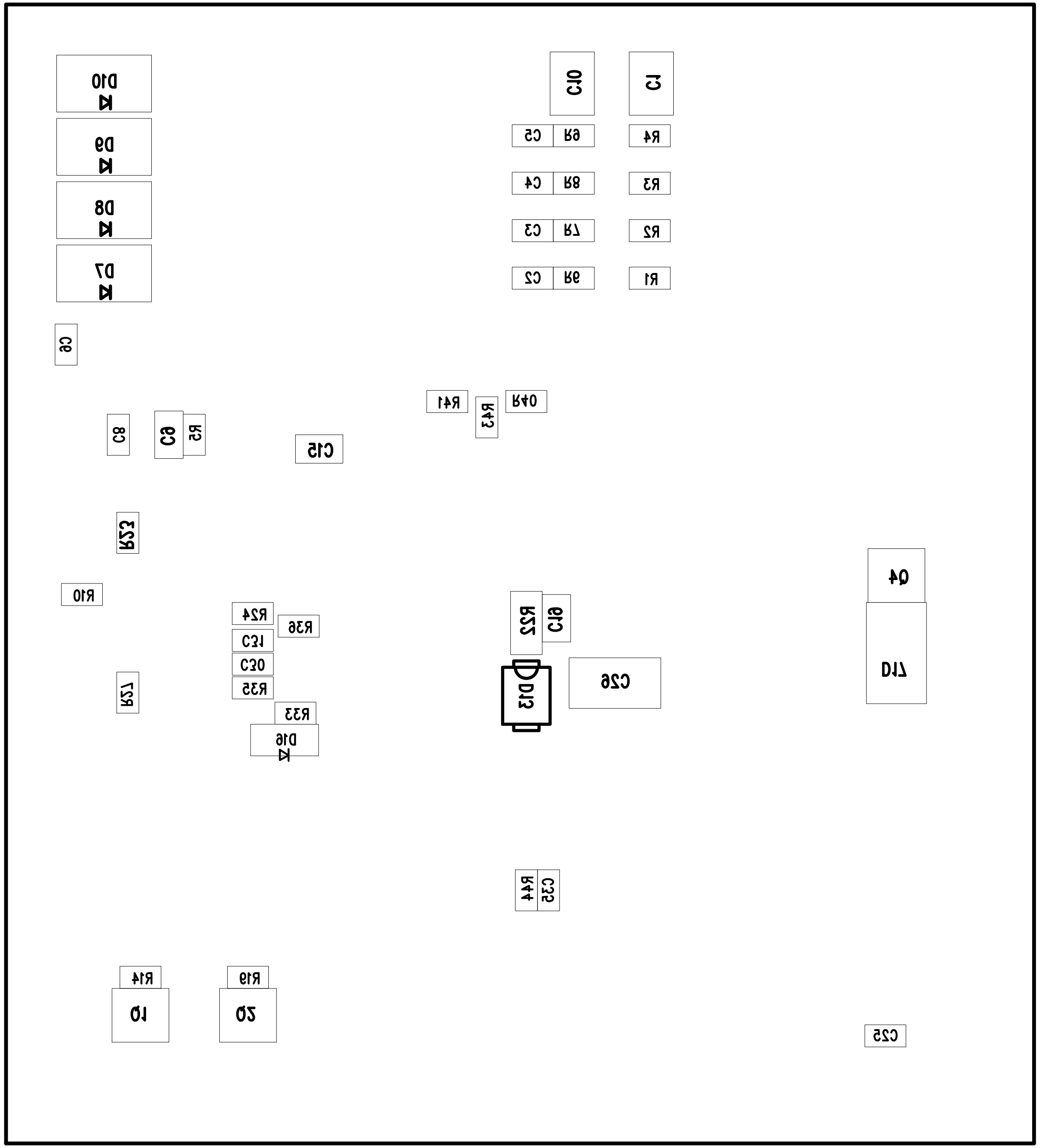




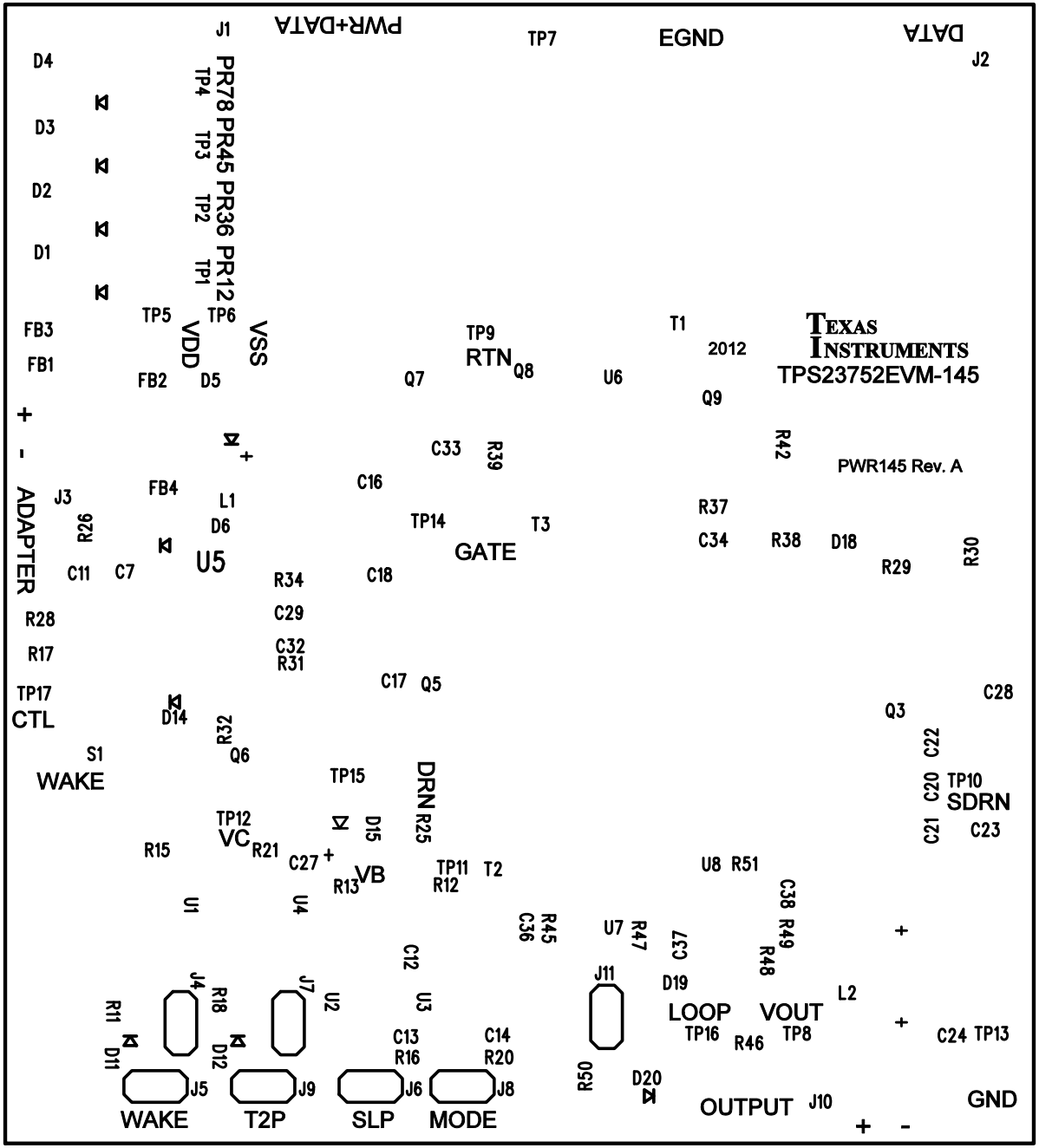




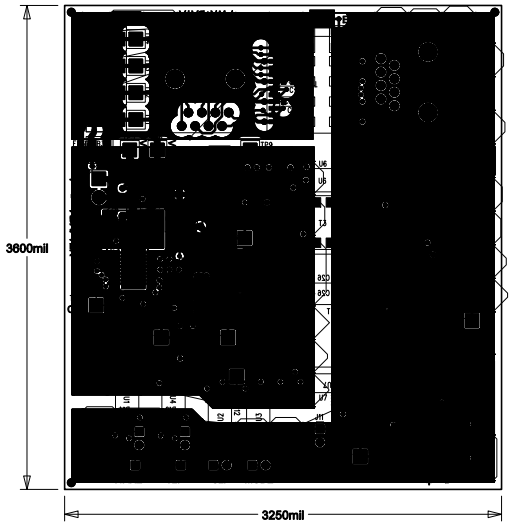
TP7
FRONT
D4
TP4
D3
TP3
D2
TP2
D1
TP1
J1
T1
J2
FRONT
FB3
FB1
TP5
TP6
TP9
FB2
FB4
J3
D5
C16
L1
Q7
R39
Q8
U6
Q9
R42
C33
R37
T3
R26
D6
C7
TP14
C34
R38
D18
R29
C11
R28
R17
TP17
C29
C32
R31
R34
C18
C17
T2
Q3
R30
C28
D14
R32
Q6
Q5
S1
TP12
C27
D15
TP15
R25
TP11
C22
C20
C21
TP10
R15
R21
U1
U4
R13
C12
R12
U2
U3
R45
C36
U7
U8
R51
C38
C37
R49
R47
D19
R48
L2
C23
C24
R11
J4
R18
J7
D11
D12
C13
C14
R16
R20
J5
J9
J6
J8
J11
R50
D20
TP16
R46
TP8
J10
TP13



D10
D9
D8
D7
C10
C1
C5
R9
R4
C4
R8
R3
C3
R7
R2
C2
R6
R1
C6
R41
R43
R40
C8
C9
R5
C15
R23
Q4
R10
R24
R36
C31
C30
R35
R22
C19
C26
D17
R27
D13
R33
D16
R44
C35
R14
R19
Q1
Q2
C25


PWR+DATA
J1
TP7
EGND
DATA
J2
D4
D3
D2
D1
TP4
TP3
TP2
TP1
PR78
PR45
PR36
PR12
TP5
TP6
VDD
VSS
FB3
FB1
FB2
D5
TP9
RTN
Q7
Q8
U6
T1
2012
TEXAS INSTRUMENTS
TPS23752EVM-145
Q9
+
-
ADAPTER
J3
FB4
L1
C33
R39
C16
R42
PWR145 Rev. A
R26
D6
U5
TP14
T3
GATE
R37
C34
R38
D18
R30
R29
C11
C7
R34
C18
R28
C29
R17
C32
R31
TP17
CTL
D14
R32
C17
Q5
C28
Q3
S1
WAKE
Q6
TP15
DRN
C22
C20
TP10
SDRN
C21
C23
TP12
VC
D15
R25
R15
R21
C27
VB
TP11
T2
U8
R51
R13
R12
C38
R49
U1
U4
C36
R45
U7
R47
C37
R48
C12
J11
D19
L2
J4
J7
R18
U2
U3
LOOP
VOUT
R11
C13
C14
TP16
TP8
C24
TP13
R16
R20
R46
D11
D12
R50
D20
J5
J9
J6
J8
WAKE
T2P
SLP
MODE
OUTPUT
J10
GND

C1
C10
R4
C2
R6
R3
C4
R8
R2
C3
R7
R5
C5
R9
R1
C6
D7
D8
D9
D10
C8
R41
C15
R40
R43
C9
R5
R23
Q4
D17
R10
R24
R36
C16
C30
R35
R33
R22
C18
C26
R27
D13
D16
R44
C35
R14
R19
C25
L6
L7



TEXAS INSTRUMENTS		Copper Layer Name				Silkscreen		S Mask		P Mask		Assembly		Drill Drawing
		Top	Internal		Bot	Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PWR145	Rev. A	L1	L2	L3	L4	S1	S4	M1	M4	P1	P4	TA	BA	FB
Date: 6/7/2012	Filename: PWR145E1.PCB	Engineer: E. Wright		PCB Dsgnr: E. Wright		Modified Date: 6/7/2012						Software: PADs v9.3		

FABRICATION CHART

FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT	
			EXTERNAL	INTERNAL
☐ 0.031	■ LAYER 1	■ LAYER 1	☐ 1 OZ.	■ 1 OZ.
■ 0.062	☐ LAYER 2	■ LAYER 2	☐ 2 OZ.	☐ 2 OZ.
☐ 0.093	☐ NONE	☐ NONE	■ OTHER 1.5oz	☐ OTHER
☐ 0.125				

DESIGN	TRACE/GAP SPACING	LAYER COUNT	
☐ SMD	■ 0.010/0.010	☐ SINGLE SIDED	☐ 2 LAYER
☐ THRU-HOLE	☐ 0.008/0.007	■ 4 LAYER	☐ 6 LAYER
■ MIX	☐ 0.006/0.006	☐ 8 LAYER	☐ 10 LAYER
		☐ OTHER	

NOTES: UNLESS OTHERWISE SPECIFIED

1. MATERIAL: ALL MATERIALS, INCLUDING BUT NOT LIMITED TO BASE LAMINATE, BONDING MATERIALS AND SOLDERMASK COATINGS FORMING THE FINISHED PRINTED CIRCUIT BOARD SHALL MEET UL-796 REQUIREMENTS AND BE RoHS COMPLIANT AND HAVE A FLAMMABILITY OF UL94V-0.
2. BASE LAMINATE: PLASTIC SHEET, LAMINATED METAL CLAD, ONE OR TWO SIDES, BASE MATERIAL NEMA TYPE FR-4 OR EQUIVALENT, W/Tg =140 Deg C OR HIGHER. MINIMUM DECOMPOSITION TEMP (Td) OF 320 Deg c. GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 4 LAYER STACK-UP, COMPLIANT WITH LEAD FREE PROCESS.
3. SOLDERMASK: SOLDERMASK OVER BARE COPPER (SMOBC) USING LIQUID PHOTO-IMAGEABLE SOLDERMASK IN ACCORDANCE WITH IPC-SM-840. COLOR: GREEN. MINOR SOLDERMASK ADJUSTMENTS TO FACILITATE PCB FAB AND OR ASSEMBLY IS ALLOWED PROVIDED NO DEFECTS ARE CREATED TO FINAL ASSEMBLY AS A RESULT.
4. TOLERANCES: UNLESS OTHERWISE SPECIFIED PCB TOLERANCES SHALL BE +/- .005 INCHES, HOLE DIAMETERS SHALL BE +/- .003 INCHES.
5. PLATING: HOLES REQUIRING PLATING, SEE HOLE CHART, TO HAVE 1 OZ. (0.0014) MIN. THK MIN. THICK COPPER.
6. FINISH: PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, IMMERSION TIN OR Sn/Ag/Cu, WITH RMA FLUX, 0.0003" to .0005" THICK ALL EXPOSED AREAS AS COATED, NO ACTIVE FLUXES ARE ACCEPTABLE.
7. LEGEND: IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
8. MARKINGS: BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK). LOCATION OPTIONAL.
9. WORKMANSHIP: BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER.
10. DOCUMENTATION: PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER.
11. DRILL SIZES: HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
12. PANEL BORDER: ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
13. PROCESS CHANGES: NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.
14. CONTROLLED IMPEDANCE REQUIRED: ALL PAIRS OF 11 MIL TRACES WITH 8 MIL SPACING BETWEEN THEM ON THE TOP AND BOTTOM LAYER ARE CONTROLLED IMPEDANCE. ALL PAIRS OF 20 MIL TRACES WITH 13 MIL SPACING BETWEEN THEM ON THE TOP AND BOTTOM LAYER ARE CONTROLLED IMPEDANCE. REQUIREMENT FOR THE 11 AND 20 MIL EDGE-COUPLED COATED MICRO STRIP ON THE TOP AND BOTTOM LAYER IS 100 OHMS +/- 10%. CONTROLLED IMPEDANCE APPLIES TO THE FOLLOWING NET PAIRS: PD1P/PD1N, PD2P/PD2N, PD3P/PD3N, PD4P/PD4N, D1P/D1N, D2P/D2N, D3P/D3N, D4P/D4N

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.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265