

Filename: PMP3582_REVA_bom.xls					
Date: 03/05/2009					
PMP3582_REVA BOM					
COUNT	RefDes	Value	Description	Size	Part Number
1	C1	0.1uF	Capacitor, Leaded, 0.10 uF, 275 VAC, X2	0.709 x 0.236 inch	B81130-C1104-Mxxx Epcos
1	C2	0.1uF	Capacitor, Film, 0.1uF, 275VAC, 20±%	0.197 X 0.591 inch	Panasonic
2	C3	1nF	Capacitor, Ceramic, 50V, X7R, 10%	0603	Std Std
1	C4	10nF	Capacitor, Ceramic, 25V, X7R, 10%	0603	Std Std
	C5	1nF	Capacitor, Ceramic, 50V, X7R, 10%	0603	Std Std
1	C6	33uF	Capacitor, Aluminum, 25V, 20% (EB Series)	0.200 * 0.435 inch	Panasonic
2	C7	0.1uF	Capacitor, Ceramic, 50V, X7R, 10%	0805	Std Std
1	C8	4.7nF	Capacitor, Ceramic, 200V, X7R, ±10%	0.200 x 0.216 inch	Panasonic
1	C10	2.2nF, Y1	Capacitor, Ceramic Disk, Y1	0.720 inch	STD Std
1	C11	0.47uF	Capacitor, Ceramic, 25V, X7R, 10%	0805	Std Std
1	C12	47uF	Capacitor, Aluminum, 100V, 20% (FC Series)	0.400 inch	Panasonic
1	C13	2.2uF	Capacitor, Ceramic, 100V, X7R, 10%	1812	Std Std
	C14	0.1uF	Capacitor, Ceramic, 50V, X7R, 10%	0805	Std Std
4	D1	1N4007	Diode, 1000V, 1A	DO-41	1N4007 Diodes
	D2	1N4007	Diode, 1000V, 1A	DO-41	1N4007 Diodes
	D3	1N4007	Diode, 1000V, 1A	DO-41	1N4007 Diodes
	D4	1N4007	Diode, 1000V, 1A	DO-41	1N4007 Diodes
1	D5	18V, 1W	Diode, Zener, 18-V, 1W	DO-41	1N4746A Vishay
2	D6	FR107	Diode, Fast, 800V, 1A	DO-41	FR107 Diodes
1	D7	BAT54S	Diode, Dual Schottky, Series, 200-mA, 30-V	SOT23	BAT54S Zetex
	D8	FR107	Diode, Fast, 800V, 1A	DO-41	FR107 Diodes
1	D9	MURS340	Diode, Ultrafast, 3A, 400V	DO-214AA	MURS340 Diodes
1	D10	BZX84C12T	Diode, Zener, 12-V, 350-mW	SOT-23	BZX84C12T Diodes
2	D11	BZX84C33T	Diode, Zener, 33-V, 350-mW	SOT-23	BZX84C33T Diodes
	D12	BZX84C33T	Diode, Zener, 33-V, 350-mW	SOT-23	BZX84C33T Diodes
1	F1	1A	Fuse	5x20mm	193-1500-00x Wickmann
1	HS1	531002b02500	Heatsink, TO-220/218 veritcal	0.640 x 0.640 inch	634-xxxAyy Wakefield
1	L1	2.2mH	Common mode Inductor, 0.5A, 1ohm	0.433 x 0.670 inch	UU9.8V-xxx GCI
2	L2	500uH	Inductor, 8RHB2 type, 0.5A	0.315 DIA inch	822MY-xxxx Toko
	L3	500uH	Inductor, 8RHB2 type, 0.5A	0.315 DIA inch	822MY-xxxx Toko
1	Q1	FQP8N60C	Transistor, NFET, 600V, 8A	TO-220AB	FQP8N60C Fairchild
3	R1	220K	Resistor, Chip, 1/8W, 5%	1206	Std Std
	R2	220K	Resistor, Chip, 1/8W, 5%	1206	Std Std
	R3	220K	Resistor, Chip, 1/8W, 5%	1206	Std Std
1	R4	33.2K	Resistor, Chip, 1/16W, 1%	0603	Std Std
1	R5	0	Resistor, Chip, 1/16W, 1%	0603	Std Std
1	R6	10	Resistor, Chip, 1/16W, 1%	0603	Std Std
1	R7	22	Resistor, Chip, 1/16W, 1%	0603	Std Std
1	R8	15	Resistor, Chip, 1/8W, 5%	1206	CRCW1206-xxx-J Vishay
1	R9	0.22	Resistor, Chip, 1/2W, 5%	2010	Std Std
1	R10	12K	Resistor, Chip, 1/8W, yy%	1206	Std Std
1	R11	10K	Resistor, Chip, 1/16W, 1%	0603	std std
1	R12	14K	Resistor, Chip, 1/16W, 1%	0603	Std Std
1	R13	51.1K	Resistor, Chip, 1/16W, 1%	0603	std std
1	R14	15.4K	Resistor, Chip, 1/16W, 1%	0603	Std Std
2	R15	1K	Resistor, Chip, 1/16W, 1%	0603	std std
1	R16	100	Resistor, Chip, 1/16W, 1%	0603	std std
1	R17	0.22	Resistor, Chip, 1/10W, yy%	0805	Std Std
	R18	1K	Resistor, Chip, 1/16W, 1%	0603	std std
1	R19	47K	Resistor, Metal Oxide, 47KOhms, 1W, 5%	0.130 * 0.600 inch	ERG-1SJxxx Panasonic
1	RT1	275V	MOV	0.472 x 0.157 inch	B72210SxxxxK101 Epcos
1	T1	EE-25H	Transformer, Power	0.630 x 1.114 inch	EE-25 Custom
1	U1	UCC28600D	IC, Quasi-Resonant Flyback Green Mode Controller	SO8	UCC28600D TI
1	U2	PC817A	IC, Optocoupler	DIP-4A	PC817A Sharp
1	U3	TL103WID	IC, Dual Op Amp With Internal Reference	SO8	TL103WID TI
1	TP1	5001	Test Point, Black, Thru Hole Color Keyed	0.100 x 0.100 inch	5001 Keystone
3	TP2	5002	Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002 Keystone
	TP3	5002	Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002 Keystone
1	TP4	5002	Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002 Keystone
	TP6	5002	Test Point, White, Thru Hole Color Keyed	0.100 x 0.100 inch	5002 Keystone
1	TP7	5000	Test Point, Red, Thru Hole Color Keyed	0.100 x 0.100 inch	5000 Keystone
1	TP8	5010	Test Point, Red, Thru Hole	0.125 x 0.125 inch	5010 Keystone
3	TP9	5011	Test Point, Black, Thru Hole	0.125 x 0.125 inch	5011 Keystone
	TP10	5011	Test Point, Black, Thru Hole	0.125 x 0.125 inch	5011 Keystone

Filename: PMP3582_REVA_bom.xls					
Date: 03/05/2009					
		PMP3582_REVA BOM			
COUNT	RefDes	Value	Description	Size	Part Number
	TP11	5011	Test Point, Black, Thru Hole	0.125 x 0.125 inch	5011
1	J1	4300.0097	Header, 2-pin, 5mm spacing	0.197 inch x 2	ED1660
1	J2	D120/2DS	Terminal Block, 2-pin, 15-A, 5.1mm	0.40 x 0.35 inch	D120/2DS
Notes:		1. These assemblies are ESD sensitive, ESD precautions shall be observed.			
		2. These assemblies must be clean and free from flux and all contaminants.			
		Use of no clean flux is not acceptable.			
		3. These assemblies must comply with workmanship standards IPC-A-610 Class 2.			
		4. Ref designators marked with an asterisk (**) cannot be substituted.			
		All other components can be substituted with equivalent MFG's components.			

Magnetic Details for PMP3582 Project

Switching Power Transformer Magnetic details

Core Type	Core Material	Bobbin	Isolation Voltage	Quantity
EI-28	CF139/N87	10Pin(Vertical)	1500V AC	10

Winding Details

Winding	No. of Turns	Wire Gauge	Start Pin	End Pin	Inductance
W1	45	29 SWG x 2	2	1	330 μ H $\pm$ 10%
W2	9	36 SWG	3	4	13 μ H $\pm$ 10%
W3	30	29 SWG x 2	9	10	150 μ H $\pm$ 10%

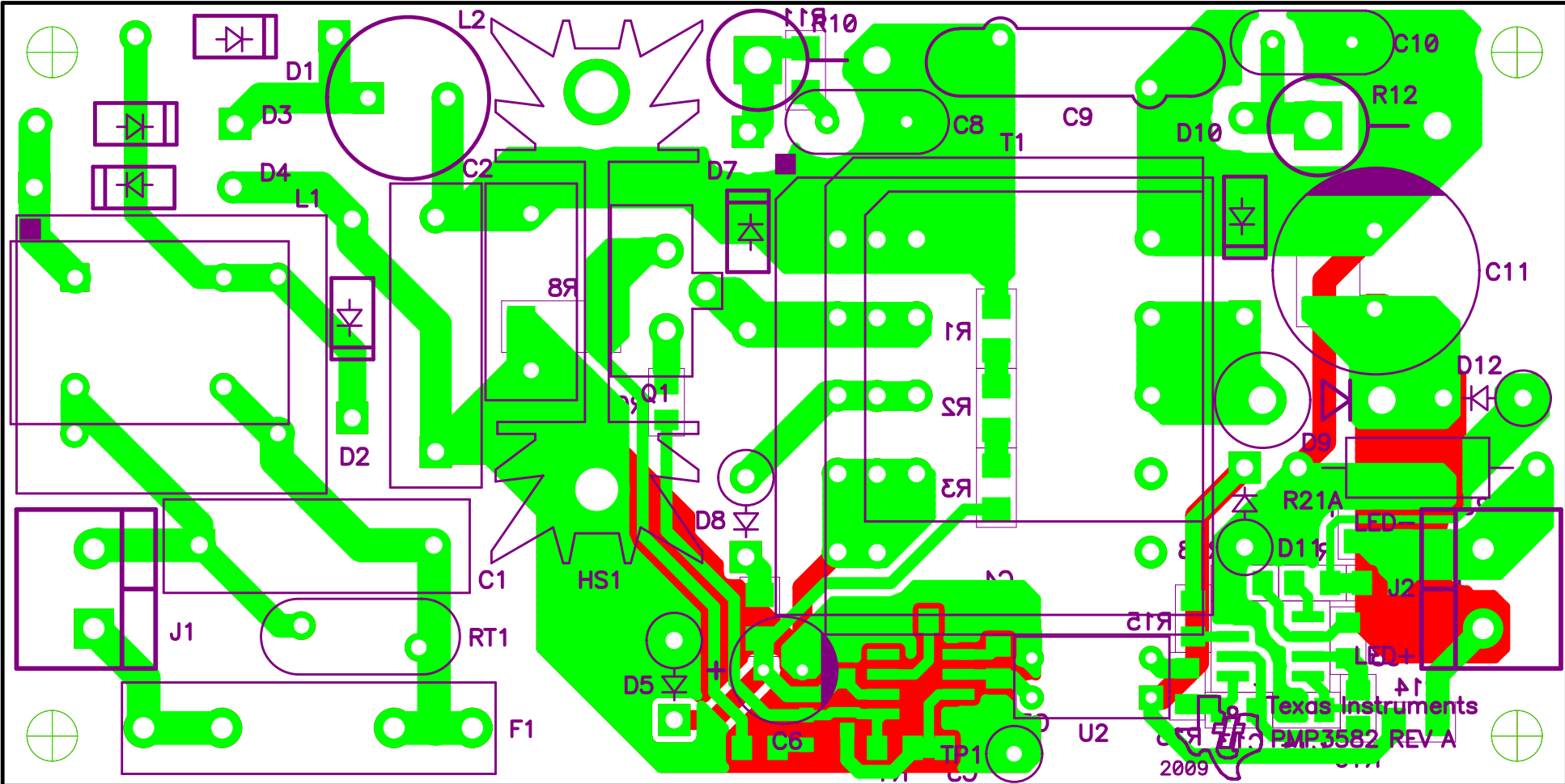
Electrical requirements

- Leakage Inductance (Pin1-2) - 7 μ H (max) with all other windings/pins shorted
- Insulation Voltage - Between 1 - 5 pins shorted and to pins 9 & 10 shorted together
- 1500V AC for 1min

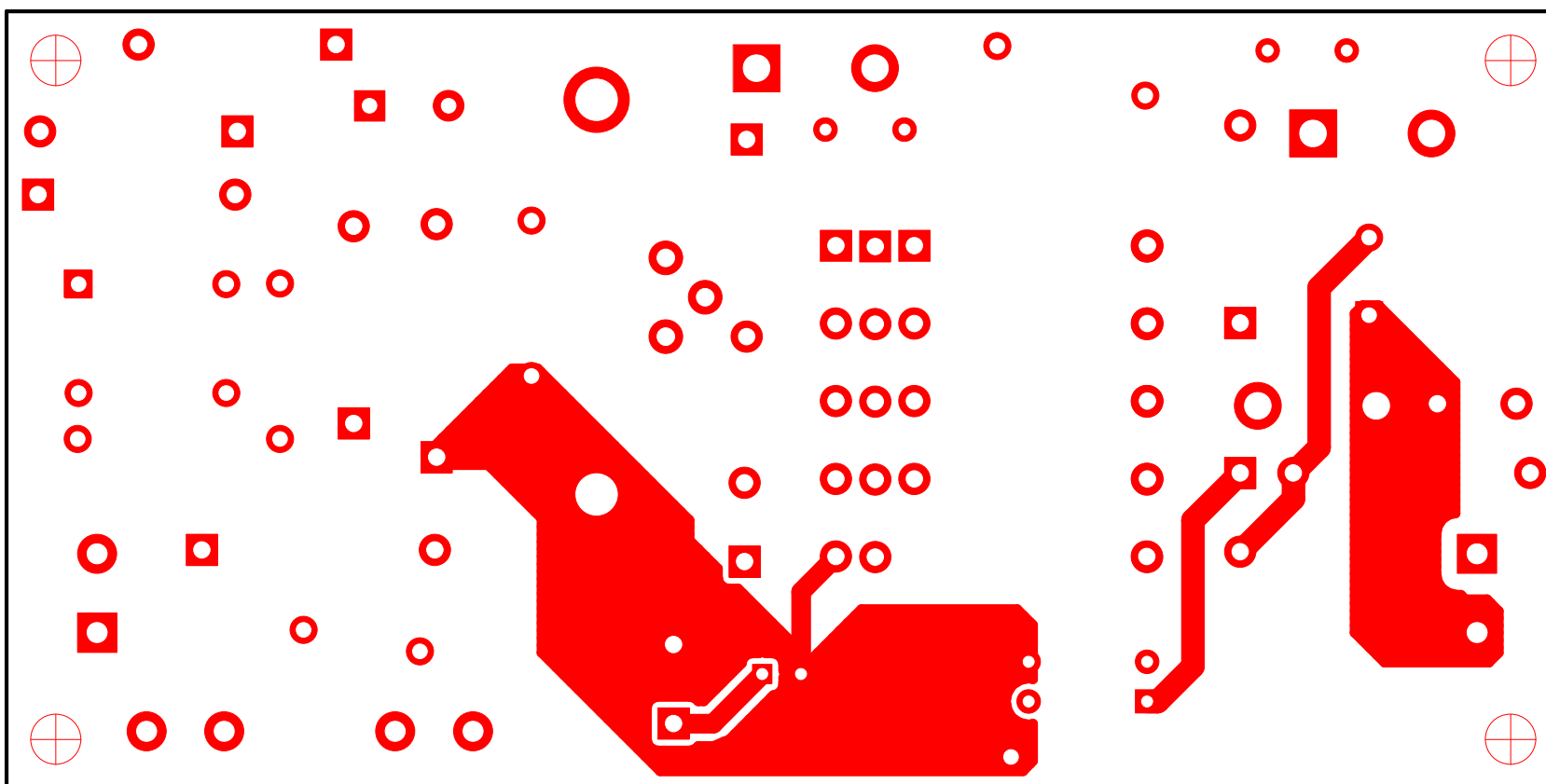
Transformer Construction -

Winding Procedure:

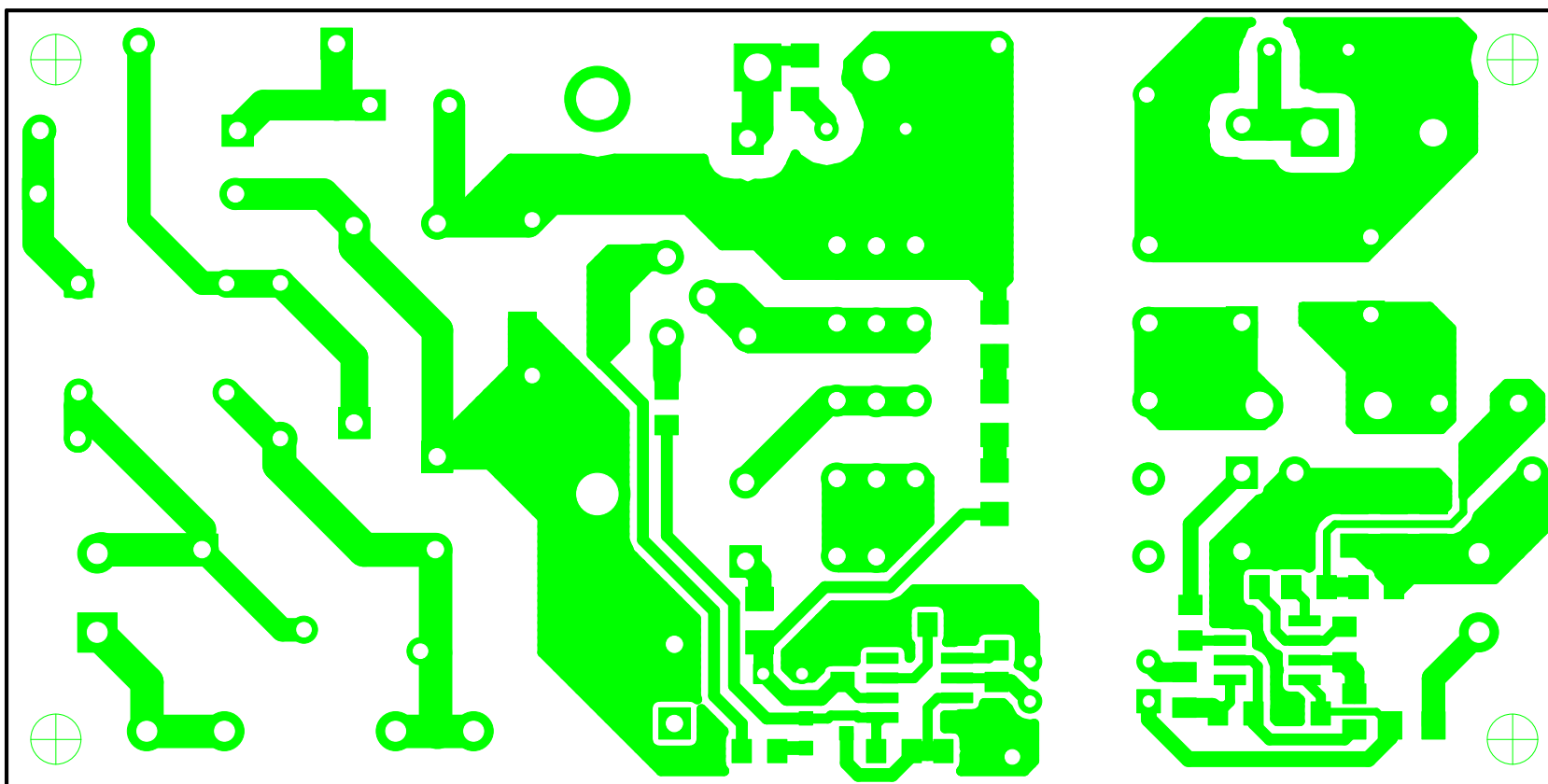
- ➔ Start with half primary (W1) starting at Pin 2 and end as flying lead in two layers
- ➔ Insulation
- ➔ Bias (W2) in one layer, start at 3, end at 4
- ➔ Double Insulation
- ➔ Wind secondary (W3) in three layers, start at pin 9, end at 10.
- ➔ Double Insulation
- ➔ Wind half primary (W1) continuing at flying lead and ending at pin 1 in two layers
- ➔ Double Insulation



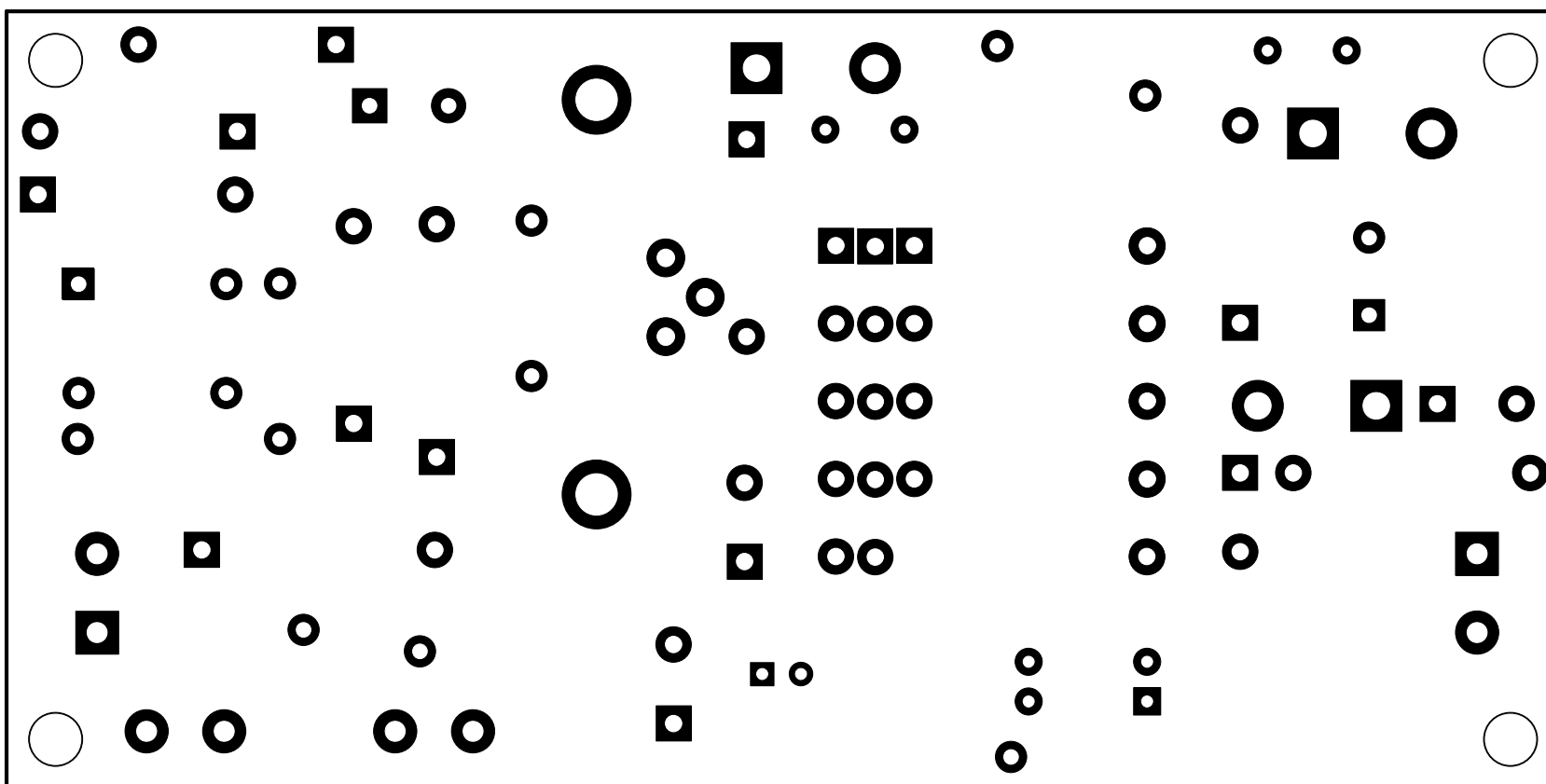
TC BC TS BS



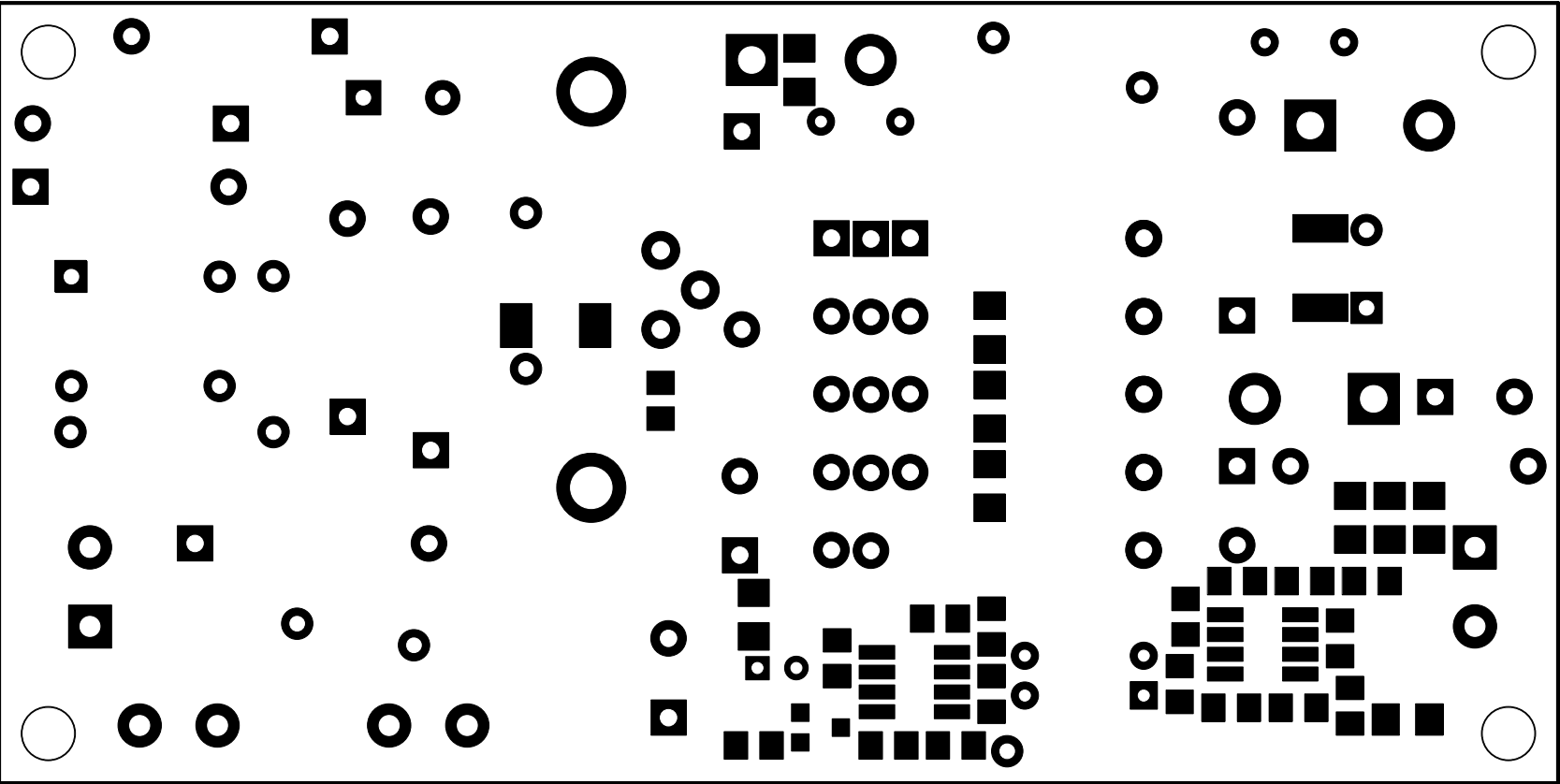
TEXAS INSTRUMENTS			Copper		Silkscreen		S Mask		Assembly		Fab Drawing
			Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PMP 3582			Rev. A		TC						
Date: 21/04/2009	Filename: PMP3582_REVA.pcb	Engineer: Salil Chellappan	PCB Dsgnr: Salil C		Modified Date: Wed Apr 22, 2009				Time Stamp: 15:48:15		



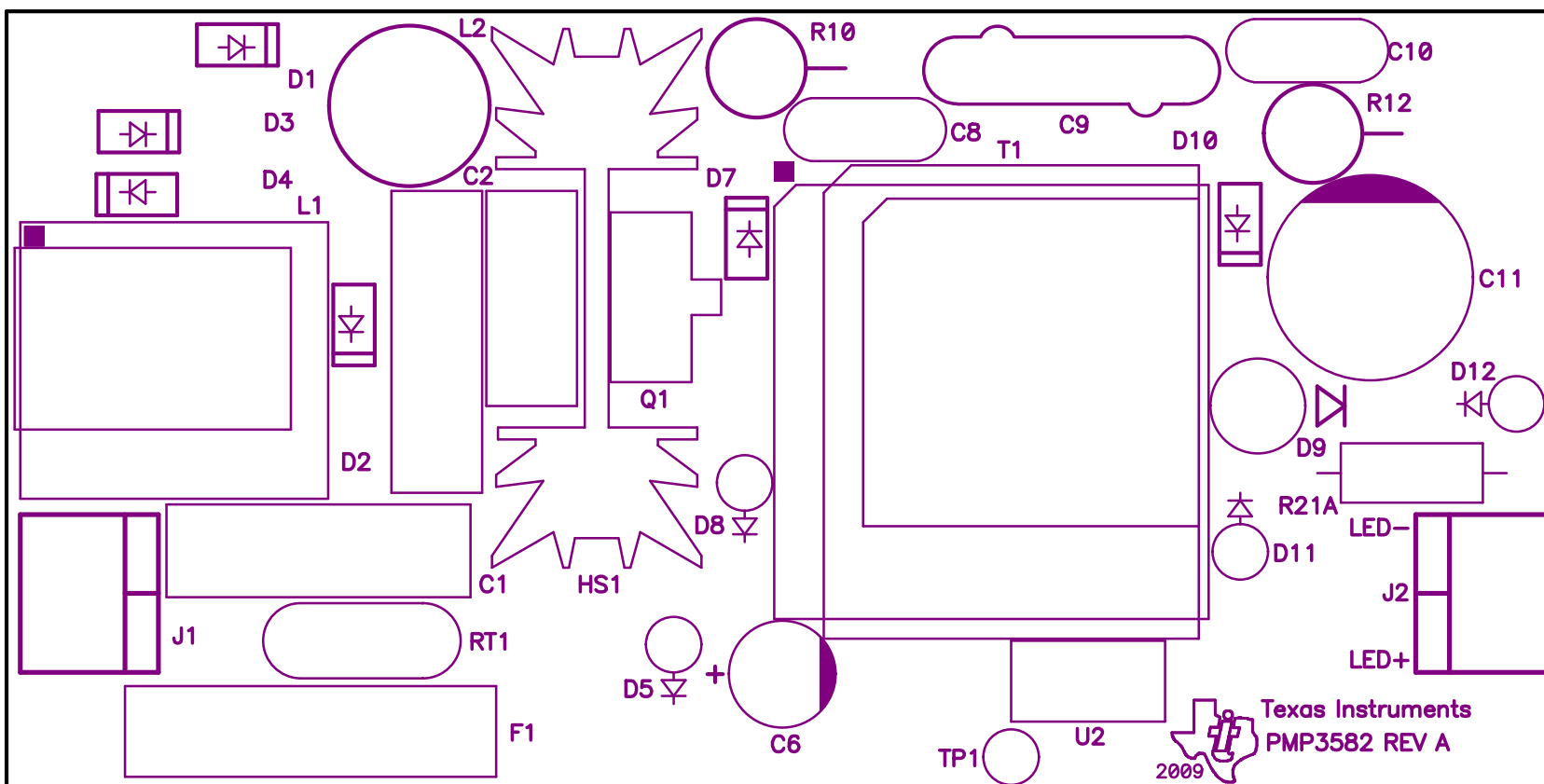
TEXAS INSTRUMENTS		Copper		Silkscreen		S Mask		Assembly		Fab Drawing
		Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No.	PMP 3582	Rev.	A		BC					
Date:	Filename:	Engineer:		PCB Dsgnr:		Modified Date:		Time Stamp:		
21/04/2009	PMP3582_REVA.pcb	Salil Chellappan		Salil C		Wed Apr 22, 2009		15:48:15		



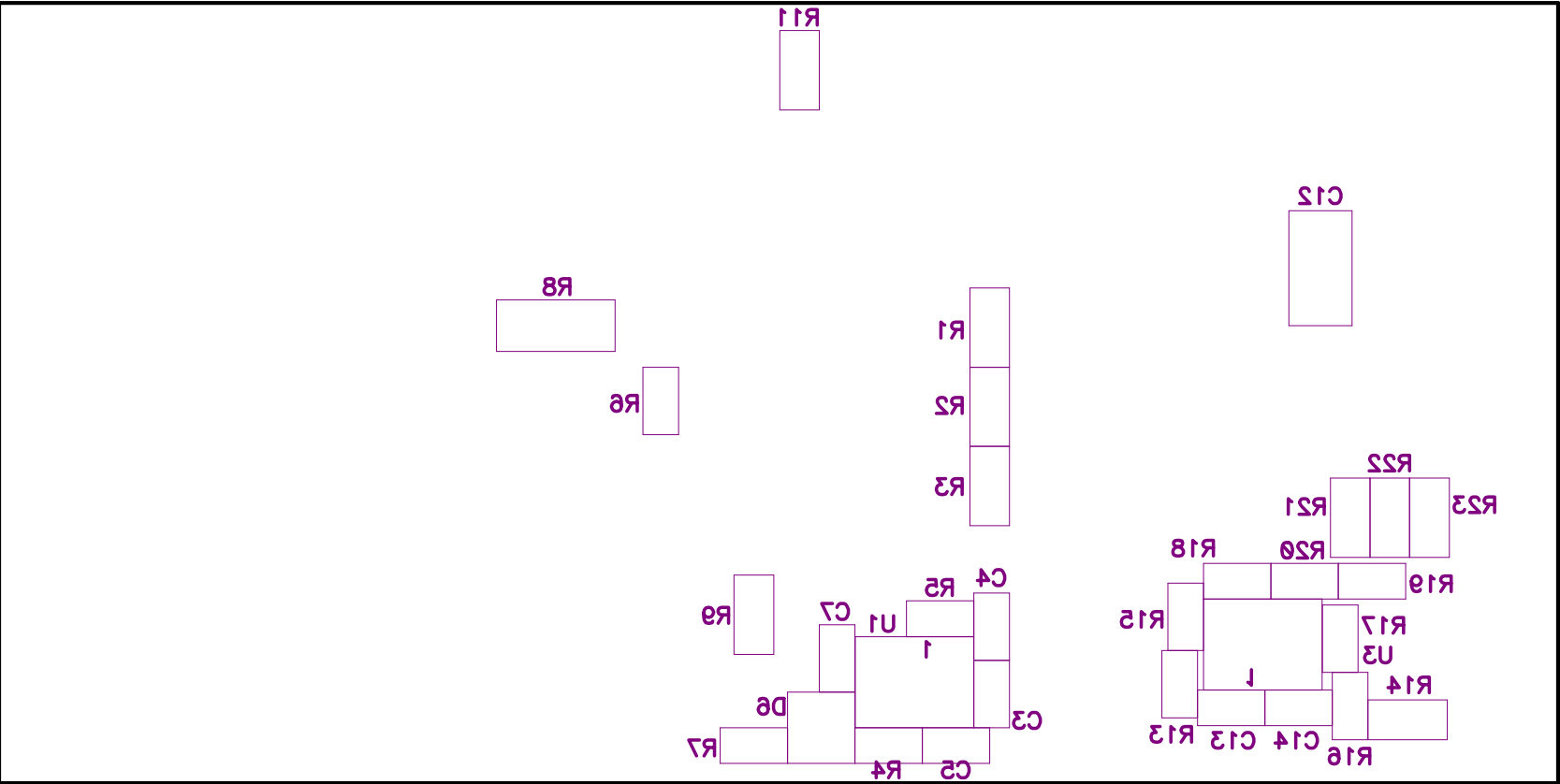
TEXAS INSTRUMENTS			Copper		Silkscreen		S Mask		Assembly		Fab Drawing
			Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PMP 3582			Rev. A						TM		
Date: 21/04/2009	Filename: PMP3582_REVA.pcb	Engineer: Salil Chellappan	PCB Dsgnr: Salil C			Modified Date: Wed Apr 22, 2009			Time Stamp: 15:48:15		



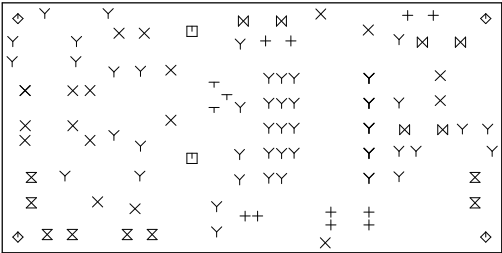
TEXAS INSTRUMENTS			Copper		Silkscreen		S Mask		Assembly		Fab Drawing
			Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PMP 3582		Rev. A							BM		
Date: 21/04/2009	Filename: PMP3582_REVA.pcb	Engineer: Salil Chellappan		PCB Dsgnr: Salil C		Modified Date: Wed Apr 22, 2009			Time Stamp: 15:48:15		



TEXAS INSTRUMENTS			Copper		Silkscreen		S Mask		Assembly		Fab Drawing
			Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PMP 3582			Rev. A			TS					
Date: 21/04/2009	Filename: PMP3582_REVA.pcb	Engineer: Salil Chellappan	PCB Dsgnr: Salil C		Modified Date: Wed Apr 22, 2009			Time Stamp: 15:48:15			



TEXAS INSTRUMENTS			Copper		Silkscreen		S Mask		Assembly		Fab Drawing
			Top	Bot	Top	Bot	Top	Bot	Top	Bot	
Board No. PMP 3582		Rev. A				BS					
Date: 21/04/2009	Filename: PMP3582_ REVA.pcb	Engineer: Salil Chellappan	PCB Dsgnr: Salil C		Modified Date: Wed Apr 22, 2009			Time Stamp: 15:48:15			



TEXAS INSTRUMENTS				Copper		Silkscreen		S Mask		Assembly		Fab Drawing	
				Top	Bot	Top	Bot	Top	Bot	Top	Bot		
Board No. PMP 3582				Rev. A									FB
Date: 21/04/2009		Filename: PMP3582_REVA.pcb		Engineer: Salli Chellappan		PCB Design: Salli C		Modified Date: Wed Apr 22, 2009		Time Stamp: 15:48:15			

Drill Table			
Hole Dia (inch)	Symbol	Quantity	Plated
0.028	+	10	Yes
0.038	X	19	Yes
0.042	-	54	Yes
0.046	⊗	3	Yes
0.052	⊗	8	Yes
0.068	⊗	6	Yes
0.107	⊗	2	Yes
0.128	⊗	4	No

FABRICATION CHART			
FINISHED THICKNESS	SILKSCREEN	SOLDERMASK	FINISHED COPPER WEIGHT
☐ 0.031 ☒ 0.062 ☐ 0.093 ☐ 0.125	☒ LAYER 1 ☒ LAYER 2 ☐ NONE	☒ LAYER 1 ☒ LAYER 2 ☐ NONE	☐ 1 OZ. ☒ 2 OZ. ☐ OTHER _____
DESIGN	TRACE/GAP SPACING	LAYER COUNT	
☐ SMD ☐ THRU-HOLE ☒ MIX	☒ 0.010/0.010 ☐ 0.008/0.007 ☐ 0.006/0.006	☐ SINGLE SIDED ☒ 2 LAYER ☐ 4 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, TWO SIDES, BASE MATERIAL NEMA TYPE FR-4 GLASS EPOXY RESIN, COPPER-CLAD IN ACCORDANCE WITH 2 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.
4. PLATING:

NO PLATING IN HOLES REQUIRED.
5. FINISH:

PLATE WITH RoHS COMPLIANT, IMMERSION SILVER PREFERRED, IMMERSION TIN OR Sn/Ag/Cu, WITH RMA FLUX, 0.0005" +/- 0.0003" THICK MIN ALL EXPOSED AREAS AS COATED, NO ACTIVE FLUXES ARE ACCEPTABLE.
6. LEGEND:

IF REQUIRED, SILKSCREEN LEGEND(S) WITH WHITE NON-CONDUCTIVE EPOXY INK.
7. MARKINGS:

BOARD MUST BEAR VENDOR'S IDENTIFICATION CODE (ETCH OR WHITE NON-CONDUCTIVE INK). LOCATION OPTIONAL.
8. WORKMANSHIP:

BOARD IS TO BE MANUFACTURED PER IPC-A-600 CLASS 2 REQUIREMENTS OR BETTER.
9. DOCUMENTATION:

PCB VENDOR IS REQUIRED TO RETURN ANY AND ALL DOCUMENTS SUPPLIED OR ULTIMATELY PURCHASED BY TEXAS INSTRUMENTS UPON COMPLETION OF PURCHASE ORDER.
10. DRILL SIZES:

HOLE DIAMETERS SHOWN ARE FINISHED SIZES AFTER PLATING UNLESS OTHERWISE NOTED.
11. PANEL BORDER:

ANY METAL IN BORDER AREA INCLUDING PART NUMBER, DATECODE AND/OR REVISION LETTERS MUST BE COVERED WITH SOLDERMASK.
12. PROCESS CHANGES:

NO DIMENSIONAL, MATERIAL, OR PROCESS CHANGES ARE ALLOWED WITHOUT PRIOR EXPLICIT WRITTEN PERMISSION FROM TEXAS INSTRUMENTS.