



China Power Reference Design

PMP4323 Test Procedure

REV A

11/18/2011

1 General

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4323.

1.2 REFERENCE DOCUMENTATION

Schematic PMP4323_SCH_RevA.PDF

Assembly PMP4323_PCB_RevA.PDF

BOM list

1.3 TEST EQUIPMENTS

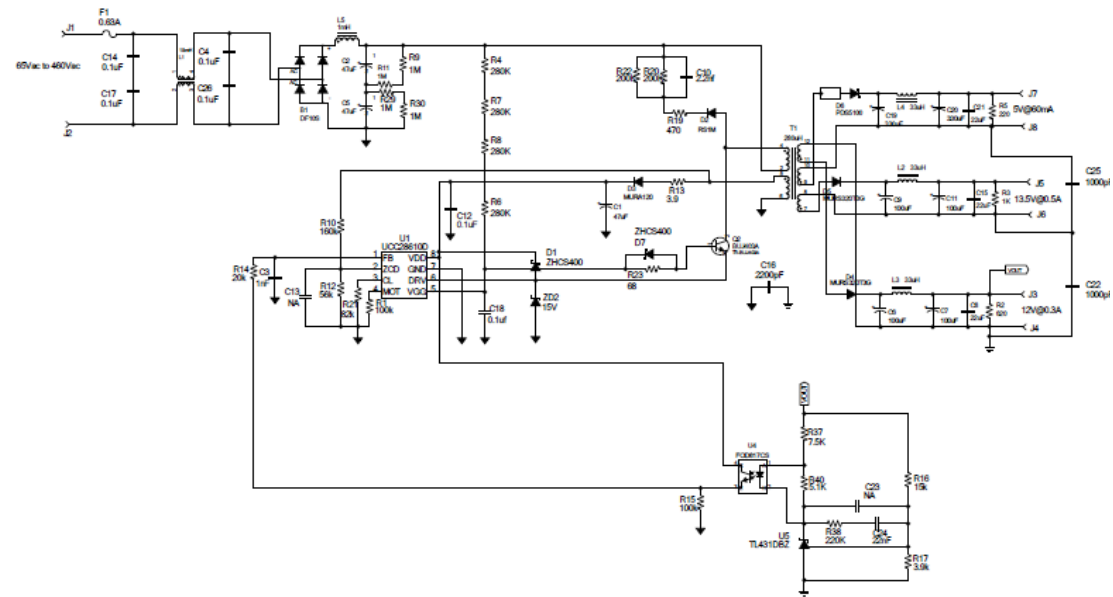
Multi-meter: Fluke 289

DC Source: Chroma 62012P-600-8

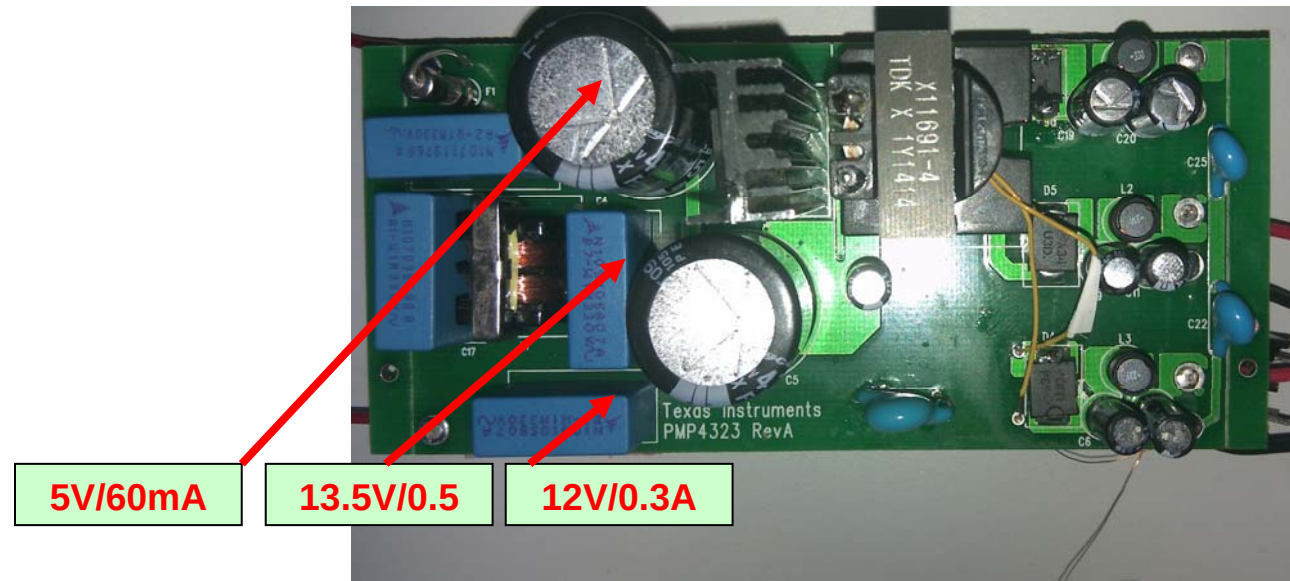
E-load: Chroma 6312

Oscilloscope: TDS3034C

2 Schematics

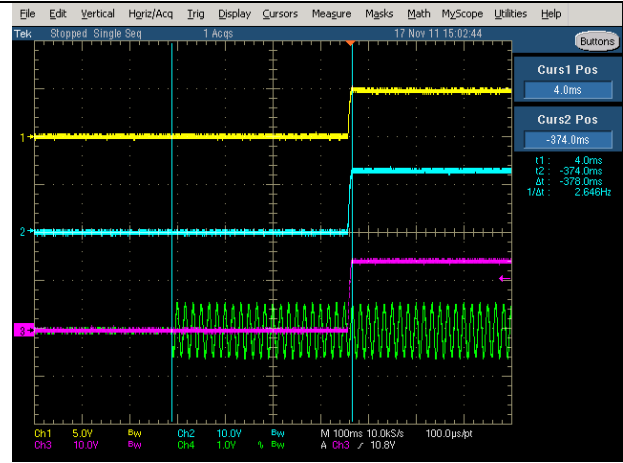


3 Demo Board

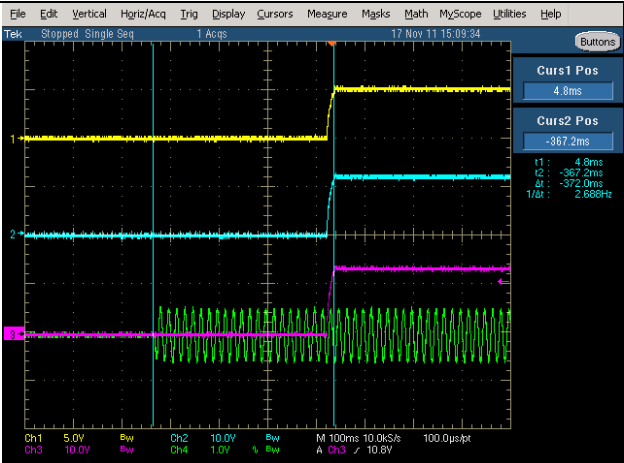


4 Electric Performance

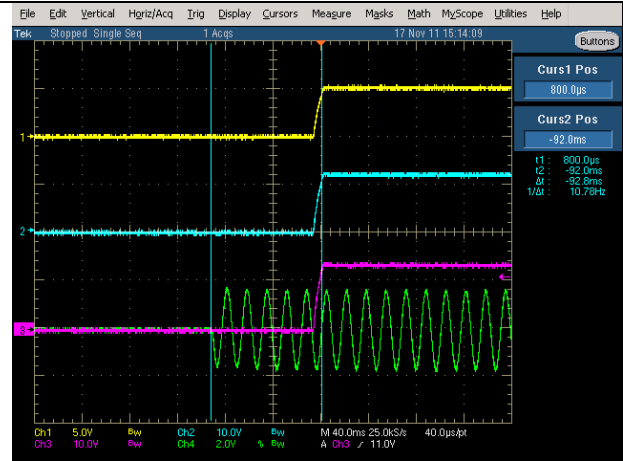
4.1 Start Up



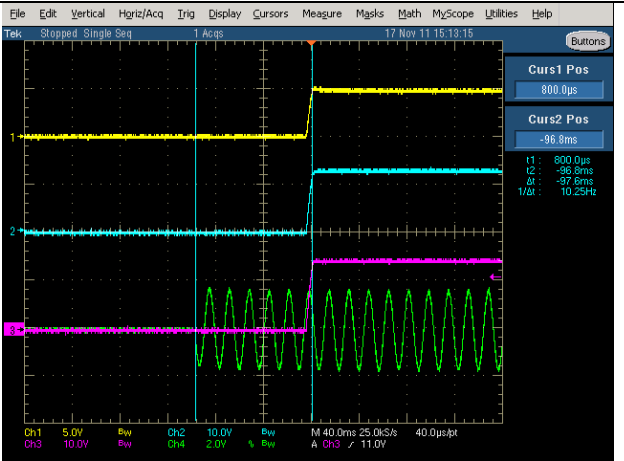
75Vac No load Start up



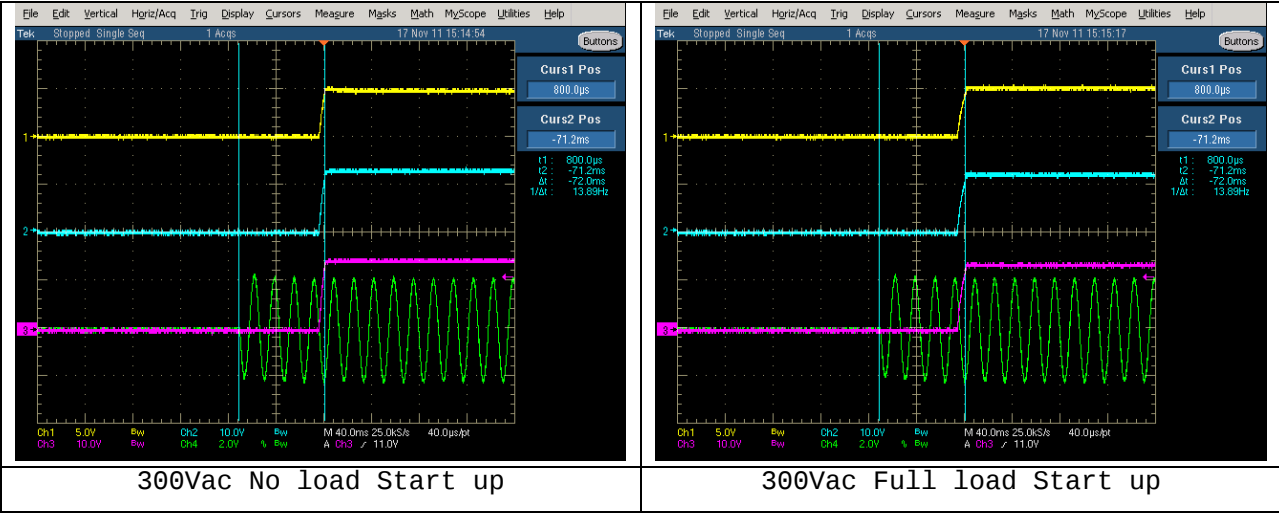
75Vac Full load Start up



230Vac No load Start up



230Vac Full load Start up



File Edit Vertical Horiz/Acq Trig Display Cursors Measure Masks Math MyScope Utilities Help

Tek Stopped Single Seq 1 Acqs 17 Nov 11 15:16:17

Curs1 Pos

800.0µs

Curs2 Pos

-71.2ms

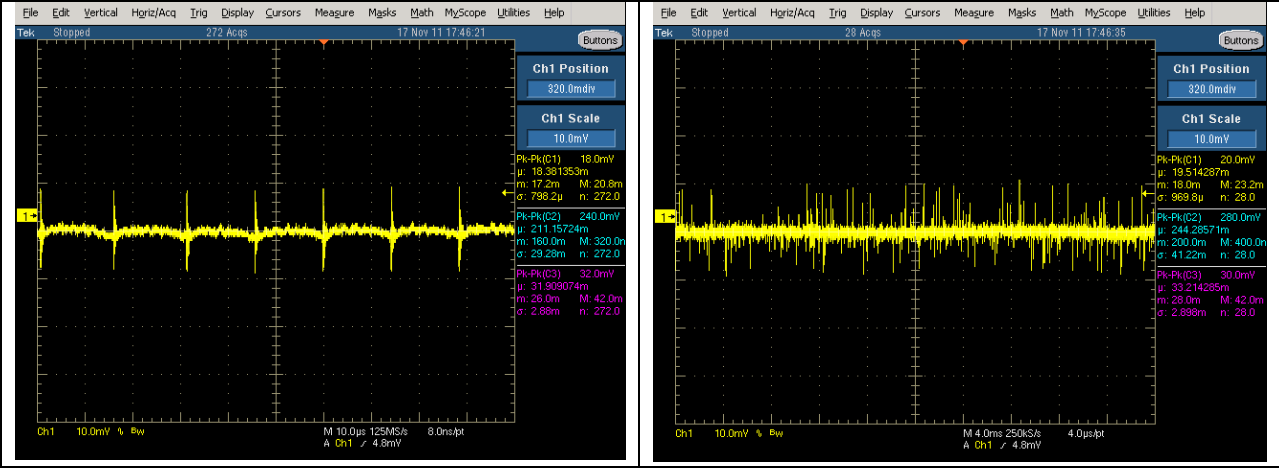
t1: 800.0µs
t2: -71.2ms
Δt: -72.0ms
1/Δt: 13.55kHz

Ch1 5.0V 10.0V 5V Ch2 10.0V 5V Ch3 10.0V 5V M 40.0ms 25.0kS/s 40.0µs/div A Ch3 11.0V

300Vac Full load Start up

4.2 Output Ripple

Requirement: 12V ripple<120mV 5V Ripple<50mV



File Edit Vertical Horiz/Acq Trig Display Cursors Measure Masks Math MyScope Utilities Help

Tek Stopped 28 Acqs 17 Nov 11 17:46:35

Ch1 Position

320.0mdiv

Ch1 Scale

10.0mV

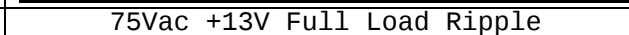
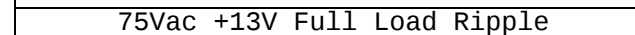
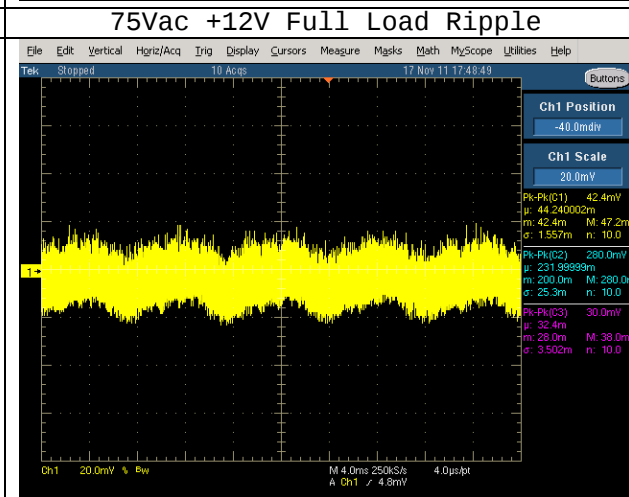
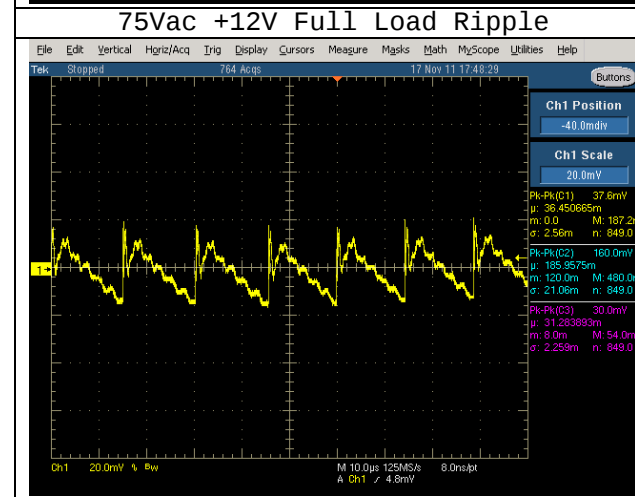
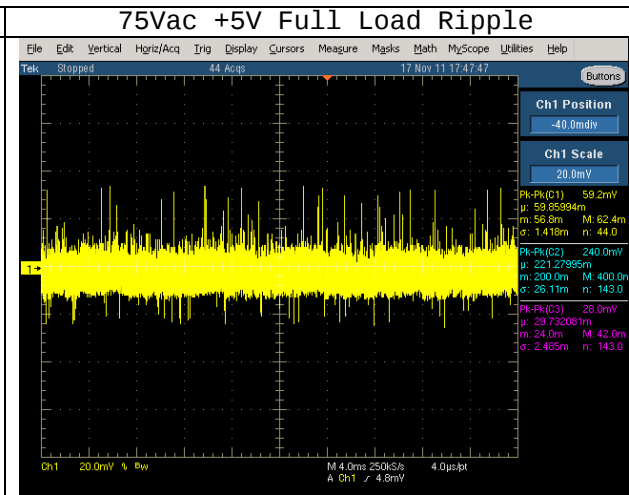
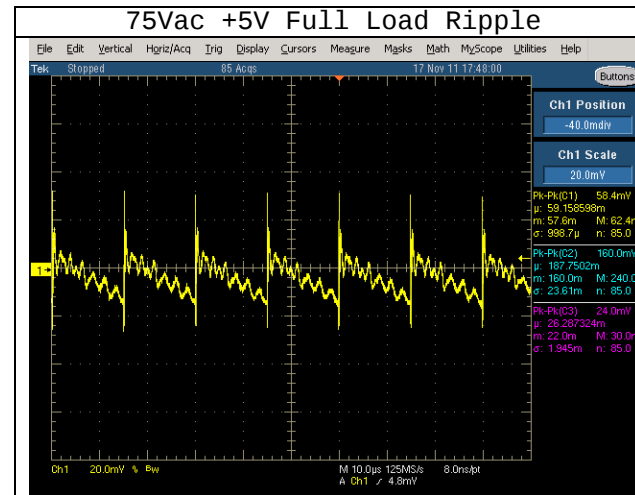
Pk-Pk(C1) 20.0mV
µ: 19.514287m
m: 16.0m M: 23.2m
σ: 969.8µ n: 28.0

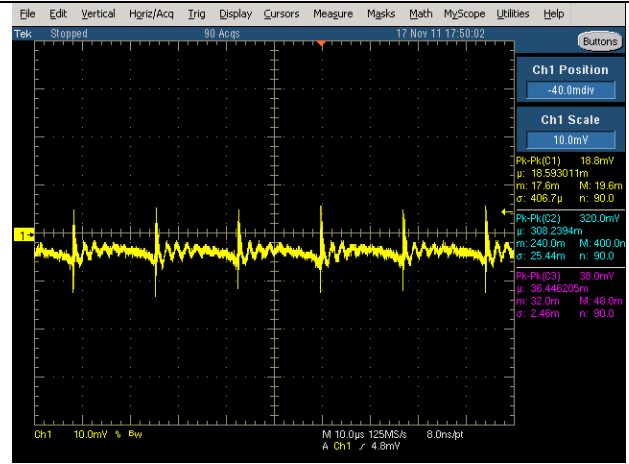
Pk-Pk(C2) 280.0mV
µ: 244.28571m
m: 200.0m M: 400.0m
σ: 41.22m n: 28.0

Pk-Pk(C3) 30.0mV
µ: 32.214286m
m: 28.0m M: 42.0m
σ: 2.898m n: 28.0

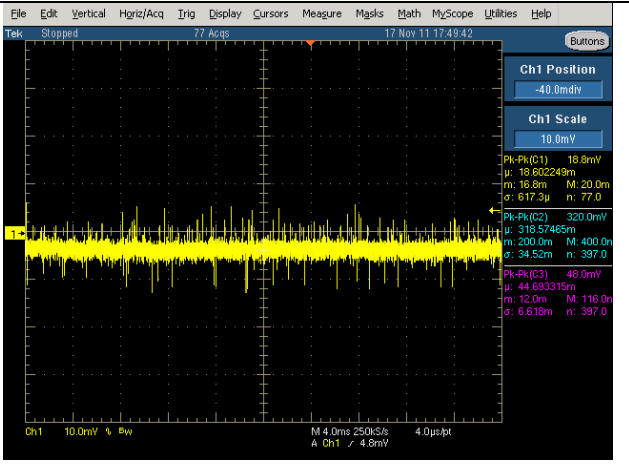
Ch1 10.0mV 5V M 4.0ms 250kS/s 4.0µs/div A Ch1 4.8mV

5V

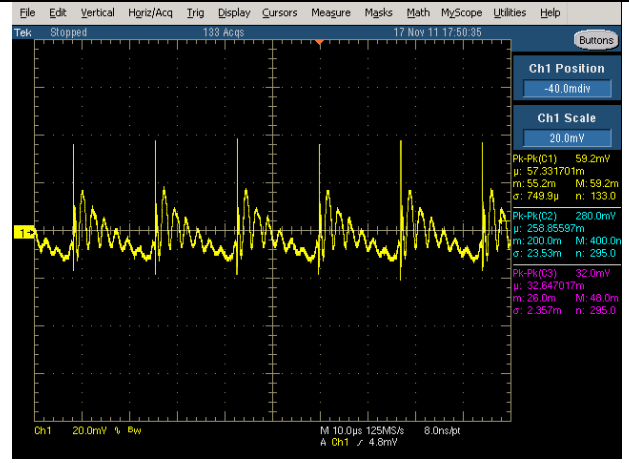




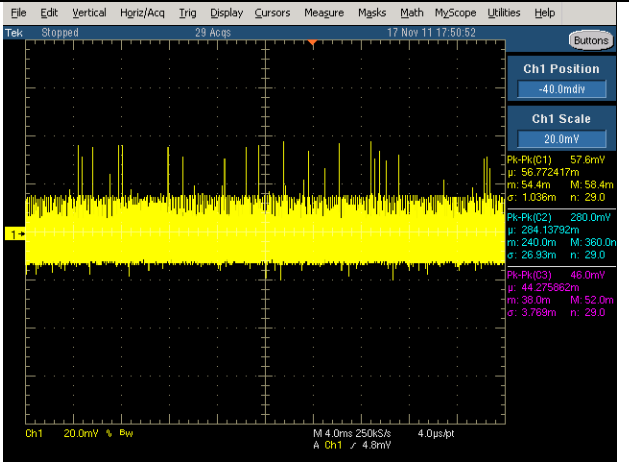
300Vac +5V Full Load Ripple



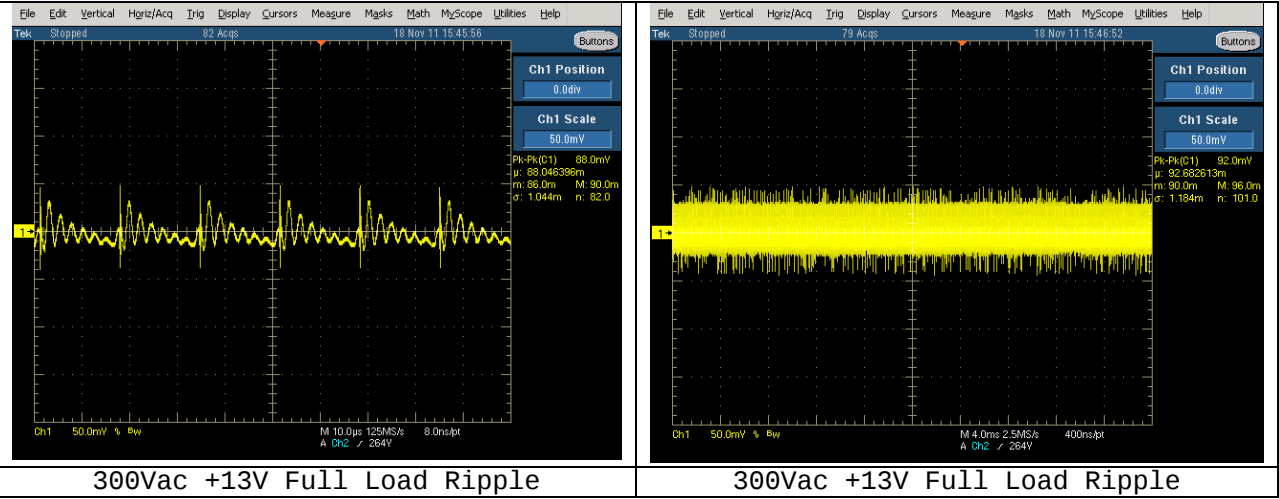
300Vac +5V Full Load Ripple



300Vac +12V Full Load Ripple



300Vac +12V Full Load Ripple



5 Efficiency

Requirement: 70%(TYP) for Vin=300Vdc, rated load.

Vin(Vac)	Pin(W)	Vo1(V)	Io1(A)	Vo2(V)	Io2(A)	Vo3(V)	Io3(A)	Po(W)	Eff(%)
75	15.18	5.01	0.06	12.06	0.306	13.6	0.493	10.70	70.5
230	14.27	5.03	0.06	12.06	0.306	13.6	0.493	10.70	75.0
300	14.44	5.00	0.06	12.06	0.306	13.6	0.493	10.70	74.1

6 Static Regulation

Requirement: 5V@0.06A 2% 12V@0.3A 0.5% 13V@0.5A 2%

Vin=75Vac

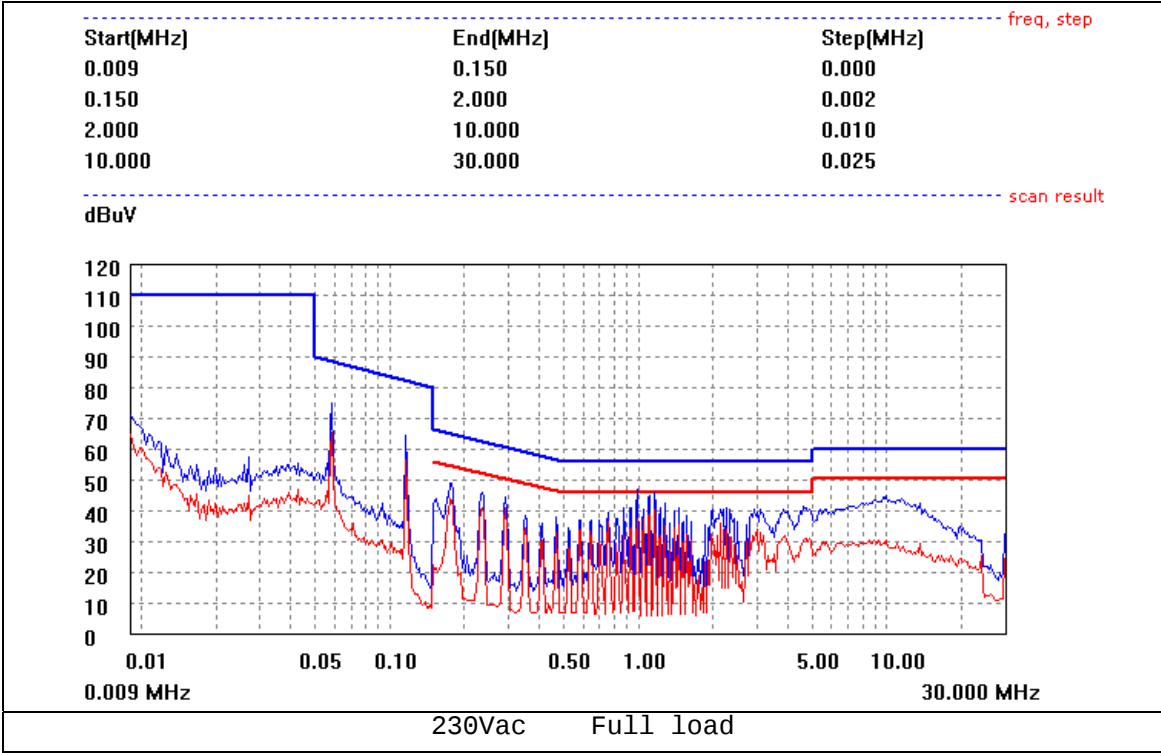
5V (0.06A)	12V (0.3A)	13V (0.5A)	5V (0.06A)	12V (0.3A)	13V (0.5A)
0	0	0	4.85	12.06	13.8
0	0	1	5.23	12.06	15.3
0	1	0	4.9	12.07	11.8

0	1	1	5.52	12.06	13.47
1	0	0	4.44	12.06	13.8
1	0	1	4.92	12.06	15.35
1	1	0	4.42	12.06	15.35
1	1	1	5.03	12.06	13.49

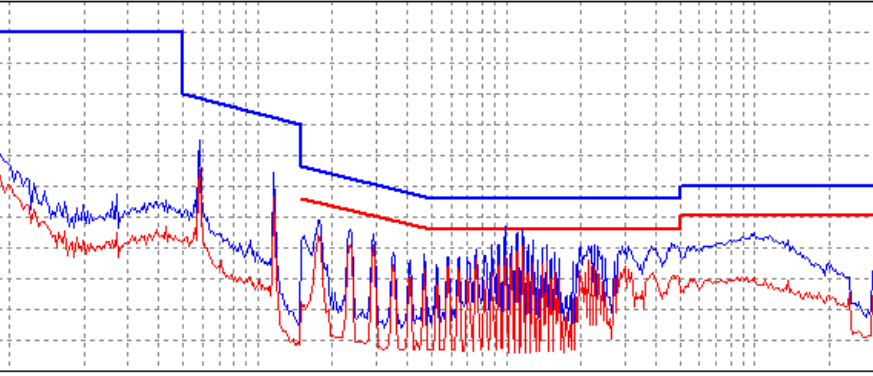
Vin=300Vac

5V (0.06A)	12V (0.3A)	13V (0.5A)	5V (0.06A)	12V (0.3A)	13V (0.5A)
0	0	0	4.86	12.06	13.86
0	0	1	5.25	12.06	15.4
0	1	0	4.84	12.06	11.86
0	1	1	5.45	12.06	13.5
1	0	0	4.45	12.07	13.87
1	0	1	4.94	12.06	15.37
1	1	0	4.42	12.07	11.99
1	1	1	5.03	12.05	13.5

7 EMI Test



dBuV



0.01

0.05

0.10

0.50

1.00

5.00

10.00

30.000 MHz

0.009 MHz

230Vac

Full load

8 Thermal Test

Thermal test is tested under half load,75C ambient temperature as customer required. The test data as below:

	70Vac	230Vac	300Vac
Q2	81.8	80.5	81.4
Transformer Core	79.4	79.6	80.1
Transformer Winding	79.1	79.3	80.0
D4	83.5	83.7	83.8
D5	85.1	84.1	85.0
B1	80.1	76.6	76.1

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