

15W Adapter Module Design with OB2263 (Preliminary Release)

Key Features

- Low component count
- Standby Power < 0.2W
- Audio noise free operation
- OCP with line compensation



Version	Date	Revision History
v.1.0	2005-6-23	Preliminary Release

Index

1	Adaptor Module Specification	3
1.1	Input Characteristic	3
1.2	Output Characteristic.....	3
1.3	Performance Spec.....	4
1.4	Protection Features.....	4
1.5	Environmental	4
1.6	Dielectric withstand (Hi-pot) test.....	4
1.7	Insulation.....	4
2	Adaptor Module Information	5
2.1	Schematic	5
2.2	PCB Garber File	7
2.3	BOM.....	8
3	Performance Evaluation	10
3.1	Input Characteristics.....	11
3.2	Output Characteristics	11
3.3	Protections.....	23
3.4	Brownout/Brownout recovery test	24
3.5	EMI Test.....	25
3.5.1	Conducted EMI Test.....	26
3.5.2	Radiation EMI Test.....	34

Figures

Figure 1	Measured ripple& noise waveform@90Vac/60HZ, no load	12
Figure 2	Measured ripple& noise waveform@90Vac/60HZ, full load	13
Figure 3	Measured ripple& noise waveform@264Vac/50HZ, no load	14
Figure 4	Measured ripple& noise waveform@264Vac/50HZ, full load	15
Figure 5	Measured overshoot waveform@90Vac/60HZ, full load.....	16
Figure 6	Measured overshoot waveform@264Vac/50HZ, full load.....	16
Figure 7	Output voltage waveform of under Dynamic test@264Vac/50HZ,full load.....	17
Figure 8	Output voltage waveform under Dynamic test@90Vac/60HZ,full load.....	18
Figure 9	Turn on delay time measured waveform@90Vac/60HZ,full load.....	19
Figure 10	Turn on delay time measured waveform@240Vac/50HZ,full load.....	20
Figure 11	Hold on delay time measured waveform@100Vac/60HZ,full load	21
Figure 12	Rise time measured waveform@100Vac/60HZ,full load.....	21
Figure 13	Rise time measured waveform@240Vac/50HZ with full load	22
Figure 14	Fall time measured waveform@100Vac/60HZ,full load	22

Figure 15 Fall time measured waveform@240Vac/50HZ,full load 23

Tables

Table 1 Input characteristic at full load	11
Table 2 Standby power at no load	11
Table 3 Standby power at no load with output LED	11
Table 4 Line Regulation & Load Regulation.....	11
Table 5 Ripple &Noise measurement results	12
Table 6 Over shoot/under shoot measurement results	15
Table 7 output voltage under dynamic test.....	17
Table 8 turn-on delay /hold-up/Rise/Fall time measurement results	18
Table 9 OCP value vs. input voltage	23
Table 10 Brownout/Brownout recovery test results	24

1 Adaptor Module Specification

Model Num: OBPD15W-L120A

Rev. A0

1.1 Input Characteristic

- AC input voltage rating 100VAC to 240VAC
- AC input voltage range 90VAC to 264VAC
- AC input frequency 47HZ to 63HZ
- Max. In-rush current 30 A for 100VAC/50HZ at full load
 (At cold Start) 75 A for 240VAC/50HZ at full load
- Input Current 0.45A (rms) max. @ full load, 100VAC/60HZ
 0.23A (rms) max. @ full load, 240VAC/50HZ
- Leakage Current 0.25mA Max.

1.2 Output Characteristic

- Output Voltage +12.0V
- Output Tolerance +/-0.6V
- Min. load current 0A
- Max. load current 1.25A

- Line Regulation 1%
- Load Regulation 5%
- Ripple & Noise 50 mV

Note: Ripple & Noise is measured with 20MHZ bandwidth limited (peak to peak value) at the end of a 12-inch twisted wire terminated with a 10uF capacitor in parallel with a 0.1uF ceramic capacitor.

1.3 Performance Spec

- Total Output Power 15W Typical
- Standby Power < 0.3W @ 240Vac/50HZ, no load.
- Efficiency 75% min. @ 90Vac/60HZ with full load
- Hold up Time 10m sec. min. @ 100Vac/60HZ with full load
- Turn on Delay Time 1 sec. max. @ 100Vac/60HZ with full load
- Switching frequency 20K HZ~100K HZ Free-Running.

1.4 Protection Features

- Short circuit Protection Output shut down (Auto recovery)
- Over Voltage Protection Output shut down when output voltage exceeds 15V
- Over Current Protection Output shut down (Auto restart)

1.5 Environmental

- Operating Temperature 0°C to + 40°C
- Operating Humidity 20 % to 90 % R. H.
- Storage Temperature -40 °C to 85 °C
- Storage Humidity 0 % to + 90 % R. H.

1.6 Dielectric withstand (Hi-pot) test

- Input to Output 3000Vac 1 min.

1.7 Insulation

- Input to Output DC 500V 10M ohm min.