㈜에스피 SMART POWER INC

SMPS Specification LSP030-12V

1.1 Input Characteristics

AC input voltage rating	220Vac
AC input voltage range	200Vac - 240Vac
AC input frequency range	47Hz ~ 63Hz
Input current	0.34A
Input Power	30W Max.
Power factor	0.5 Min
Efficiency	80% Min

1.2 Output Characteristics

Output Voltage	12.0V
Rated load current	2.2A
MAX load current	2.4A
Rated Output Power	26W
Min. load current	100mA
Output Tolerance	±5%
Ripple and Noise	1000mVp-p

1.3 Performance Specifications

Line Regulation	±5%
Load Regulation	±5%

1.4 Protection Features

Over Current Protection	Output shut down with auto-recovery
Short Circuit Protection	Output shut down with auto-recovery
Over Voltage or Load Protection	Output shut down with auto-recovery
Over Temperature Protection	Output shut down with auto-recovery

1.5 Environments

Operating Temperature	-20℃ to +50℃
Storage Temperature	-30℃ to +70℃
Operating Humidity	20% to 90% R.H.
Storage Humidity	0% to 95% R.H.

1.6 Dielectric Withstand Voltage (Hi-Pot)

condition : non operating

Test Point : primary to secondary — 3.0KVac, 10㎃, 3Sec

1.7 Insulation Resistance

condition : non operating

Test Point : primary to secondary — Greater than 100㏁ at 500 VDC

2 Performance Evaluation

This session presents the test results of SMPS module up to data. Results on inrush current and safety test are not included and will be added when they become available. Overall, the module meets design specifications.

2.1 Input Characteristics

2.1. 1 Input current and Standby power

The module was tested at different input voltages (from 200Vac to 240Vac)

Standby power at min. load

Input Voltage	200V/60Hz	220V/60Hz	240V/60Hz
Pin (mW)	1.77W	1.79W	1.82W

Input current at full load

Input Voltage	200V/60Hz	220V/60Hz	240V/60Hz
Input Current (A)	0.28A	0.27A	0.25A

Efficiency

Input Voltage	200V/60Hz	220V/60Hz	240V/60Hz
Input Power (W)	33.8W	33.7W	32.6W
Output Power (W)	29W	29W	29W
Power factor	0.6	0.58	0.57
Efficiency (%)	85%	85%	88%

2.2 Output Characteristics

2.2.1 Line Regulation & Load Regulation

Input Voltage	Output Voltage (V)		
	Min Load	Nor. Load	Max Load
200V/60Hz	12.10V	-	12.00V
220V/60Hz	12.10V	-	12.00V
240V/60Hz	12.10V	-	12.00V

2.2.2 Ripple & Noise

Ripple & Noise measure results

Input Voltage	Ripple & Noise (mV)		Remark
	Min Load	Max Load	
200V/60Hz	-	276mV	
240V/60Hz	-	268mV	

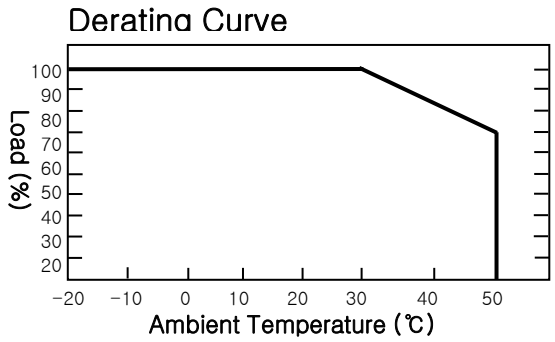
Note: Ripple & noise were measured at DC Cable end with a 0.1uF/50V ceramic cap connected in parallel with a 47uF/50V Electrolytic cap. Bandwidth was limited to 20MHz.

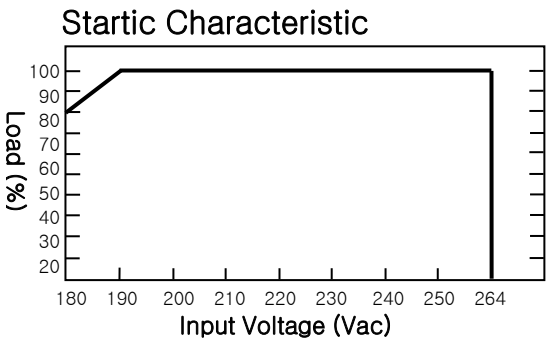
2.3 Protections

2.3.1 Over Current Protection (OCP)

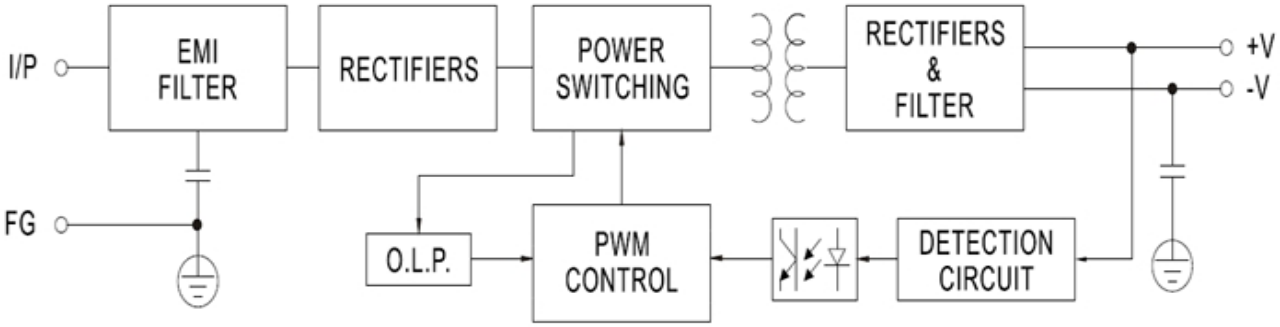
The power supply will shut down auto-recovery when output current exceeds up load 100%, and it should recover when the over current condition is removed.

3 load Characteristic Curve





4 Block Diagram



5 Case size