

# **SPECIFICATION**

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## **1.0 GENERAL DESCRIPTION AND SCOPE**

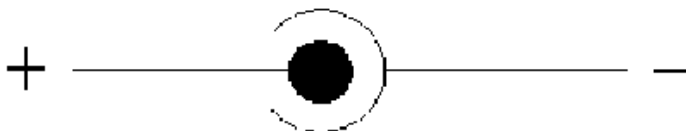
This is the specification of Model FSP024-DEFB2, part no. 9NA0240800, AC-DC adapter switching power supply designed and manufactured by FSP GROUP, INC. located in Taiwan, Republic of China.

The specification below is intended to describe as detailed as possible the functions and performance of the subject power supply. Any comment or additional requirements to this specification from our customers will be highly appreciated and treated as a new target for us to approach.

## **2.0 CONNECTOR PIN DESIGNATIONS**

The pin designations and color codes are defined as follows:

### **OUTPUT POLARITY OF DC PLUG**



## **3.0 OUTPUT ELECTRICAL REQUIREMENTS**

### **3.1 OUTPUT RATING**

Output	Nominal	Regulation	Ripple/Noise	Min	Max
1	+12.0V	11.4V~12.6V	150mV	0A	2.0A

The total output regulation shall be  $\pm 5\%$ , including the effects of line voltage variations, load current, ripple and noise, and the AC component of the load current. Ripple and noise measurements shall be made under all specified load conditions through a single Pole low pass filter with 20MHz cutoff frequency. Outputs shall bypass at the connector with a 0.1uF ceramic disk capacitor and a 47uF electrolytic capacitor to simulate system loading.

Ripple Noise test condition: Input at normal line, output at Max. Current.

### 3.2 SHORT CIRCUIT PROTECTION

Output can be shorted without damage, and auto recovery.

### 3.3 TURN-ON DELAY TIME

The turn-on delay from application of AC input power to the establishment of rated DC power voltage should not exceed 3.0 seconds at normal line, output at Max. Current and CC mode test.

### 3.4 OVERSHOOT

The output overshoot at turn-on shall not exceed 10% of normal voltage value with or without the load connected.

### 3.5 PEAK LOAD

The adapter will be accepted 3 Amperes peak load under 3 seconds from 100 Vac to 264 Vac.

## 4.0. INPUT ELECTRICAL SPECIFICATIONS

### 4.1 INPUT VOLTAGE RANGE

PARAMETER	MIN.	NOM.	MAX.	UNITS
V-in Range	90	115/230	264	V-rms

### 4.2 INPUT FREQUENCY

47 - 63Hz

### 4.3 INRUSH CURRENT

(Cold start – 25 deg. C) DC full loading

No damage shall occur and the input fuse shall not blow up.

### 4.4 INPUT LINE CURRENT

115V	0.8Amps – rms maximum
230V	0.4 Amps – rms maximum

#### 4.5 NO LOAD POWER CONSUMPTION

No load power standby at Vin: 230Vac and input power 1.0W(max).

#### 4.6 EFFICIENCY

115Vac @Full Load	75% minimum
230Vac @Full Load	75% minimum

#### 4.7 Ac high voltage protection

Power supply shall be operated under 264V continuous. Over AC 264V power supply shall meet the following spec.

Step 1 : Star with 264V 60Hz.(5 sec)

Step 2 : Change AC input to AC 310V 50Hz (10 cycle,200mSec)

Step 3 : Change AC input to AC 280V 50Hz (10 cycle,200mSec)

Step 4 : Change AC input to AC 264V 50Hz (5 Sec)

#### 5.0. ENVIRONMENTAL REQUIREMENTS

The power supply will be compliant with each item in this specification for the following environmental conditions.

#### 5.1 TEMPERATURE RANGE

Operating	0 to + 40 deg. C
Storage	-10 to +70deg.C

#### 5.2 HUMIDITY

Operating	5 –85% RH, Non-condensing
Storage	5 –95% RH, Non-condensing

#### 5.3 VIBRATION

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Vibration – Sine wave excited, 2.0 G maximum acceleration, 10-500 Hz, swept at one octave / min. Fifteen minute dwell at all resonant points, where resonance is defined as those exciting frequencies at which the device under test experiences excursions two times large than

non-resonant excursions.

Plane of vibration to be along three mutually perpendicular axes.

## **5.4 SHOCK**

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Package 50G,11ms,X,Y,Z axis. 3 time/face.

Unpackage 30G,18ms, X,Y,Z axis. 3 time/face.

## **5.5 ROHS Compliant**

All the component of the power supply have to be ROHS compliant.

## **6.0. RELIABILITY**

### **6.1. MTBF**

The subject adapter have a minimum predicted MTBF of 100000 hours of continuous operation at 25°C, maximum-output load, and nominal AC input voltage.

### **6.2 DIELECTRIC WITHSTAND VOLTAGE AND INSULATION RESISTANCE**

Primary To Secondary: 4242 VDC 10mA for 1 second.

Insulation Resistance: 500Vdc / 1 Sec, 10 M $\Omega$  min. between primary and secondary.

### **6.3 LEAKAGE CURRENT**

The measured reading is less than 250uA at 254Vac 50Hz.

### **6.4 Surge Immunity Test**

Voltage : Ring wave +/- 6KV (200A)

Phase : 0 ,90 ,180,270,

Each phase apply 3 times surge ,Each apply surge need keep at least 25 Sec

Mode :L – N.

### **6.5 ELECTROSTATIC DISCHARGE (ESD)**

This adapter is capable to withstand ESD test voltage at any point around the enclosure as below, it is refer to IEC1000-4-2

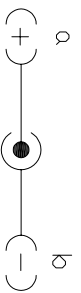
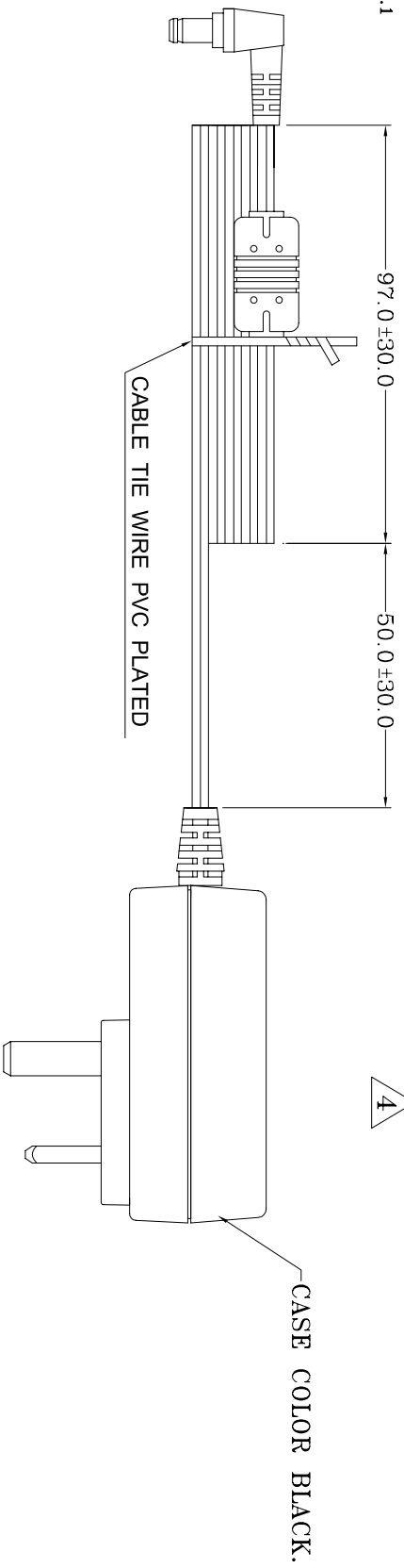
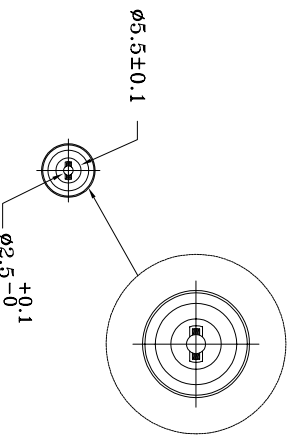
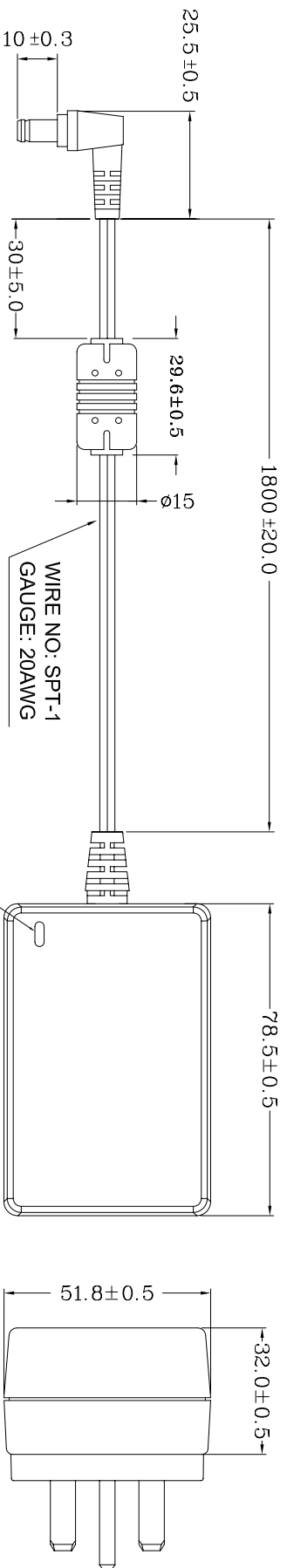
After applied +/- 4kV contact discharge and adapter is no function error.

After applied +/- 8kV air discharge and adapter is no function error.

### **6.6 Aluminum Electrolytic capacitor reliability**

1. Capacitor life shall meet 50000 hours under 40°C ambient ,max loading.
2. Capacitor ripple current shall meet 85%(max) de-rating.(Except buck capacitor)
3. Capacitor dc rating shall meet 75%(max) de-rating. (Except buck capacitor)
4. Capacitor temperature shall meet 80°C(max) under 40°C ambient ,max loading.

Subtract date code of Power Supply from E-Cap should be equal to or smaller than 6 months.



UNIT:mm

MODEL NO.: G.P. RSP024-DEPB2		TITLE: ASSY		P/N.: 9NA0240800	
R&D(5)	PE	DRAWN	DATE		
INTERIOR COUNTERSIGN:		Tina	MAY.28.2007		

Mechanical Drawing