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SPECIFICATION



ESD07058057

FSP270-3PI03

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SPECIFICATION

FSP 270-3PI03

SANYO Part Code:
1AV4U20C32500

R&D	CHECK	APPROVED	REV.
Tim			X4

1. SCOPE

The FSP270-3PI03 comprises a 68 Watts Multi-Outputs (+5Vsb, +5V, +12V), **single range** [96 – 144 Vac] switching power supply and a DC to AC inverter for a 46” LCD-TV “AUO T460HW02 V.1 Panel”.

2. FEATURE

All products including samples delivered will meet all the requirements as outlined in the document. The basic requirements of the design features are listed below:

- * 3 Output Voltages: +5Vsb, +5V, +12V
- * Build in DC-AC inverter.
- * Short circuit protection / over current protection / over voltage protection
- * Simple construction - easy assembly and service / repair
- * High reliability
- * High efficiency - to reduce temperature rise. The efficiency is greater than 80%. (include DC/DC and DC/AC)
- * Green Mode function for LCD panel .The power supply has the green mode function.
At standby mode [5Vsb/40mA], the power consumption is less than 0.9 Watts at 120Vac /50Hz.
- * Digital PWM dimming for Inverter

3. MECHANICAL REQUIREMENTS

3.1 Power supply Dimension Constraints

260(L)*200(W)*35(H) mm

3.2 Power Supply Connectors

Pin & Wire color assignment of Connector below

3.2.1 CN100

B02B-VT(LF)(SN) JST

Pin number	Output Name
1	LINE
2	NEUTURAL

3.2.2 CN201

B13B-PH-K-S(LF)(SN) JST

Pin number	Output Name
1	PS_On (3V On/ 0V off)
2,3,6,11	GND
4,5	5V
7	5V _{SB}
8,9,10	12V
12	BL _{DIM}
13	BL _{ON}

3.2.3 The Backlight balance board through the connector- CN301

Pin number	Output Name
1	+12Vcc
2	Lamp current Feedback form Balance board
3	GND
4,5,6,7	Lamp detect protection for Inverter (LD)

3.2.4 The lamp output is provided through the connector- CN401,CN402

Pin number	Output Name
1	(+) High Voltage
2,3,4,5,6	N.C.
7	(-) High Voltage

4. ELECTRICAL REQUIREMENTS

4.1 Input AC

4.1.1 Input voltage

Minimum	Nominal	Maximum	
96	120	144	VAC

4.1.2 Input Frequency

Min	Nominal	Max	
47	50/60	63	Hz

4.2 Interface

4.2.1 Output voltages and loads

They are measured at the load end of connected cables.

Table.1 SMPS load limits when the pin "Power On/off" is off (0V)

Signal Name	Voltage (Volts)			Current (A)		
	Min	Typ	Max	Max	Stand-by	Min.
+5Vsb	4.85	5.0	5.25	0.5	0.05	0.03

Table.2 SMPS load limits when the pin "Power On/off" is on (5V)

Signal Name	Voltage (Volts)			Current (A)		
	Min	Typ	Max	Max.	Nor.	Min.
+5V	4.85	5.0	5.25	3.5	1	0.1
+12V	11.4	12.00	12.6	4	1	0.1

Note 1. The output voltage shall remain within the following the output regulation at max. & min. load for rated AC input condition [96Vac to 144Vac].

4.2.2 On / Off control voltages

Signal Name		Voltage (Volts)		
		Min	Typ	Max
PS_On	Power ON (Hi)	3.0	5.0	
	Power Off (Lo)	0		1.0
BL_ON	Inverter ON (Hi)	2.0	5.0	
	Inverter Off (Lo)	0		0.5

4.3 Ripple and Noise

4.3.1 Ripple and Noise required specification

Table.3 lists the Ripple and Noise limitations of switching power supply unit only under all operating conditions including the input line voltage range and over all of the full load range.

Table.3 Ripple and Noise Limitations

Signal Name	Ripple & Noise (mV)
+5Vsb	75
+5V	75
+12V	100

Note:

1. The measuring is done by 20MHz band width limited oscilloscope and terminated each output with a 10uF capacitor in parallel with a 0.1uF capacitor.
2. While test ripple noise of the output, the probe shall avoid any coupling from other circuit or equipment, otherwise the test result will not show power supply's actual ripple/noise.

4.4 Protection

The switching power supply (+5Vsb ,+5V) will be auto recovery while the fault is removed.

The switching power supply (+12V) will be latched off at fault condition.

4.4.1 Short circuit protection

Each DC output shall have short circuit protection. A short condition on any of DC outputs shall cause **no damage** to the power supply.

4.4.2 Fuse protection

The Fuse inside the power supply shall open when the AC input current is over the rated current of fuse. This Fuse protection will cause switching power supply to fail.

4.4.3 Over voltage protection

The power supply have the over voltage protection. When the main feedback control circuit fault occur, the power supply shall be over voltage protection to protect the whole system.

4.5 Efficiency

80% min. It will be measured at the maximum load and nominal line (120V)
(include DC/DC and DC/AC)

4.6 Hold-up time

The power supply shall maintain voltage regulation within the specified limits in table 1 for at least **20** milliseconds (one cycle drop) after losing of input voltage under the following conditions:

Input voltage: 120Vac
Loading: max output load

That means the power supply shall cover the AC one cycle without any impairment to the power supply output's regulations.

4.7 Turn On Delay Time (Power On Time)

The power supply is in regulation within **2 seconds** after specified rated input voltage had been applied .

4.8 Mean Time Between Failure (MTBF)

50,000 hrs at 25 Degrees centigrade when calculated using MIL-HDBK-217F. The VENDOR can use agreed upon F.I.T. (failure - in - time) number in place of MTBF.

4.9 Green Mode function

The power supply shall have the green mode function.

When system is at standby mode, main power on /off is off (0V) & 5Vsb load 40mA, the input power consumption shall less than 0.9 Watts under AC 120V 50Hz input.

Note :

- 1) Thermal test must be done at nom. AC and at I max. load.

6.3 Humidity (Non-condensing)

Operating 0% to 90% RH

6.4 Hi-pot test

100% Hi-pot tested,

Primary to second: 1.8KVAC 3 second

7. INTERNATIONAL STANDARDS

7.1 EMI standards

Designed to meet the following conducted & radiation limits:

CISPR 22 Class B

7.2 EMS standards

7.2.1 Electrostatic Discharge Immunity Test:

Air: IEC-61000-4-2 20KV, Criteria B

Contact: IEC-61000-4-2 10KV, Criteria B

7.2.2 EFT/Burst Immunity Test: IEC-61000-4-4 1KV, Criteria B

7.2.3 Surge Immunity Test:

Line , Neutral to GND IEC-61000-4-5 6KV, Criteria B

Line to Neutral IEC-61000-4-5 3KV, Criteria B

7.3 Safety Compliance

Design to meet

UL60065 / IEC60065 REV:7

