MODEL NO. JJ-300CETD-80-00(High Efficiency)

This specification describes the requirements of 300W switching power supply with a TFX form-factor and Compatible Intel ATX 12V V2.2, +5V standby voltage, remote on/off control, dual line input capability and forced air coolingcharacteristics .

☞ 1. AC INPUT

1.1 AC input requirements

The input voltage, current, and frequency requirements for continuous operation are stated below.

Table 1 AC Input Line Requirements

Parameter	Min	Nom.	Max	Unit
Vin(Full range)	100	115-230	264	VAC rms
Vin Frequency	47	60-50	63	Hz
Full Load	80%	100%	100%	Watts
Input current		6-4A		Amp

Power factor correction (PF)≧0.95 at full load.

1.2 Inrush current regulation

50 A @ 115Vrms

100 A @ 230Vrms (at 25℃ ambient cold start).

☞ 2. DC OUTPUT

2.1 DC voltage regulation

Parameter	Range	Min	Nom.	Max	Unit
+3.3V	±5%	+3.14	+3.3	+3.47	Volts
+5V	±5%	+4.75	+5	+5.25	Volts
+12V1	±5%	+11.4	+12	+12.6	Volts
+12V2	±5%	+11.4	+12	+12.6	Volts
-12V	±10%	-10.8	-12	-13.2	Volts
+5VSB	±5%	+4.75	+5	+5.25	Volts

2.2 Load ranges

Load Range

Parameter	Min	Nom.	Max	Peak	Unit
+3.3V	0.5	-	19		Amps
+5V	0.3	-	15		Amps
+12V1	1.0	-	11	13	Amps
+12V2	1.0	-	8	13	Amps
-12V	0	-	0.3		Amps
+5VSB	0	-	2.5		Amps

Note:

(1) The maximum continuous average DC output power shall not exceed 300W

(2) The maximum continuous average load on +5V and +3.3V outputs shall not exceed 103W.

(3) The maximum continuous average load on +12V1 and +12V2 outputs shall not exceed 252W.

(4) The 5V standby output shall remain on while the AC input power connected,whether DC outputs are disabled (Off) or enabled (On) by the remote on control signal, but when the 5V standby output remained on with the AC input power turn off ,the remote on control will be disabled.

2.3 Output Ripple

2.3.1 Ripple regulation

Parameter	Ripple	Noise	Unit
+3.3V	50	80	mVp-p
+5V	50	80	mVp-p
+12V1	120	150	mVp-p
+12V2	120	150	mVp-p
-12V	120	150	mVp-p
+5VSB	50	80	mVp-p

2.3.2 Definition

The ripple voltage of the output shall be measured at the pins of the output connector when terminated in the load impedance specified in figure 1. Ripple and noise are measured at the connectors with a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor to simulate system loading. Ripple shall be measured under any condition of line voltage, output load, line frequency,operation temperature.

2.3.3 Ripple voltage test circuit

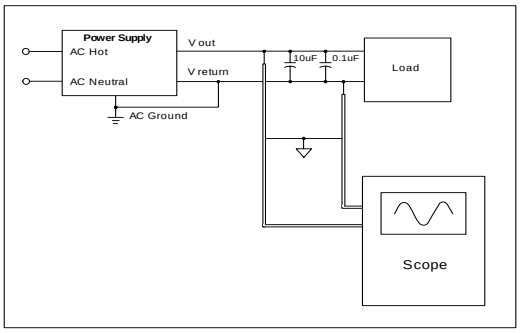


Figure 1. Ripple voltage test circuit

2.4 Overshoot

Any overshoot at turn on or turn off shall be less 10% of the norminal voltage value, all outputs shall be within the regulation limit of section 2.0 before issuing the power good signal of section 5.0.

2.5 Efficiency

Power supply efficiency typical 80% at normal AC main voltage and 20% ,50%, 100% load output.

2.6 Remote ON/OFF control

When the logic level "PS-ON" is low, the DC outputs are to be enabled.
When the logic level is high or open collector, the DC outputs are to be disabled.

2.7 STANDBY MODE：

(PS_ON=High). +5Vsb converter is working and standby input power is measured.

true RMS input power(standby) +5Vsb/0A;input voltage:230VAC 50HZ <1W

☞ 3. PROTECTION

3.1 Over -power protection

The power supply will be shutdown and latch off when output power over125% of rated DC output.

3.2 Over voltage protection

The over voltage sense circuitry and reference shall reside in packages that are separate and distinct from the regulator control circuity and reference.No single point fault shall be able to cause a sustained over voltage condition on any or all outputs.The supply shall provide latch-mode over voltage protection as defined in Table.

output	Minimum	Maximum
+12 VDC	13.4	15.6
+5 VDC	5.74	7.0
+3.3 VDC	3.76	4.3

3.3 Over current protection

The power supply shall have current limit to prevent the +3.3V,+5V,and +12V1,+12V2 outputs from exceeding the values shown in the following Table.If the current limits are exceeded the power supply shall shutdown and latch off.

Voltage	Over Current Limit (Iout limit)
+3.3V	40A maximum
+5V	40A maximum
+12V1	20A maximum
+12V2	20A maximum

3.4 Short circuit

An output short circuit is defined as any output impedance of less than 0.1 ohms.The power supply shall shut down and latch off for shorting the +3.3 VDC,+5 VDC,+12 VDC, or -12VDC rails to, return or any other rail. Shorts between main output rails and +5VSB shall not cause any damage to the power supply. The power supply shall either shut down and latch off or fold back for shorting the negative rails.+5VSB must be capable of being shorted indefinitely, but when the short is removed,the power supply shall recover automatically or by cycling PS_ON#. The power supply shall be capable of withstanding a continuous short-circuit to the output without damage or overstress to the unit.

NOTE： 5V sb will be auto-recovery when the fault removed.

3.5 No load operation

No damage or hazardous condition should occur with all the DC output connectors disconnected from the load.The power supply may latch into the shutdown state.

☞ 4. TIMING

4.1 Signal timing drawing

Figure 2. is a reference for signal timing for main power connector signals and rails.

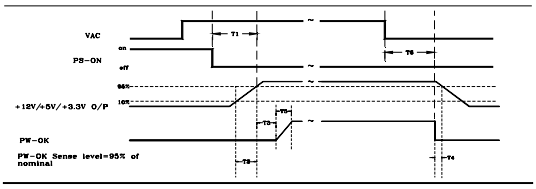


Figure 2. PS-OK Timing Sequence

(1)T2: Rise time (0.1ms~70ms)

(2)T3: Power good signal turn on delay time (100ms~1000ms)

(3)T4: Power good signal turn off delay time (1ms min)

(4)T5: Rise time (10ms max)

(5)T6: Hold up time (17ms min)

4.2 Hold up time

When the power loss its input power, it shall maintain 17ms in regulation limit at normal input voltage. (AC:100-264V~/60-50Hz)

☞ 5. ENVIRONMENT

5.1 Operation

Temperature	0 to 50°C
Relative Humidity	10 to 90%, non-condensing

5.2 Shipping and Storage

Temperature	-20 TO 70°C
Relative Humidity	5 to 95%, non-condensing

5.3 Altitude

Operating	10,000FT max
Storage	50,000FT max

☞ 6. ELECTROMAGNETIC COMPATIBILITY (EMC)

FCC*,Class B, Part 15 (Radiated & Conducted Emissions)

CISPR* 22 / EN55022, 3rd Edition (Radiated & Conducted Emissions)

EN55024 (ITE Specific Immunity)

EN 61000-4-2 －Electrostatic Discharge

EN 61000-4-3 －Radiated RFI Immunity

EN 61000-4-4 －Electrical Fast Transients

EN 61000-4-5 －Electrical Surge

EN 61000-4-6 － RF Conducted

EN 61000-4-8 － Power Frequency Magnetic Fields

EN 61000-4-11 － Voltage Dips, Short Interrupts and Fluctuations

EN 61000-3-2 (Harmonics)

EN 61000-3-3 (Voltage Flicker)

EU EMC Directive (8/9/336/EEC) (CE Compliance)

☞ 7. MTBF

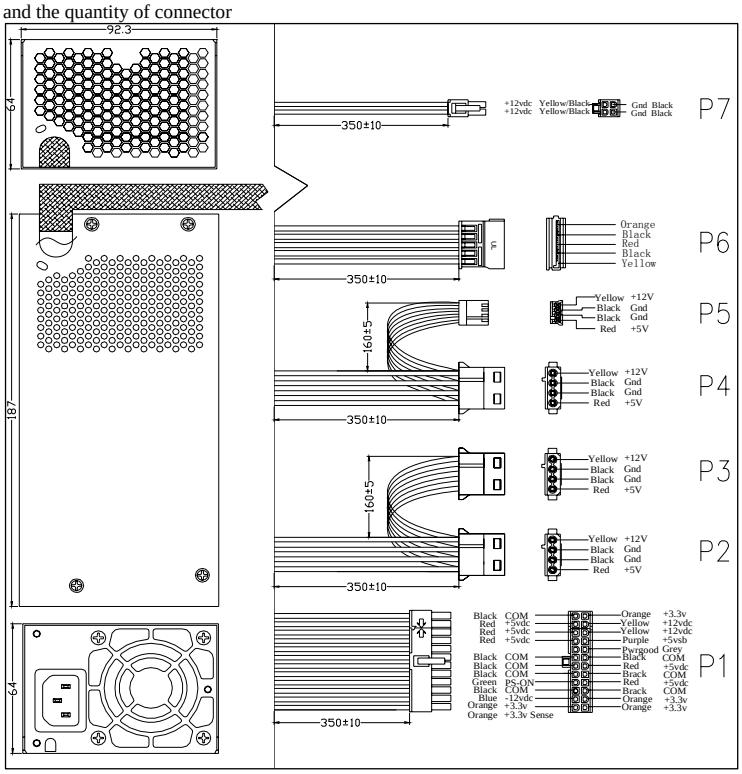
8.1 MTBF (mean time between failures) calculation

The demonstrated MTBF shall be 100,000 hours of continuous operation at 25°C,full load, 80% confidence limit and nominal line. The MTBF of the power supply be calculated in accordance with MIL-HDBK-217F. The DC FAN is not included.

☞ 8. MECHANICAL REQUIREMENTS

8.1 Physical dimension

Option for wire and connector, According to client's demand changing the length of wire and the quantity of connector



Standard 24Pin(20+4P) (TFX 12V)

8.2 Connectors (INTEL approved or equivalent)

TFX 12V Main Power Connector

P1 Connector (Molex 39-01-2240 or equivalent)

Pin	Signal	wire	AWG	Pin	Signal	wire	AWG
1	+3.3V	Orange	18	13 〔13〕	+3.3V +3.3Vdefault sense	Orange 〔Orange〕	18 22
2	+3.3V	Orange	18	14	-12VDC	Blue	22
3	COM	Black	18	15	COM	Black	18
4	+5VDC	Red	18	16	PS-ON	Green	22
5	COM	Black	18	17	COM	Black	18
6	+5VDC	Red	18	18	COM	Black	18
7	COM	Black	18	19	COM	Black	18
8	PWR-OK	Grey	22	20		N/C	
9	+5VSB	Purple	22	21	+5VDC	Red	18
10	+12V1DC	Yellow	18	22	+5VDC	Red	18
11	+12V1DC	Yellow	18	23	+5VDC	Red	18
12	+3.3V	Orange	18	24	COM	Black	18

Peripheral Connector(s)

P2,P3,P4(AMP 1-480424-0 or Molex 8981-04P or equivalent)

Pin	Signal	18AWG wire
1	+12V1DC	Yellow
2	COM	Black
3	COM	Black
4	+5VDC	Red

Floppy Driver Connector

P5 (AMP 171822-4 or equivalent)

Pin	Signal	22AWG wire
1	+12V1DC	Yellow
2	COM	Black
3	COM	Black
4	+5VDC	Red

Serial ATA Power Connector

P6 (Molex 88751 or equivalent)

Pin	Signal	18AWG wire
1	+3.3VDC	Orange Orange(22AWG)
2	COM	Black
3	+5VDC	Red
4	COM	Black
5	+12V1DC	Yellow

TFX 12V Power Connector

P7 Connector (4PIN:Molex 39-01-2040 or equivalent)

Pin	Signal	18AWG wire	Pin	Signal	18AWG wire
1	COM	Black	3	+12V2DC	Yellow/Black
2	COM	Black	4	+12V2DC	Yellow/Black

9. FAN SPEED CONTROL (Optional)

Fan voltage adjust with the ambient temperature or output power.