



深圳欧陆通电子股份有限公司

深圳欧陆通电子股份有限公司
SHENZHEN HONOR ELECTRONIC CO., LTD

ASPOWER
Electrical Specification

Model Name	R2A-DV0550-N
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Electrical Specification

(With ATX output for QD-Dist and Optimize (SGCC) 1+1 Redundant)

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1.0 SCOPE

The specification defines the key characteristics for the power supply. The power supply can be used for Server storage filed, and normal AC or HVDC input voltage can apply in the power supply. Output ports is include +12V, +5V, +3.3V, -12V and +5VSB. The power supply has two fans for air- cooling. The max output power is 550W.

2.0 INPUT PARAMETER

2.1 Input Voltage/Input Current/Frequency

The power supply should operate in input limited voltage range, and follow the specification defined as below table, includes the limited value of input current, input voltage, working frequency. The power supply should be turned on when 90VAC or 160VDC at min load and max load.

Table1.

	Min	Rated	Max	Units
AC input voltage	90	100~240	264	Vrms
Frequency	47	50/60	63	Hz
HVDC input voltage	160	180~320	340	Vdc
Input current		<8A@100-240VAC <8A@180-320VDC		

Note: 265Vac~300Vac input for any length time shall not cause damage to the power supply.

2.2 Inrush Current

40A max at any phase of 230Vac input when 25degC cold start, ignore the instantaneous charge current for X,Y caps, but the peak current derating time should < 100us.

2.3 Efficiency

Efficiency testing should be in ambient temperature: 18degC-27degC, input voltage at 230Vac/50Hz. Below table provides efficiency requirement at various load for only one module.

Table2.

Load	+3.3V	+5V	+12V	-12V	+5Vsb	EFF
20%	2.03A	2.03A	7.58A	0.07A	0.27A	>87%
50%	5.08A	5.08A	18.96A	0.17A	0.68A	>90%
100%	10.15A	10.15A	37.91A	0.34A	1.35A	>87%



2.4 Power Factor

The power supply must meet the power factor requirements stated in the Energy Star Program Requirements for Computer Servers. These requirements are stated as below when one module. Test at 230Vac/50-60Hz or 110Vac/60Hz.

Table3.

Load	10% Load	20% Load	50% Load	100% Load
PF	> 0.65	> 0.80	> 0.90	> 0.95

2.5 Surge and Sag

AC line transient conditions are defined as “sag” and “surge”. “Sag” is defined as the AC line voltage drops below nominal voltage; “Surge” is defined as the AC line voltage rises above nominal voltage. The power supply should meet below AC line sag and surge conditions.

Table4. Sag

Duration	Sag	Input Voltage	Frequency	Performance Criteria
0.5 AC cycle	95%	100~240Vac	50/60Hz	No loss of function or performance
>1.0 AC cycle	>30%	100~240Vac	50/60Hz	Loss of function acceptable, power supply can turn on automatically

Table5. Surge

Duration	Surge	Input Voltage	Frequency	Performance Criteria
Continuous	10%	100~240Vac	50/60Hz	No loss of function or performance
0 to 0.5 AC cycle	30%	115~230Vac	50/60Hz	No loss of function or performance

3.0 OUTPUT PARAMETER

3.1 Output Current

The following table defines the current rating. The combined output power of all outputs shall not exceed the rated output power. The power supply shall meet both static, dynamic voltage regulation and timing requirements for the min/ max loading conditions.

**Table6.**

Output Voltage	Min Current	Max current
+3.3V	0A	25A
+5V	0A	25A
+12V	0.5A	45A
-12V	0A	1A
+5Vsb	0A	4A

Note: The continuous total max output power is 550W for 90~264Vac input.

3.2 Voltage Regulation

The power supply output voltage must stay within the following voltage limits shown in below table when operating at steady state, dynamic loading conditions. All outputs are measured with reference to the return remote sense (ReturnS) signal

Table7.

Output Voltage	Min	Rated	Max	Tolerance
+3.3V	3.135V	3.3V	3.465V	+/-5%
+5V	4.75V	5.0V	5.25V	+/-5%
+12V	11.4V	12.0V	12.6V	+/-5%
-12V	10.8V	12.0V	13.2V	+/-10%
+5Vsb	4.75V	5.0V	5.25V	+/-5%

3.3 Ripple & Noise

Table8.

Output voltage	Ripple & noise
+3.3V	<50mV
+5V	<50mV
+12V	<120mV
-12V	<120mV
+5Vsb	<50mV

Note:

1. This is measured over a bandwidth of 20MHz at the output connector. A 10μF Electrolytic capacitor in parallel with a 0.1μF ceramic capacitor are placed at the point of measurement.

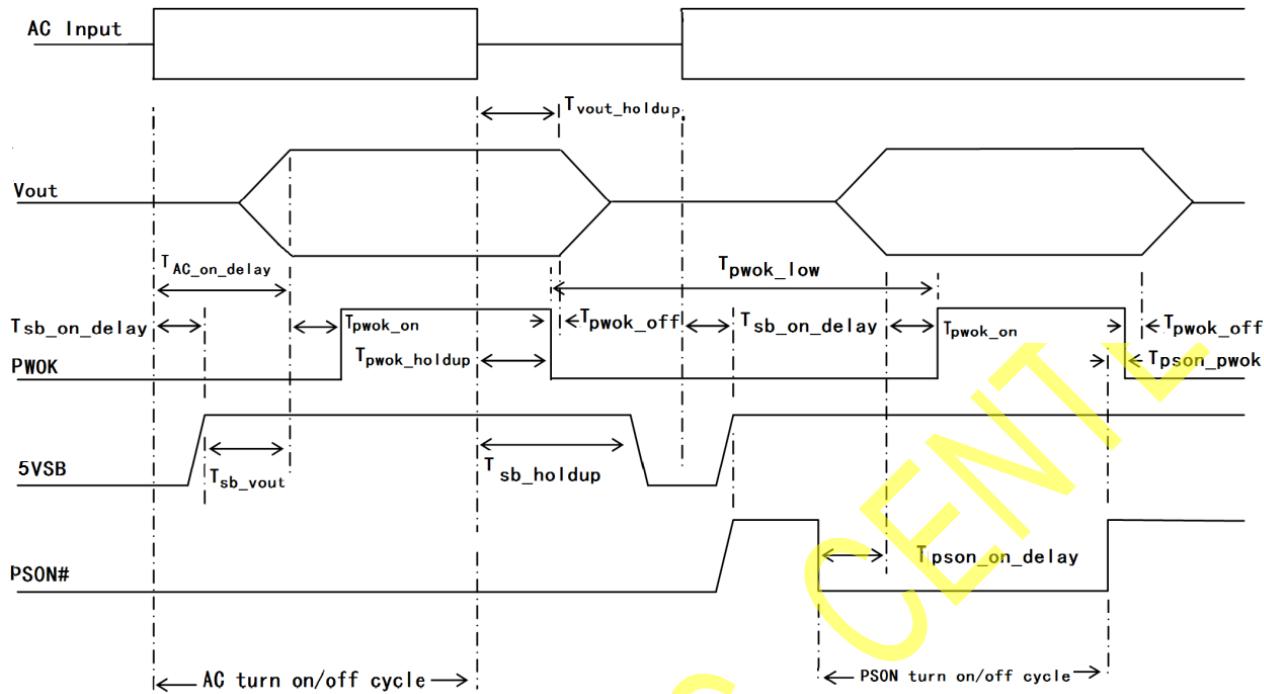


3.4 Timing

Below figure & table shows the power supply timing & requirements.

Table9. Turn On/Off Timing

Item	Description	Min	Max	Units
Tvout_rise	Output voltage rise from 10% to 90% time for 5Vsb.	1	25	ms
Tvout_rise	Output voltage rise from 10% to 90% time for 12V, 3.3V, 5V, -12V.	1	70	ms
Tsb_on_delay	Delay from AC being applied to 5Vsb being within regulation.		1500	ms
Tac_on_delay	Delay from AC being applied to 12V, 3.3V, 5V, -12V being within regulation.		3000	ms
Tsb_vout	Delay from 5Vsb being in regulation to 12V, 3.3V, 5V, -12V being in regulation at AC turn on.	50	1500	ms
Tpson_on_delay	Delay from PSON active to output voltages being within regulation limits.	5	400	ms
Tpwok_on	Delay from output voltages within regulation limits to PWOK asserted at turn on.	100	500	ms
Tvout_holdup	Time 12V, 3.3V, 5V, -12V output stay within regulation after AC loss.	16		ms
Tpwok_holdup	Delay from loss of AC to de-assertion of PWOK.	14		ms
T5Vsb_hold up	Time the 5Vsb output voltage stays within regulation after loss of AC.	70		ms
Tpwok_off	Delay from PWOK de-asserted to output voltages dropping out of regulation limits.	1		ms
Tpwok_low	Duration of PWOK being in the de-asserted state during an OFF/ON cycle using AC or the PSON signal.	100		ms
Tpson_pwok	PWOK being de-asserted delay from PSON deactivate.		5	ms



Note:

1. Rise time (T_{vout_rise}): The 12V, 3.3V, 5V, -12V must rise from 10% to 90% within regulation limits within 1 to 70ms.

For 5Vsb, it is allowed to rise up within 1.0 to 25ms. All outputs must rise monotonically.

2. Tsb-on & Tac-on delay time: The Tsb-on delay time for 5Vsb should be $\leq 1.5\text{s}$ at 115Vac/230Vac with full load.

The Tac-on delay time for 12V, 3.3V, 5V, -12V should be $\leq 3\text{s}$ at 115Vac/230Vac with full load.

3. Main output delay time (T_{sb_vout}): The 12V, 3.3V, 5V, -12V main output being in regulation delay from 5Vsb being in regulation should be 50 to 1500ms when at AC turn on.

4. T_{pson_on_delay}: The 12V, 3.3V, 5V, -12V output must be within regulation after PSON active for 5 to 400ms.

5. Power work OK delay (T_{pwok_on}): PWOK should delay from 12V, 3.3V, 5V, -12V output within regulation for 100 to 500ms.

6. Holdup time (T_{vout_holdup}): The holdup time for 12V should $\geq 16\text{ms}$ at 115/230Vac input and 80%full load.

The holdup time for 5Vsb should $\geq 70\text{ms}$ at 115Vac/230Vac input with full load.

7. Power fail delay time (T_{pwok_off}): 12V dropping out of regulation delay from PWOK should $\geq 1\text{ms}$ when power off at 80%full load.



8. Duration time for PWOK (Tpwok_low): The duration time of PWOK when OFF/ON cycle using AC or the PSON signal should $\geq 100\text{ms}$.

9. PWOK delay PSON deactivates (Tpson_pwok): PWOK being de-asserted should delay from PSON deactivate $\leq 5\text{ms}$.

3.5 Dynamic

The load transient repetition rate shall be tested between 50Hz to 5KHz at 50% duty cycles. The test shall be at least in 50 Hz/1KHz/10KHz condition. The load transient repetition rate is only a test specification.

The output voltage shall remain within limits specified for the step loading, slew rate, and capacitive loading in below table.

Table10.

Output Voltage	Transient Step (A) Percent of Rated current	A/us	Frequency (Hz)	Cap (uF)
+3.3V	30%	0.25	50-5K	2200
+5V	30%	0.25	50-5K	2200
+12V	60%	0.5	50-5K	2200
-12V	0.5A	0.25	50-5K	100
+5Vsb	1A	0.25	50-5K	20

3.6 Capacitive Loading

The power supply shall be stable and can start up at no load with below capacitive loading.

Table11.

Output Voltage	+3.3V	+5V	+12V	-12V	+5Vsb
Capacitive loading (uF)	5000	5000	25000	350	350

3.7 LED Status

There are indicators of LED in power supply module next to the inlet socket. This LED shall have several kind of status as below.



Table12.

Power Supply Status	LED Status
Output ON and OK.	Green
No AC power to all power supplies.	OFF
AC present/Only 5Vsb on (PS off) or PS in cold redundant state.	1Hz Blink Green
AC cord unplugged or AC power lost; with a second power supply in parallel still with AC input power.	Amber
Power supply warning events where the power supply continues to operate: High temperature.	1Hz Blink Amber
Power supply critical event causing a shutdown: UVP, OVP, OCP, OTP, Fan Fail.	Amber
Power supply Firmware updating.	2Hz Blink Green

Note:

1. The power supply's LED is on the case's front panel.

3.8 Hot Swap Requirement

Hot swapping is the process of inserting and extracting a power supply from an operating power system. During this process the output voltage shall remain within the limits. The hot swap test must be conducted when the system is operating under static, dynamic and no loading conditions. The power supply shall use a latching mechanism to prevent insertion and extraction of the power supply when the AC power cord is inserted into the power supply. The power supplies must be able to operate in a hot-swap/redundant configuration.

3.9 Current Sharing

The module's outputs shall be capable of operating in a redundant current share mode. Its outputs shall incorporate an isolation diode for fault isolation. The +5Vsb current sharing shall be a drop type. The +12V, +3.3V, +5V, -12V current sharing shall be an active type. With the current share pins tied together, the +12V output load current shall be balanced to within 10% when output $\geq 50\%$ full load. For example 1+1 redundant mode the current sharing precision calculating formula is $| I_{out1}-I_{out2} | / (I_{out1}+I_{out2})$. Shorting or opening of a current share pin shall not cause the output voltage to go out of steady state regulation.

**Table13.**

<20%	20%≤I<50%	50%≤I≤100%
NA	NA	<10%

3.10 Control Signal

3.10.1 Control and Status Signals

All control signals shall be TTL compatible with respect to the output return and shall be isolated from the primary circuit and be SELV (safety extra-low voltage circuit) rated.

3.10.2 PSON Input Signal

The PSON signal is required to remotely turn on/off the power supply. PSON is an active low signal that turns on the +12V power rail. When this signal is not pulled low by the system, or left open, the outputs (except the +5Vsb) turn off. This signal is pulled to a standby voltage by a pull-up resistor internal to the power supply. Refer to section 3.4 for the timing diagram. This signal accepts an open collector/drain input from the system and a 5.1K ohm resistor pull up to +3.3Vs located in power supply.

Table14. PSON Signal Characteristic

Signal Type	Power State	Logic Level (Min)	Logic Level (Max)
PSON=Low	ON	0V	1.0V
PSON=High or Open	OFF	2.0V	3.46V
Source Current (Low)	ON		4mA

3.10.3 PWOK (Power OK) Output Signal

PWOK is a power OK signal and will be pulled high when the power supply indicates that all the outputs are within the regulation limits of the power supply. When any output voltage falls below regulation limits or when AC power has been removed for a time sufficiently long so that power supply operation is no longer guaranteed, PWOK will be de-asserted to a low state. The start of the PWOK delay time shall be inhibited as long as any power supply output is in current limit. This signal is open collector/drain output and a 5.1K resistor pull-up to +3.3Vs located in module.

**Table15. PWOK Signal Characteristic**

Signal Type	Power State	Logic Level (Min)	Logic Level (Max)
PWOK=Low	Power Not OK	0V	0.4V
PWOK=High	Power OK	2.4V	5.25V
Sink Current (Low)			4mA
Source Current (High)			0.2mA
PWOK Rise and Fall Time			0.1ms

4.0 PROTECTION

When the 3.3V, 5V, -12V output's OCP/OVP or 12V output's OVP is triggered, the power supply will shut down and latched off. The latch can be cleared by toggling the PSON signal or by an AC power interruption. When the input UVP/OVP, OTP or 12V output's OCP,5Vsb output's OCP/OVP is triggered, the power supply will shut down and auto recovery when the fault condition removed.

4.1 Input Over Voltage Protection (Input OVP)

The input OVP should be $305\text{Vac} \pm 10\text{Vac}$ or $415\text{Vdc} \pm 10\text{Vdc}$ and recover point should be $285\text{Vac} \pm 10\text{Vac}$ or $400\text{Vdc} \pm 10\text{Vdc}$.

4.2 Input Under Voltage Protection (Input UVP)

The input UVP should be $74\text{V} \pm 5\text{Vac}$ or $130\text{V} \pm 4\text{Vdc}$ and recover point should be $84\text{V} \pm 5\text{Vac}$ or $134\text{V} \pm 5\text{Vdc}$.

4.3 Output Over Voltage Protection (Output OVP)

The power supply should have over voltage protection to prevent the outputs from exceeding limits, if the OVP occurred, the power supply should shut down and latch-off, the latch will be cleared by toggling the PSON signal or an AC on/off cycle operation, 5Vsb will be auto-recovered after removing OVP limit. 12V output: $13.3\sim 14.5\text{Vdc}$, 3.3V output: $3.9\sim 4.5\text{Vdc}$, 5V & 5Vsb output: $5.7\sim 6.5\text{Vdc}$, -12V output: $-13.3\sim -16.5\text{Vdc}$.

4.4 Over Temperature Protection (OTP)

The power supply will be protected against over temperature conditions caused by loss of fan cooling or excessive ambient temperature. In an OTP condition the PSU will shut down. When the power supply temperature drops to within specified limits, the power supply shall restore power automatically, while the 12Vsb remains always on. The temp sensors are on the transformer PCB



board to sense the synchronous temperature of the MOSFET. when the temperature is below $15 \pm 5^\circ\text{C}$ the fan will stop operating to improve the fan's life, when the temperature is above $20 \pm 5^\circ\text{C}$, the fan will restart running, the fan speed increases linearly according to the synchronous temperature of the MOSFET raising. When the temperature of the MOSFET is above $110 \pm 10^\circ\text{C}$, the PSU will shut down and the temperature is below $70 \pm 10^\circ\text{C}$, the power supply shall restore automatically.

4.5 Short Circuit Protection (SCP)

The power supply shall be protected from damage due to faults between outputs (+12V, +3.3V, +5V, +5Vsb, -12V) and GND. Short circuit of the power supply outputs shall not result in fire hazard, shock hazard, or damage to the power supply. Components shall not be damaged during the short circuit conditions. If the +12V, +5Vsb shorted to GND, the +12V, +5Vsb output will shut down and self-recovery after the short condition removed. If the +3.3V, +5V, -12V shorted to GND, the power supply will shut down and latched off. The latch state can be cleared by toggling the PSON signal or by an AC power interruption of 5 seconds nominal.

4.6 Over Current Protection (OCP)

The power supply should have over current protection to prevent the outputs from exceeding limits. If the +12V, +5Vsb output's OCP triggered, the power supply should shut down and self-recovery after the over current condition removed. If the +3.3V, +5V, -12V output's OCP triggered, the power supply will shut down and latched off. The latch state can be cleared by toggling the PSON signal or by an AC power interruption of 5 seconds nominal. The test should under 1+0 state.

3.3V & 5V: 27~38A, 5Vsb: 4.5~8A, -12V: 1.1~2.0A, 12V: 50~65A.

5.0 OPERATE ENVIRONMENT

5.1 Operate Temperature

Operate temperature: 0°C to $+50^\circ\text{C}$.

5.2 Storage Temperature

Storage temperature: -40°C to $+70^\circ\text{C}$.

5.3 Operate Humidity

Operate Humidity (non-condensing): 10% to 90%.



5.4 Storage Humidity

Storage Humidity (non-condensing): 5% to 95%.

5.5 Operate Altitude

Operate Altitude: 0 to 5000m.

5.6 Storage Altitude

Storage Altitude: 0 to 6000m.

6.0 SAFETY

6.1 Safety Certification

Meet FCC

Meet CE

Meet CCC

6.2 Hi-pot

Primary to secondary, Hi-pot Withstand voltage: 10mA max 3000Vac, 50/60Hz or 5mA max 4242Vdc for 60 seconds when PCBA;

Primary to Earth, Hi-pot Withstand voltage: 10mA max 1500Vac, 50/60Hz or 5mA max 2121Vdc for 60 seconds.

6.3 Grounding Impedance Test

Grounding impedance test using grounding current 32A for 60S and the impedance is less than 100mohm.

6.4 Leakage Current

Leakage current refers to the voltage applied to the no fault, between the metal parts with electrical insulated from each other, or between charged parts and grounding parts, the current formed through the medium around the insulated surface called leakage current. Leakage current is the current flowing through the insulation part under the action of the electrical line or equipment in the absence of failure and voltage. Therefore, it is one of the important symbols to measure the insulation quality of electrical appliances, and is the main quota of product safety performance. The leakage current is limited to a very small value, which plays an important role in improving product safety performance.



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In order to ensure that the leakage current of the power supply case not cause leakage damage to the human body, after inserting the AC power, the leakage current of the power supply should meet the requirements of safety. Under 240Vac/60Hz conditions to be less than 3.5mA.

6.5 Insulation Resistance

Primary to Secondary: 500Vdc for 60S, the insulation resistance shall not be less than 100MΩ.

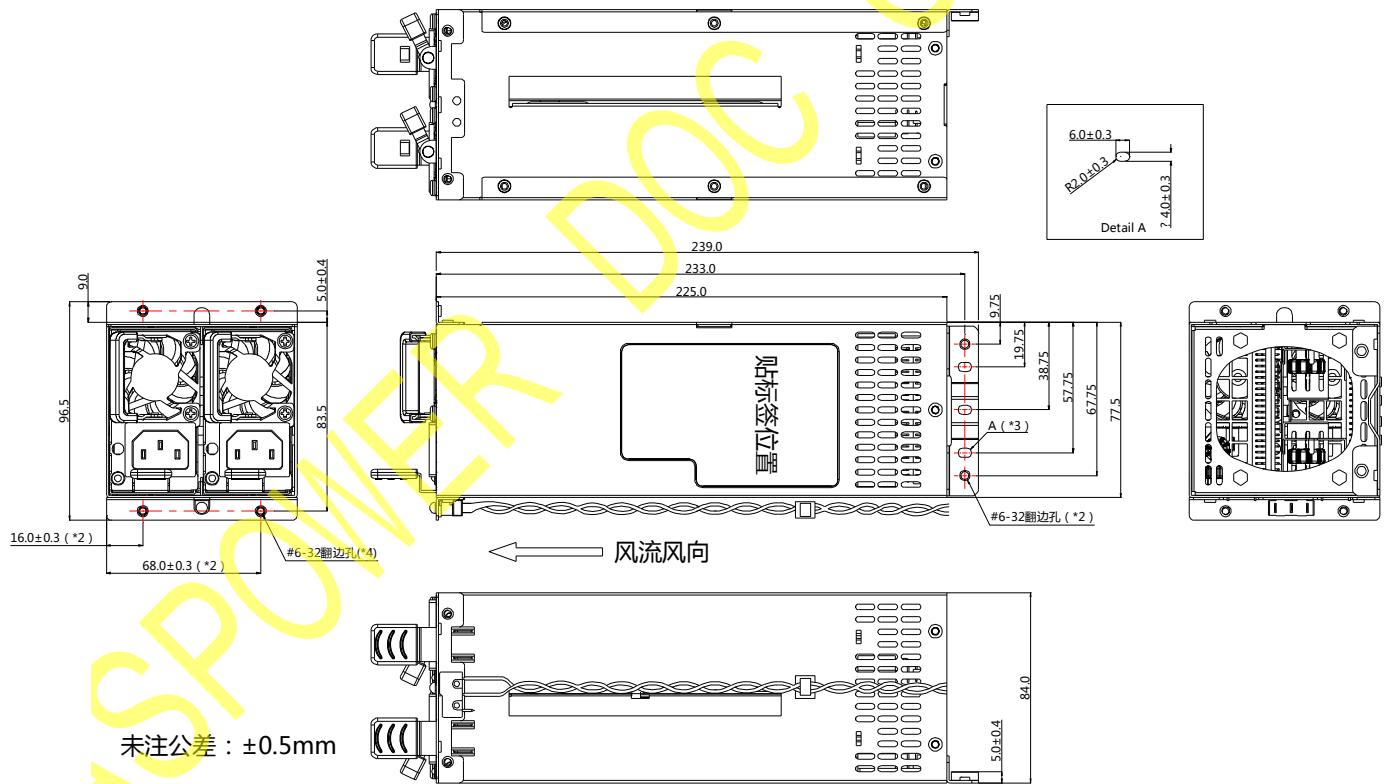
7.0 OUTLINE STRUCTURE

Outline dimension:

Length: 225.0mm

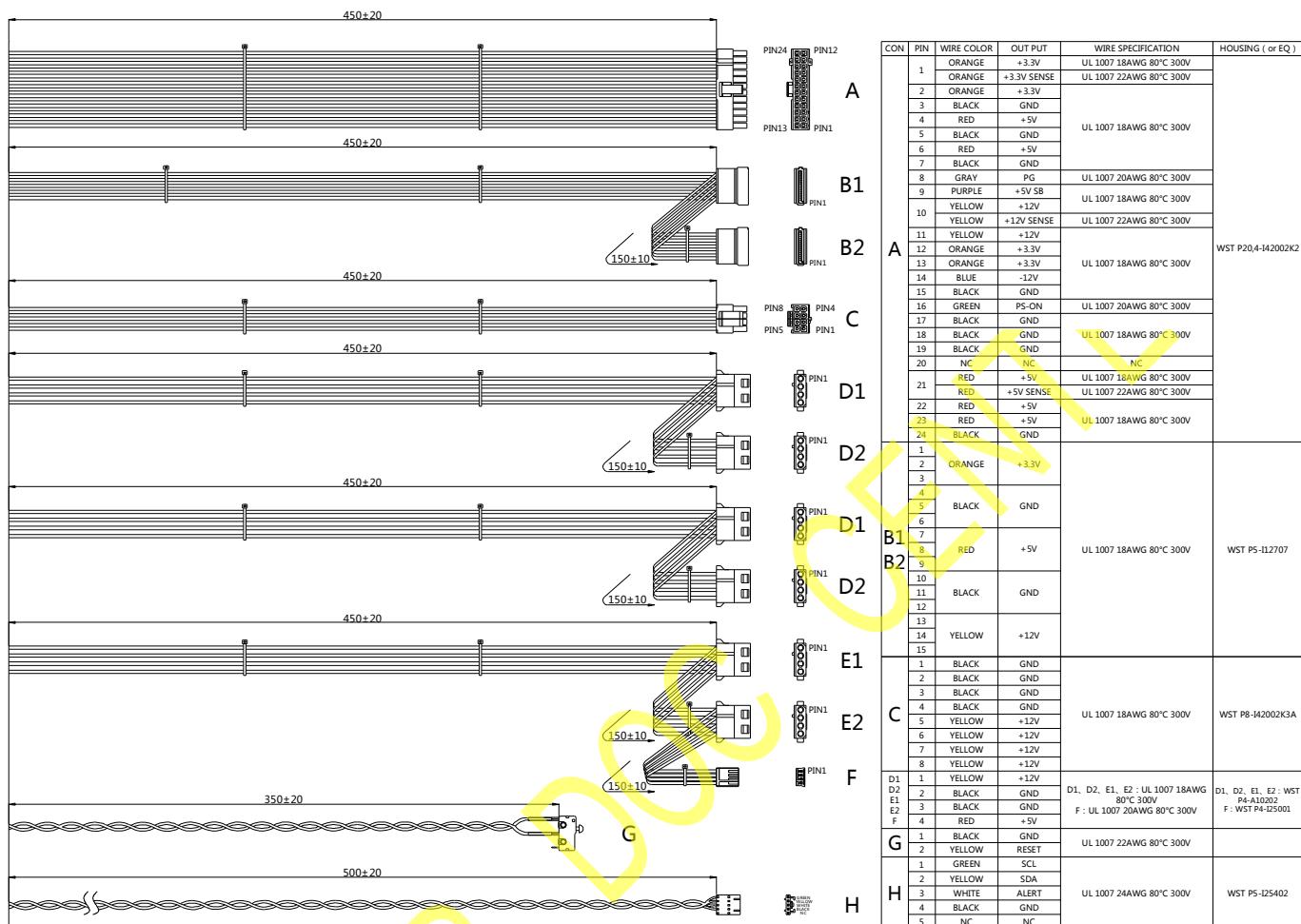
Width: 84.0mm

Thickness: 77.5mm





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8.0 ROHS

Power supply must meet be RoHS6 compliant including the component, PCB, soldering material, case, wire, and so on.

9.0 EMI AND EMS REQUIREMENT

警告

此为 A 级产品，在生活环境，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对干扰采取切实可行的措施。



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Table18. EMI (Electromagnetic Interference) Requirements Table

Item	Description and Requirement	Criterion	Notes
Radiated Emissions	Frequency: 30MHz~1GHz	EN 55032	230V/50Hz input
	Class A with 3dB Margin	FCC Part 15	120V/60Hz input
Conducted Emissions (Voltage)	Frequency: 150KHz~30MHz	EN 55032	230V/50Hz input
	Class A with 3dB Margin	FCC Part 15	120V/60Hz input
Harmonic	EN 61000-3-2 Class A	EN 61000-3-2	230V/50Hz input
Voltage Flicker	Pst \leq 1.0 and Plt \leq 0.65 Voltage change \leq 3.3% Relative Voltage change \leq 4% The voltage changed over 3.3% duration time should \leq 500mS	EN 61000-3-3	230V/50Hz input

Table19. EMS (Electromagnetic Susceptibility) Requirements Table

Item	Description and Requirement	Level	Criterion
Surge	Different Mode: \pm 1KV Common Mode: \pm 2KV	B	EN61000-4-5 EN 55035 GR-1089-CORE
Electrical Fast Transient Group (EFT)	\pm 1KV	B	EN61000-4-4 EN 55035 YD/T 1082
Electrical Static Discharge (ESD)	Touch: \pm 6KV Air: \pm 8KV	B	EN61000-4-2 EN 55035
Radiated Susceptibility (RS)	80M~2.7GHz 3V/m 80% AM	A	EN 61000-4-3 EN 55035
Conducted Susceptibility (CS)	150KHz~80MHz 3V/m 80% AM	A	EN 61000-4-6 EN 55035
Voltage Dips and Interruptions	0% Ut: 10ms	B	EN 61000-4-11
	70% Ut: 500ms	B	EN 61000-4-29
	0% Ut: 5000ms	C	EN 55024 GB 19286



			EN 60601
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Performance criterion of the voltage fluctuation immunity test:

A: The power supply should have no loss of function or degradation of performance according to its specification during the test.

B: Temporary loss of function or degradation of performance is acceptable, but all the outputs should be in an acceptable range and should recover to normal after the test. The power supply shouldn't loss any of outputs, reset or any abnormal warning when doing the test with system.

C: Temporary loss of function or shut down is acceptable, but the power supply should restart with an operator intervention or auto-restart normally after the test.

10.0 MECHANICAL PERFORMANCE

Non-operating:

Sine sweep: 5~500Hz @0.5gRMS at 0.5 octave/min; dwell 15 min at each of 3 resonant points;

Random profile: 5Hz @0.01g^2/Hz (slope up); 20~500Hz @0.02g^2/Hz (flat);

Input acceleration = 3.13gRMS; 10min per axis for 3 axis on all samples.

11.0 MTBF

Quantitative reliability (Quantitative) performance requirements: MTBF (MTBF Mean Time Between Critical Failure), according to the Bellcore standard SR-332 Issue3, the PSU operates continuously under 25degC condition, 115VAC/60Hz 230V/50HZ, and 240VDC input voltage under max load, and MTBF is more than 100000 hours, the testing process should not be interrupted.

Table20.

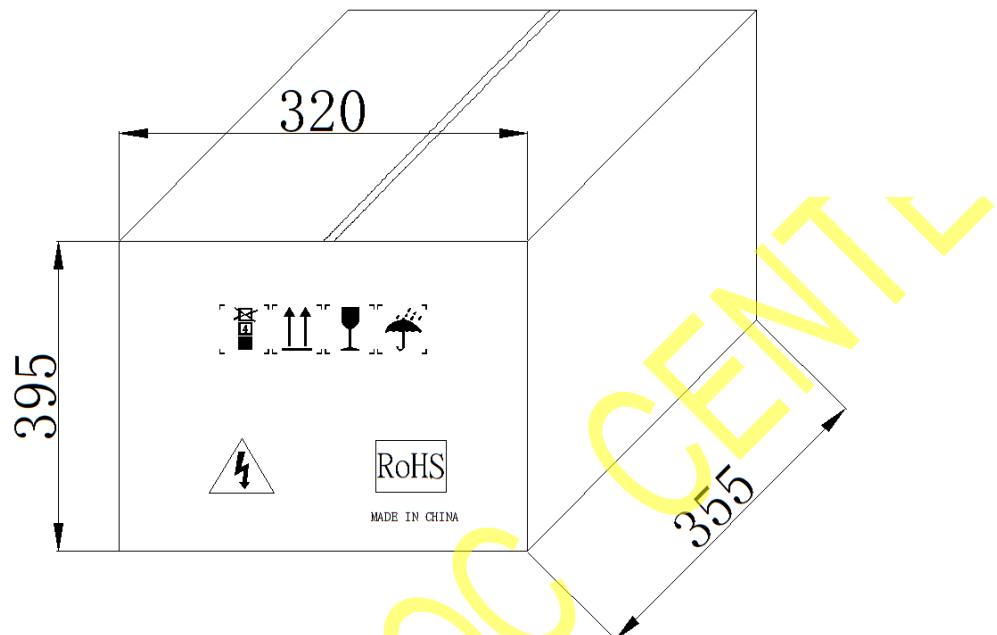
Input Voltage	Load	MTBF
115VAC/60Hz	+3.3V/10.15A, +5V/10.15A, +12V/37.91A, -12V/0.34A, +5Vsb/1.35A	100000hours
230VAC/50Hz	+3.3V/10.15A, +5V/10.15A, +12V/37.91A, -12V/0.34A, +5Vsb/1.35A	100000hours
240VDC	+3.3V/10.15A, +5V/10.15A, +12V/37.91A, -12V/0.34A, +5Vsb/1.35A	100000hours



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12.0 PACKAGE

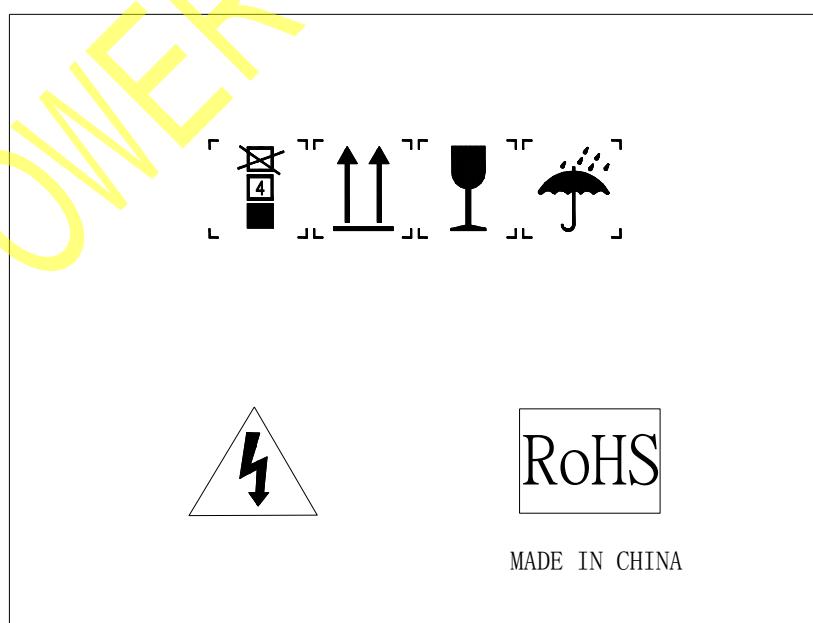
12.1 Outline Diagram of Carton



Note:

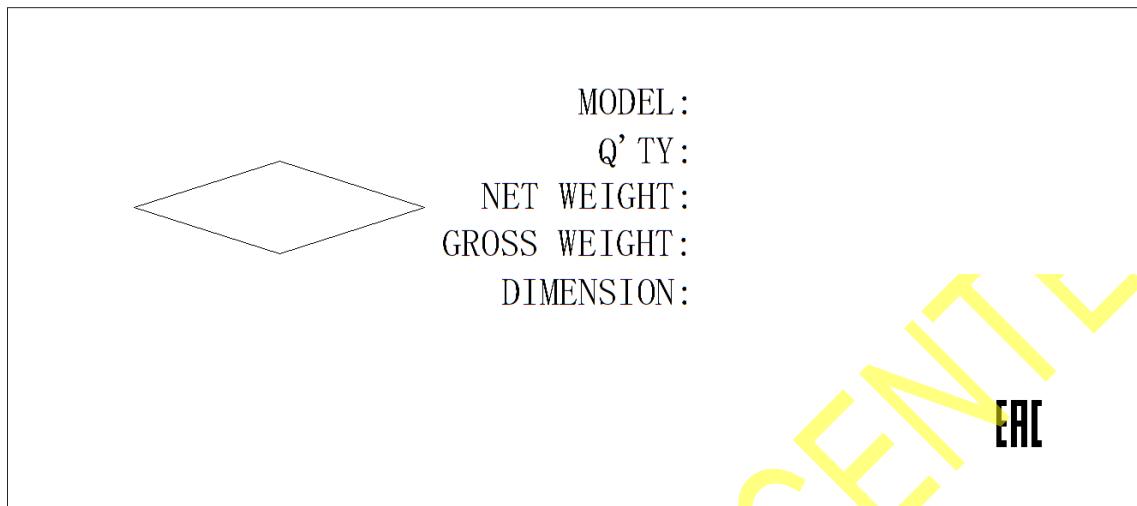
Material: K=K, five layers of corrugated paper.

12.2 Side Label





12.3 Front Label



13.0 SOFTWARE

13.1 Data Precision Requirement

Some data read from power supply should have a precision requirement as below table:

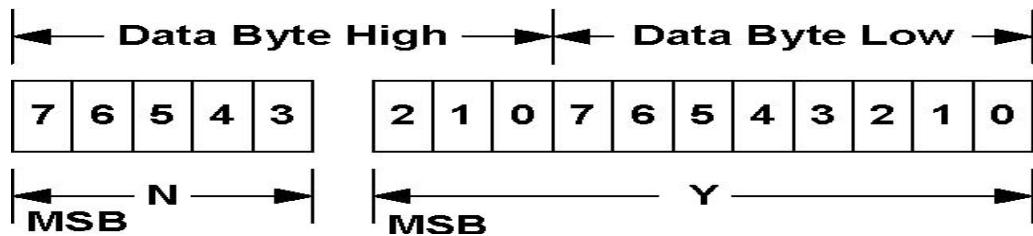
Table21. Required Accuracy (100V-240Vac or 160V-340Vdc)

Output Load Condition	<20%	20%-50%	>50%-100%
Read_VIN(88h)	No Spec	±3%	±3%
Read_Vout(8Bh)	No Spec	±3%	±3%
Read_Iout(8Ch)	No Spec	±5%	±3%
Read_Pout(96h)	No Spec	±5%	±3%
Read_Temperature(8Eh) (Ambient temperature)	±3°C	±3°C	±3°C

13.2 PMBus Specification

Linear Data Formats

The Linear Data Format is a two byte value with: An 11 bit, two's complement mantissa and A 5 bit, two's complement exponent (scaling factor).The format of the two data bytes is illustrated in below Figure.



The relation between Y, N and the “real world” value is: $X = Y \cdot 2^N$

Where, as described above:

X is the “real world” value being communicated

Y is an 11 bit, two’s complement integer;

N is a 5 bit, two’s complement integer.

Devices that use the linear format must accept and be able to process any value of N.

13.3 PMBUS Command Supported

Table22. STATUS_WORD Command

Byte	Bit No.	Status Bit Name	Meaning	Support
Low	7	BUSY	A fault was declared because the device was busy and unable to respond.	No
	6	OFF	This bit is asserted if the unit is not providing power to the output, regardless of the reason, including simply not being enabled.	Yes
	5	VOUT_OV	An output over voltage fault has occurred.	Yes
	4	IOUT_OC	An output over current fault has occurred.	Yes
	3	VIN_UV	An input under voltage fault has occurred.	Yes
	2	TEMPERATURE	A temperature fault or warning has occurred.	Yes
	1	CML	A communications, memory or logic fault has occurred.	No
	0	NONE OF THE ABOVE	A fault or warning not listed in bits [7:1] of this byte has occurred.	No
High	7	VOUT	An output voltage fault or warning has occurred.	Yes
	6	IOUT/POUT	An output current or output power fault or warning has occurred.	Yes
	5	INPUT	An input voltage, input current, or input power fault or	Yes



			warning has occurred.	
4	MFR		A manufacturer specific fault or warning has occurred.	No
3	POWER_GOOD#		The POWER_GOOD signal, if present, is negated.	Yes
2	FANS		A fan or airflow fault or warning has occurred.	Yes
1	OTHER		A bit in STATUS_OTHER is set.	Yes
0	UNKNOWN		A fault type not given in bits [15:1] of the STATUS_WORD has been detected.	No

Table23. STATUS_VOUT Command

Bit	Meaning	Support
7	VOUT Over voltage Fault	Yes
6	VOUT Over voltage Warning	No
5	VOUT Under voltage Warning	No
4	VOUT Under voltage Fault	Yes
3	VOUT_MAX Warning (An attempt has been made to set the output voltage to value higher than allowed by the VOUT_MAX command)	No
2	TON_MAX_FAULT	No
1	TOFF_MAX Warning	No
0	VOUT Tracking Error	No

Table24. STATUS_IOUT Command

Bit	Meaning	Support
7	IOUT Over current Fault	Yes
6	IOUT Over current And Low Voltage Shutdown Fault	No
5	IOUT Over current Warning	Yes
4	IOUT Undervoltage Fault	No
3	Current Share Fault	No
2	Power Limiting	No
1	POUT Overpower Fault	Yes
0	POUT Overpower Warning	Yes

**Table25. STATUS_INPUT Command**

Bit	Meaning	Support
7	VIN Over voltage Fault	Yes
6	VIN Over voltage Warning	No
5	VIN Under voltage Warning	No
4	VIN Under voltage Fault	Yes
3	Unit Off For Insufficient Input Voltage	No
2	IIN Over current Fault	No
1	IIN Over current Warning	No
0	PIN Overpower Warning	No

Table26. STATUS_TEMPERATURE Command

Bit	Meaning	Support
7	Over temperature Fault	Yes
6	Over temperature Warning	Yes
5	Under temperature Warnings	No
4	Under temperature Fault	No
3	Reserved	No
2	Reserved	
1	Reserved	
0	Reserved	

Table27. STATUS_FAN_1_2 Command

Bit	Meaning	Support
7	Fan 1 Fault	Yes
6	Fan 2 Fault	No
5	Fan 1 Warning	No
4	Fan 2 Warning	No
3	Fan 1 Speed Overridden	No
2	Fan 2 Speed Overridden	No
1	Airflow Fault	No
0	Airflow Warning	No

**Table28. STATUS _OTHER Command**

Bit	Meaning	Support
7	Transformer primary and secondary communication failures(Mfr. Defined)	Yes
6	PFC voltage ok check(Mfr. Defined)	Yes
5	Input A Fuse Or Circuit Breaker Fault	No
4	Input B Fuse Or Circuit Breaker Fault	No
3	Input A OR-ing Device Fault	No
2	Input B OR-ing Device Fault	No
1	Output OR-ing Device Fault	No
0	Reserved	No

Table29. Supported Command Summary

CMD Code	Name	Type	Bytes	Conditions
03h	CLEAR_FAULTS	Send Byte	0	
19h	CAPABILITY	Read Byte	1	0x90
20h	VOUT_MODE	Read Byte	1	17h(n=-9)
78h	STATUS_BYTE	Read Byte	1	
79h	STATUS_WORD	Read Word	2	
7Ah	STATUS_VOUT	Read Byte	1	
7Bh	STATUS_IOUT	Read Byte	1	
7Ch	STATUS_INPUT	Read Byte	1	
7Dh	STATUS_TEMPERATURE	Read Byte	1	
7Fh	STATUS_OTHER	Read Byte	1	
80h	READ_VIN_TYPE	Read Byte	1	00:NO AC; 01:AC; 02:HVDC
81h	STATUS_FANS_1_2	Read Byte	1	
84h	READ_Vsb_OUT(Mfr. Defined)	Read Word	2	
88h	READ_VIN	Read Word	2	
8Bh	READ_VOUT	Read Word	2	
8Ch	READ_IOUT	Read Word	2	



8Eh	READ_TEMPERATURE_2	Read Word	2	
90h	READ_FAN_SPEED_1	Read Word	2	Rpm value
96h	READ_POUT	Read Word	2	
97h	READ_PIN	Read Word	2	
98h	PMBUS_REVISION	Read Byte	1	V1.2
99h	MFR_ID	Read Block	14	See MFR Data table
9Ah	MFR_MODEL	Read Block	16	See MFR Data table
9Bh	MFR_REVISION	Read Block	6	See MFR Data table
A0h	MFR_VIN_MIN	Read Word	2	See MFR Data table
A1h	MFR_VIN_MAX	Read Word	2	See MFR Data table
A4h	MFR_VOUT_MIN	Read Word	2	See MFR Data table
A5h	MFR_VOUT_MAX	Read Word	2	See MFR Data table
A6h	MFR_IOUT_MAX	Read Word	2	See MFR Data table
A7h	MFR_POUT_MAX	Read Word	2	See MFR Data table
A8h	MFR_TAMBIENT_MAX	Read Word	2	See MFR Data table
A9h	MFR_TAMBIENT_MIN	Read Word	2	See MFR Data table
D0h	SMART_ON_CONFIG	Write Byte Read Byte	1	00h Standard Redundancy 01h Smart On Active 02h Smart Standby 03h Smart Standby 04h Smart Standby

Table30. MFR Data Table

CMD Code	Name	Conditions
99h	MFR_ID	ASPOWER#####
9Ah	MFR_MODEL	U1A-D10550-DRB-E
9Bh	MFR_REVISION	E.g.: "1.0SA0"
A0h	MFR_VIN_MIN	90
A1h	MFR_VIN_MAX	264
A4h	MFR_VOUT_MIN	11.4
A5h	MFR_VOUT_MAX	12.6



A6h	MFR_IOUT_MAX	45
A7h	MFR_POUT_MAX	550
A8h	MFR_TAMBIENT_MAX	50
A9h	MFR_TAMBIENT_MIN	0

13.4 FRU Format

13.4.1 FRU Data

The FRU data format shall be compliant with the IPMI ver.1.0 (per rev.1.1 from Sept.25, 1999) specification. The current version of these specifications is available at <http://developer.intel.com/design/servers/ipmi/spec.htm>. The following is the exact listing of the EEPROM content. During testing this listing shall be followed and verified.

13.4.2 FRU Device Protocol

The FRU device will implement the same protocols as the commonly used 24C02 device, including the Byte Read, Sequential Read, Byte Write, and Page Read protocols.

13.4.3 FRU Format

The information to be contained in the FRU device is shown in the following table.

Table31

Area Type	Description
Common Header	As defined by the FRU document
Internal Use Area	Reserve
Chassis Info Area	Not applicable, do not reserve
Board Info Area	Not applicable, do not reserve
Product Info Area	As defined by the IPMI FRU document. Product information shall be defined as follows:
Field Name	Field Description
Manufacturer Name	{Formal name of manufacturer}
Product Name	{Manufacturer's model number}
Product part/model number	Customer part number
Product Version	Customer current revision



Product Serial Number	{Defined at time of manufacture}
Asset Tag	{Not used, code is zero length byte}
FRU File ID	{Not required}
PAD Bytes	{Added as necessary to allow for 8-byte offset to next area}
Multi-Record Area	<p>As defined by the IPMI FRU document. The following record types shall be used on this power supply:</p> <p style="padding-left: 20px;">Power Supply Information (Record Type 0x00)</p> <p style="padding-left: 20px;">DC Output (Record Type 0x01)</p> <p>No other record types are required for the power supply.</p> <p>Multi-Record information shall be defined as follows:</p>
Field Name (PS Info)	Power Supply Information
Overall Capacity (watts)	
Peak VA	
Inrush current (A)	
Inrush interval (ms)	
Low end input voltage range 1	
High end input voltage range 1	
Low end input voltage range 2	
High end input voltage range 2	
Low end Input frequency range	
High end Input frequency range	
Input dropout tolerance	
Binary flags	
Peak Wattage	
Combined wattage	
Predictive fail tachometer lower threshold	
Field Name (Output)	Power supply's output voltage information
Output Information	
Nominal voltage	
Maximum negative voltage	



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Maximum positive voltage	
Ripple and Noise pk-pk	
Minimum current draw	
Maximum current draw	

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Mfg Date & Time:

2017/12/24

4:14:00 PM

U1A-D10550-DRB FRU MEMORY MAP XXF

ITEM	ADDRESS	BYTE VALUE (DEC)	BYTE VALUE (hex)	DESCRIPTION	BLOCK TITLE
1	0000H	1	01	FORMAT VERSION NUMBER	
2	0001H	1	01	INTERNAL USE AREA OFFSET	
3	0002H	0	00	CHASSIS INFO AREA OFFSET	
4	0003H	0	00	BOARD AREA OFFSET	
5	0004H	3	03	PRODUCT INFO AREA OFFSET	
6	0005H	11	0B	MULTI RECORD AREA OFFSET	
7	0006H	0	00	PAD (ALWAYS ZERO)	
8	0007H	240	F0	ZERO CHECK SUM (100H-TOTAL BYTES)	
9	0008H	1	01	PAD (ALWAYS ZERO)	INTERNAL USE AREA
10	0009H	0	00	PAD (ALWAYS ZERO)	
11	000AH	0	00	PAD (ALWAYS ZERO)	
12	000BH	0	00	PAD (ALWAYS ZERO)	
13	000CH	0	00	PAD (ALWAYS ZERO)	
14	000DH	0	00	PAD (ALWAYS ZERO)	
15	000EH	0	00	PAD (ALWAYS ZERO)	
16	000FH	0	00	PAD (ALWAYS ZERO)	
17	0010H	0	00	PAD (ALWAYS ZERO)	
18	0011H	0	00	PAD (ALWAYS ZERO)	
19	0012H	0	00	PAD (ALWAYS ZERO)	
20	0013H	0	00	PAD (ALWAYS ZERO)	
21	0014H	0	00	PAD (ALWAYS ZERO)	
22	0015H	0	00	PAD (ALWAYS ZERO)	
23	0016H	0	00	PAD (ALWAYS ZERO)	
24	0017H	0	00	PAD (ALWAYS ZERO)	
25	0018H	1	01	PRODUCT AREA FORMAT VERSION	PRODUCT INFORMATION AREA
26	0019H	8	08	PRODUCT AREA LENGTH (#BYTES / 8)	
27	001AH	25	19	LANGUAGE (ENGLISH)	
28	001BH	199	C7	PRODUCT MANUFACTURER NAME LENGTH / byte	
29	001CH	65	41	A	
30	001DH	83	53	S	
31	001EH	80	50	P	
32	001FH	79	4F	O	
33	0020H	87	57	W	
34	0021H	69	45	E	
35	0022H	82	52	R	
36	0023H	207	CF	PRODUCT NAME LENGTH	
37	0024H	85	55	U	
38	0025H	49	31	I	
39	0026H	65	41	A	
40	0027H	45	2D	-	
41	0028H	68	44	D	
42	0029H	49	31	I	
43	002AH	48	30	O	
44	002BH	53	35	5	
45	002CH	53	35	5	
46	002DH	48	30	O	
47	002EH	45	2D	-	
48	002FH	68	44	D	
49	0030H	82	52	R	
50	0031H	66	42	B	
51	0032H	32	20		
52	0033H	197	C5	CUSTOMER PRODUCT SERIAL NO. LENGTH	Part NO.
53	0034H	32	20		
54	0035H	32	20		
55	0036H	32	20		
56	0037H	32	20		
57	0038H	32	20		
58	0039H	195	C3	BORAD VERSION type/length	
59	003AH	49	31	1	To be updated
60	003BH	46	2E	.	To be updated
61	003CH	48	30	0	To be updated
62	003DH	214	D6	PRODUCT SERIAL NO. LENGTH	
63	003EH	85	55	U	To be updated
64	003FH	49	31	1	To be updated
65	0040H	65	41	A	To be updated
66	0041H	68	44	D	To be updated



59	0042H	49	31	1	To be updated
60	0043H	48	30	0	To be updated
61	0044H	53	35	5	To be updated
62	0045H	53	35	5	To be updated
63	0046H	48	30	0	To be updated
64	0047H	82	52	R	To be updated
65	0048H	49	31	1	To be updated
66	0049H	73	49	I	To be updated
67	004AH	80	50	P	To be updated
68	004BH	67	43	C	To be updated
69	004CH	49	31	1	To be updated
70	004DH	74	4A	J	To be updated
71	004EH	65	41	A	To be updated
72	004FH	75	4B	K	To be updated
1	0050H	48	30	0	To be updated
2	0051H	52	34	4	To be updated
3	0052H	50	32	2	To be updated
4	0053H	51	33	3	To be updated
5	0054H	192	C0	ASSET TAG type/length byte	
6	0055H	192	C0	FRU File ID type/length byte	
7	0056H	193	C1	NO MORE FIELDS MARKER	
8	0057H	204	CC	CHECKSUM (100H - (LOWER BYTE (SUM OF BYTES)))	To be updated
9	0058H	0	00	RECORD TYPE ID 0X00 = POWER SUPPLY INFORMATION	MULTIRECORD
10	0059H	2	02	7 : 7 END OF LIST , 6 : 4 = 000B , 3 : 0 RECORD FORMAT VERSION = 2	HEADER
11	005AH	24	18	RECORD LENGTH OF MULTIRECORD	
12	005BH	188	BC	RECORD CHECKSUM	
13	005CH	42	2A	HEADER CHECKSUM	
14	005DH	38	26	15-12 : RESERVED , WRITE AS 0000B	550W
15	005EH	2	02	11-0 : OVERALL CAPACITY (WATTS)	550W
16	005FH	38	26	PEAK VALUE	550W
17	0060H	2	02	LSB FIRST	550W
18	0061H	55	37	INRUSH CURRENT FFH IF NOT SPECIFIED	55A
19	0062H	5	05	SET TO 0 IF NO INRUSH CURRENT SPECIFIED	5mS
20	0063H	16	10	LOW END INPUT VOLTAGE RANGE 1 100V = 2328H	100V
21	0064H	39	27		100V
22	0065H	156	9C	HIGH END INPUT VOLTAGE RANGE 1 140 = 36B0H	127V
23	0066H	49	31		127V
24	0067H	32	20	LOW END INPUT VOLTAGE RANGE 2 180V = 4650H	200V
25	0068H	78	4E		200V
26	0069H	192	C0	HIGH END INPUT VOLTAGE RANGE 2 264 = 6720H	240V
27	006AH	93	5D		240V
28	006BH	47	2F	LOW END INPUT FREQUENCY RANGE 47HZ = 2FH	47Hz
29	006CH	63	3F	HIGH END INPUT FREQUENCY RANGE 63HZ = 3FH	63Hz
1	006DH	12	0C	A / C DROPOUT TOLERANCE IN mS 12mS = 0CH	12mS
2	006EH	26	1A	4 : TACHOMETER PULSES PER ROTATION / PREDICTIVE FALL POLARITY YES = 1	
3	006FH	38	26	PEAK WATTAGE 15-12 : HOLD UP TIME IN SECONDS 1S = 1H	550W
4	0070H	194	C2	11-0 PEAK CAPACITY (WATTS) (LSB FIRST) 575W = 01C2H	12S
5	0071H	0	00	COMBINED WATTAGE 7-4 : VOLTAGE 1 , 3-0 : VOLTAGE 2 = 00 H	
6	0072H	38	26	BYTE 2 : 3 TOTAL COMBINED WATTAGE (LSB FIRST) W = 0000H	550W
7	0073H	2	02		550W
8	0074H	133	85	PREDICTIVE FAIL TACHOMETER LOWER THRESHOLD (RPM / 60) 2000/60 → 21h	
9	0075H	1	01	RECORD TYPE ID 0X01 = DC OUTPUT Record	MULTIRECORD
10	0076H	2	02	7 : 7 END OF LIST , 6 : 4 = 000B , 3 : 0 RECORD FORMAT VERSION = 2	HEADER
11	0077H	13	0D	RECORD LENGTH OF MULTIRECORD	
12	0078H	245	FF	RECORD CHECKSUM	
13	0079H	241	F1	HEADER CHECKSUM	
14	007AH	1	01	+12V 7 : STANDBY = 0 , 6-4 : RESERVED 000B , 3-0 : OUTPUT NUMBER = 0001B	*12V
15	007BH	176	B0	NOMINAL VOLTAGE (10mV) 1200 = 04B0H	12.0V
16	007CH	4	04		12.0V
17	007DH	116	74	MAXIMUM NEGATIVE VOLTAGE DEVIATION (10mV)	11.4V
18	007EH	4	04		11.4V
1	007FH	236	EC	MAXIMUM POSITIVE VOLTAGE DEVIATION (10mV)	12.6V
2	0080H	4	04		12.6V
3	0081H	120	78	RIPPLE AND NOISE PK-PK 10Hz TO 20MHz (mV) 120mV = 0078H	120mV



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4	0082H	0	00		120mV
5	0083H	244	F4	MINIMUM CURRENT DRAW(mA)	0.5A
6	0084H	1	01		0.5A
7	0085H	200	C8	MAXIMUM CURRENT DRAW(mA)	45A
8	0086H	175	AF		45A
9	0087H	1	01	RECORD TYPE ID 0X01 = DC OUTPUT Record	MULTIRECORD
10	0088H	130	82	7 : 7 END OF LIST , 6 : 4 =000B , 3 : 0 RECORD FORMAT VERSION = 2	HEADER
11	0089H	13	0D	RECORD LENGTH OF MULTIRECORD	
12	008AH	225	E1	RECORD CHECKSUM	
13	008BH	143	8F	HEADER CHECKSUM	
14	008CH	130	82	+12VSB 7 : STANDBY = 0 , 6-4 : RESERVED 000B , 3-0 : OUTPUT NUMBER = 0010B	+12VSB
15	008DH	176	B0	NOMINAL VOLTAGE(10mV)	12V
16	008EH	4	04		12V
17	008FH	116	74	MAXIMUM NEGATIVE VOLTAGE DEVIATION(10mV)	11.4V
18	0090H	4	04		11.4V
1	0091H	236	EC	MAXIMUM POSITIVE VOLTAGE DEVIATION(10mV)	12.6V
2	0092H	4	04		12.6V
3	0093H	120	78	RIPPLE AND NOISE PK - PK 10Hz TO 20MHz(mV) 50mV = 0032H	120mV
4	0094H	0	00		120mV
5	0095H	50	32	MINIMUM CURRENT DRAW(mA) 0mA = 0000H	0.05A
6	0096H	0	00		0.05A
7	0097H	208	D0	MAXIMUM CURRENT DRAW(mA)	2A
8	0098H	07	07		2A
9	0099H	0	00	Unused Area	
10	009AH	0	00	Unused Area	
11	009BH	0	00	Unused Area	
12	009CH	0	00	Unused Area	
13	009DH	0	00	Unused Area	
14	009EH	0	00	Unused Area	
15	009FH	0	00	Unused Area	
16	00A0H	0	00	Unused Area	
17	00A1H	0	00	Unused Area	
18	00A2H	0	00	Unused Area	
19	00A3H	0	00	Unused Area	
20	00A4H	0	00	Unused Area	
21	00A5H	0	00	Unused Area	
22	00A6H	0	00	Unused Area	
23	00A7H	0	00	Unused Area	
24	00A8H	0	00	Unused Area	
25	00A9H	0	00	Unused Area	
26	00AAH	0	00	Unused Area	
27	00ABH	0	00	Unused Area	
28	00ACH	0	00	Unused Area	
29	00ADH	0	00	Unused Area	
30	00AEH	0	00	Unused Area	
31	00AFH	0	00	Unused Area	
32	00B0H	0	00	Unused Area	
33	00B1H	0	00	Unused Area	
34	00B2H	0	00	Unused Area	
35	00B3H	0	00	Unused Area	
36	00B4H	0	00	Unused Area	
37	00B5H	0	00	Unused Area	
38	00B6H	0	00	Unused Area	
39	00B7H	0	00	Unused Area	
40	00B8H	0	00	Unused Area	
41	00B9H	0	00	Unused Area	
42	00BAH	0	00	Unused Area	
43	00BBH	0	00	Unused Area	
44	00BCH	0	00	Unused Area	
45	00BDH	0	00	Unused Area	
46	00BEH	0	00	Unused Area	
47	00BFH	0	00	Unused Area	
48	00C0H	0	00	Unused Area	
49	00C1H	0	00	Unused Area	
50	00C2H	0	00	Unused Area	
51	00C3H	0	00	Unused Area	
52	00C4H	0	00	Unused Area	
53	00C5H	0	00	Unused Area	
54	00C6H	0	00	Unused Area	
55	00C7H	0	00	Unused Area	



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56	00C8H	0	00	Unused Area
57	00C9H	0	00	Unused Area
58	00CAH	0	00	Unused Area
59	00CBH	0	00	Unused Area
60	00CCH	0	00	Unused Area
61	00CDH	0	00	Unused Area
62	00CEH	0	00	Unused Area
63	00CFH	0	00	Unused Area
64	00D0H	0	00	Unused Area
65	00D1H	0	00	Unused Area
66	00D2H	0	00	Unused Area
67	00D3H	0	00	Unused Area
68	00D4H	0	00	Unused Area
69	00D5H	0	00	Unused Area
70	00D6H	0	00	Unused Area
71	00D7H	0	00	Unused Area
72	00D8H	0	00	Unused Area
73	00D9H	0	00	Unused Area
74	00DAH	0	00	Unused Area
75	00DBH	0	00	Unused Area
76	00DCH	0	00	Unused Area
77	00DDH	0	00	Unused Area
78	00DEH	0	00	Unused Area
79	00DFH	0	00	Unused Area
80	00E0H	0	00	Unused Area
81	00E1H	0	00	Unused Area
82	00E2H	0	00	Unused Area
83	00E3H	0	00	Unused Area
84	00E4H	0	00	Unused Area
85	00E5H	0	00	Unused Area
86	00E6H	0	00	Unused Area
87	00E7H	0	00	Unused Area
88	00E8H	0	00	Unused Area
89	00E9H	0	00	Unused Area
90	00EAH	0	00	Unused Area
91	00EBH	0	00	Unused Area
92	00ECH	0	00	Unused Area
93	00EDH	0	00	Unused Area
94	00EEH	0	00	Unused Area
95	00EFH	0	00	Unused Area
96	00FOH	0	00	Unused Area
97	00F1H	0	00	Unused Area
98	00F2H	0	00	Unused Area
99	00F3H	0	00	Unused Area
100	00F4H	0	00	Unused Area
101	00F5H	0	00	Unused Area
102	00F6H	0	00	Unused Area
103	00F7H	0	00	Unused Area
104	00F8H	0	00	Unused Area
105	00F9H	0	00	Unused Area
106	00FAH	0	00	Unused Area
107	00FBH	0	00	Unused Area
108	00FCH	0	00	Unused Area
109	00FDH	0	00	Unused Area
110	00FEH	0	00	Unused Area
111	00FFH	0	00	Unused Area



ASPOWER

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FRU DATA FOLLOW WITH SPEC LABEL, SPEC LABEL SHOULD BE CONFIRMED BY M.E.

Table showing HEX Information:

Rev: XXF

Addr	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	01	01	00	00	03	0B	00	F0	01	00	00	00	00	00	00	00
0010	00	00	00	00	00	00	00	00	01	08	19	C7	41	53	50	4F
0020	57	45	52	CF	55	31	41	2D	44	31	30	35	35	30	2D	44
0030	52	42	20	C5	20	20	20	20	20	C3	31	2E	32	D6	41	44
0040	30	35	35	48	43	31	39	30	30	30	38	31	20	20	20	20
0050	20	20	20	20	C0	C0	C1	F2	00	02	18	BC	2A	26	02	26
0060	02	37	05	10	27	9C	31	20	4E	C0	5D	2F	3F	0C	1A	26
0070	C2	00	26	02	85	01	02	0D	FF	F1	01	B0	04	74	04	EC
0080	04	78	00	F4	01	C8	AF	01	82	0D	E1	8F	82	B0	04	74
0090	04	EC	04	78	00	32	00	D0	07	00	00	00	00	00	00	00
00A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

CHECK LIST

All data written to EEPROM should be ASCII code in hexadecimal format

Note: All of the Check Sum are Calculated by Zero Check Sum

NO.	Item	Address	Byte	Description	Value
1	Checksum1	07H	1	100H - (Low Byte Sum(00H~06H))	F0
2	Checksum2	57H	1	100H - (Low Byte Sum(18H~56H))	Updated
3	Checksum3	5BH	1	100H - (Low Byte Sum(5DH~74H))	BC
4	Checksum4	5CH	1	100H - (Low Byte Sum(58H~5BH))	2A
5	Checksum6	78H	1	100H - (Low Byte Sum(7AH~86H))	FF
6	Checksum7	79H	1	100H - (Low Byte Sum(75H~78H))	F1
7	Checksum8	8AH	1	100H - (Low Byte Sum(8CH~98H))	E1
8	Checksum9	8BH	1	100H - (Low Byte Sum(87H~8AH))	8F
9	Manufacturer Name	1CH~22H	7	Use the ASCII Code	"ASPOWER"
10	Product Name	24H~32H	15	Use the ASCII Code	"U1A-D10550-DRB"
11	CUSTOMER PRODUCT NO.	34H~38H	5	Use the ASCII Code	
12	Product Version NO	3AH~3CH	3	Use the ASCII Code*(the value must to accord with #2)	Updated
13	Product Serial No.	3EH~53H	22	Use the ASCII Code*(the value must to accord with #1)	Updated
14	Unused Area	99H~FFH			00





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14.0 LABEL AND BAR CODE

14.1 Label

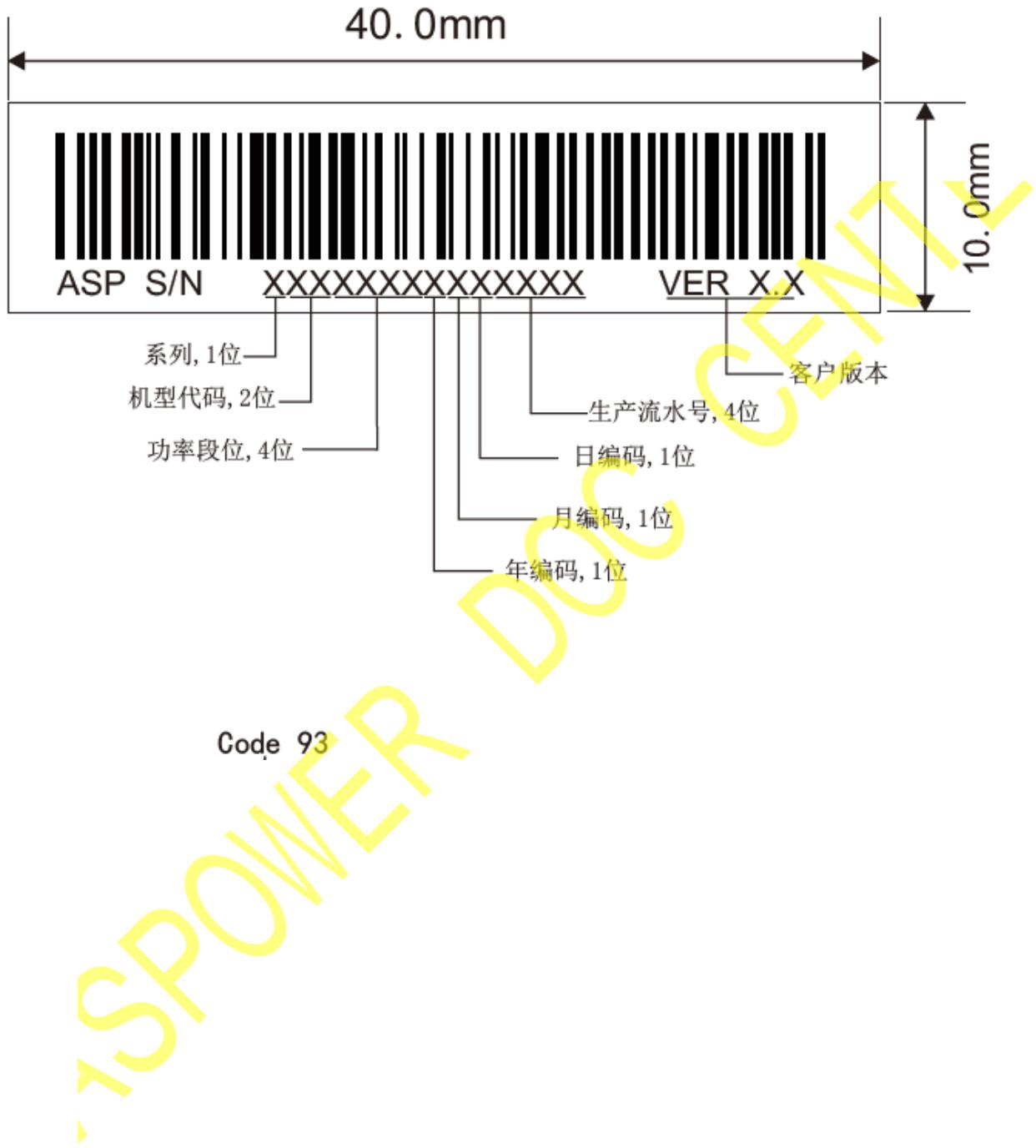




ASPOWER
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14.2 Bar Code

Outline dimension: 40mm (L) *10 (W)





ASPOWER

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1. 系列类型

机种系列服从欧陆通产品分类原则.

2. 机型代码

从01-ZZ表示同系列同一功率段, 不同分支不同客户的代码.

3. 功率段位

0800=800W, 1200=1200W, 3000=3000W等, 依次类推.

4. 年编码格式

年份	2015	2016	2017	2018	2019	2020	2021	2022
编号	A	B	C	D	E	F	G	H

5. 月编码规则

月份	1月	2月	3月	4月	5月	6月	11月	12月
编号	1	2	3	4	5	6	B	C

6. 日编码规则

日份	1号	2号	3号	4号	5号	6号	7号	8号	9号
编号	1	2	3	4	5	6	7	8	9
日份	10号	11号	12号	13号	14号	15号	16号	17号	18号
编号	A	B	C	D	E	F	G	H	J
日份	19号	20号	21号	22号	23号	24号	25号	26号	27号
编号	K	L	M	N	P	Q	R	S	T
日份	28号	29号	30号	31号					
编号	U	V	W	X					

7. 生产流水号格式

流水号用4位来表示, 计数如0001~9999