

## Features :

- Meet 1U rack mount system
- Universal AC input / Full range
- Active power factor  $\geq 94\%$
- Protections: Short circuit/Overload/Over voltage
- Forced air cooling by built-in DC fan
- With power good and fail signal output
- Built-in remote ON-OFF control
- Remote DC sense +5V and +3.3V
- With +5VSB: 0 ~ 2.0A max.
- 100% full load burn-in test
- High efficiency
- 2 years warranty

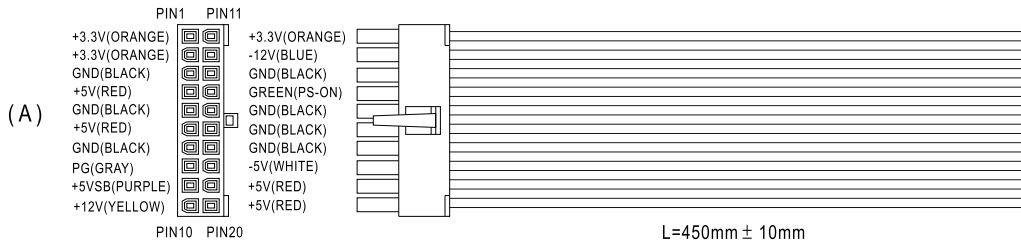
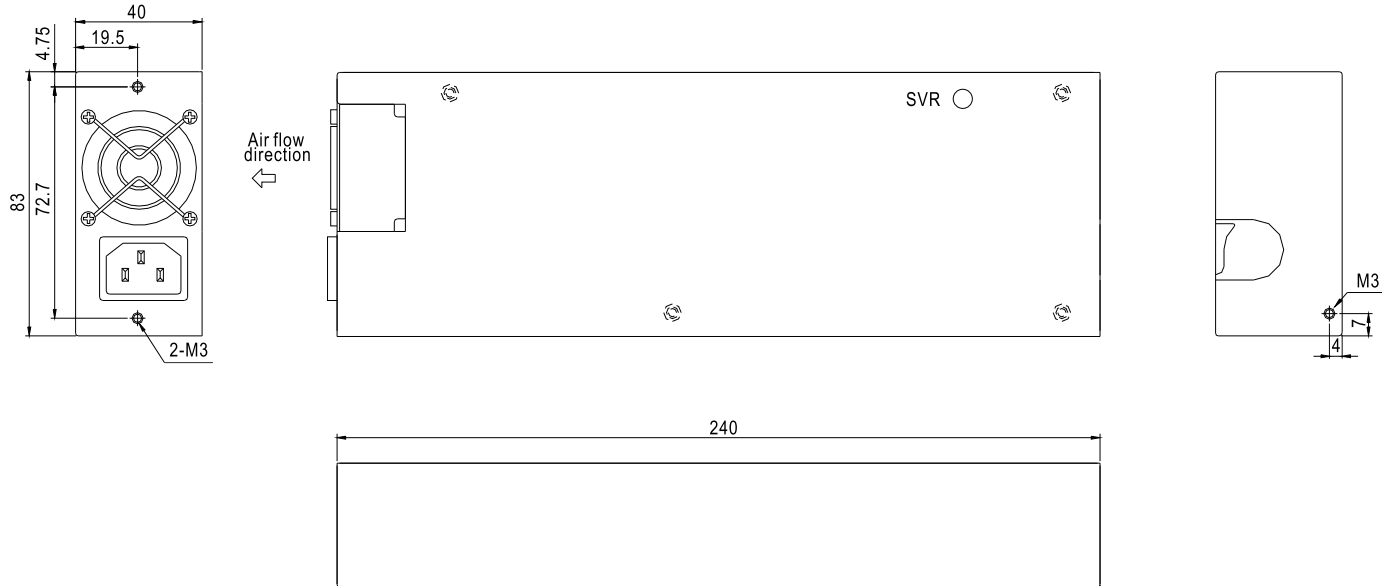


## SPECIFICATION

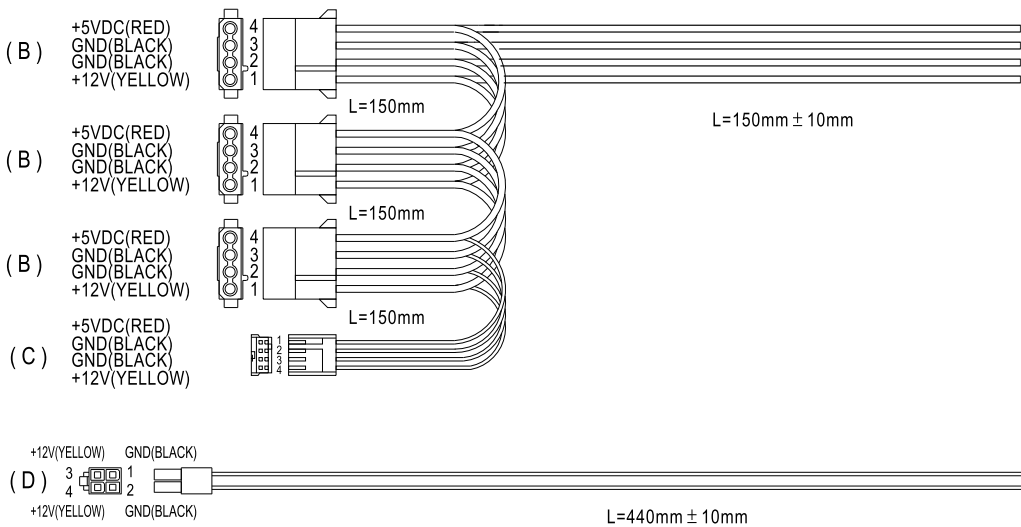
| MODEL                 |                              | IPC-250                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |          |          |          |         |
|-----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|----------|----------|---------|
| OUTPUT                | OUTPUT NUMBER                | CH1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CH2     | CH3      | CH4      | CH5      | STANDBY |
|                       | DC VOLTAGE                   | 3.3V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5V      | 12V      | -5V      | -12V     | 5VSB    |
|                       | RATED CURRENT                | 20A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 25A     | 15A      | 0.5A     | 1A       | 2A      |
|                       | CURRENT RANGE                | 0 ~ 20A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1 ~ 25A | 1 ~ 15A  | 0 ~ 0.5A | 0.1 ~ 1A | 0 ~ 2A  |
|                       | RATED POWER                  | 250W continue. +5V,+3.3V,+12V combine total power output shall not exceed 230W. (The +5 & +3.3V combine total output shall not exceed 150W)<br>(The -5 & -12V combine total output shall not exceed 12W)                                                                                                                                                                                                                                                                                                                                                                                                             |         |          |          |          |         |
|                       | RIPPLE & NOISE (max.) Note.2 | 50mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 50mVp-p | 120mVp-p | 100mVp-p | 120mVp-p | 50mVp-p |
|                       | VOLTAGE ADJ. RANGE           | CH2 : 5.05 ~ 5.5V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |          |          |          |         |
|                       | VOLTAGE TOLERANCE Note.3     | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±5.0%   | ±7.0%    | ±8.0%    | ±10%     | ±5.0%   |
|                       | LINE REGULATION              | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±1.0%   | ±1.0%    | ±2.0%    | ±2.0%    | ±1.0%   |
|                       | LOAD REGULATION              | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±5.0%   | ±7.0%    | ±8.0%    | ±10%     | ±5.0%   |
| INPUT                 | SETUP, RISE TIME             | 800ms, 20ms/230VAC    2500ms, 20ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |          |          |          |         |
|                       | HOLD TIME (Typ.)             | 16ms/230VAC    16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |          |          |          |         |
|                       | VOLTAGE RANGE                | 90 ~ 264VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         |          |          |          |         |
|                       | FREQUENCY RANGE              | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |          |         |
|                       | EFFICIENCY (Typ.)            | 75%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |          |          |          |         |
|                       | AC CURRENT (Typ.)            | 4A/115VAC    2A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |          |          |          |         |
| PROTECTION            | INRUSH CURRENT (Typ.)        | 40A/115VAC    80A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |          |          |          |         |
|                       | LEAKAGE CURRENT(max.)        | 3mA/240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |          |          |          |         |
|                       | OVER LOAD                    | 105 ~ 150% rated output power<br>Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |         |          |          |          |         |
| PROTECTION            | OVER VOLTAGE                 | +3.3V, +5V: 110% ~ 140% of rated voltage ; +12V: 13.2V ~ 16V<br>Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |          |          |          |         |
|                       | SHORT CIRCUIT                | All output equipped with short circuit<br>Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         |          |          |          |         |
| FUNCTION              | POWER GOOD SIGNAL            | The TTL compatible signal out with 100ms to 500ms delay after power set up                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |          |          |          |         |
|                       | POWER FAIL SIGNAL            | The TTL compatible signal will go down at least 1ms before +5V below 4.75V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |          |          |          |         |
|                       | PS-ON INPUT SIGNAL           | Power off: PS-ON = "Hi" or ">2V" ; Power on: PS-ON = "Low" or "<0.5V"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |          |          |          |         |
| ENVIRONMENT           | WORKING TEMP.                | -10 ~ +60°C (Refer to output load derating curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |          |          |          |         |
|                       | WORKING HUMIDITY             | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |          |          |          |         |
|                       | STORAGE TEMP., HUMIDITY      | -40 ~ +85°C    10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |          |          |          |         |
|                       | TEMP. COEFFICIENT            | ±0.05% / °C (0 ~ 50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |          |          |          |         |
|                       | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |          |          |          |         |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS             | UL60950-1, TUV EN60950-1 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |         |          |          |          |         |
|                       | WITHSTAND VOLTAGE            | I/P-O/P: 1.5KVAC    I/P-FG: 1.5KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |          |          |          |         |
|                       | ISOLATION RESISTANCE         | I/P-O/P, I/P-FG, O/P-FG: 50M Ohms/500VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |          |          |          |         |
|                       | EMI CONDUCTION & RADIATION   | Compliance to EN55022 (CISPR22) Class B, Design refer to FCC part 15 Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |          |          |          |         |
|                       | HARMONIC CURRENT             | Compliance to EN61000-3-2,-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |          |          |          |         |
| OTHERS                | EMS IMMUNITY                 | Compliance to EN61000-4-2,3,4,5,6,8,11, ENV50204, EN55024, EN61000-6-2 (EN50082-2), heavy industry level, criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |          |          |          |         |
|                       | MTBF                         | 94.1K hrs min.    MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |          |          |          |         |
|                       | CONNECTOR                    | ATX main power connector * 1ea; +12V power connector * 1ea<br>Peripheral power connector * 3ea; Floppy drive power connector * 1ea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |          |          |          |         |
|                       | COOLING                      | Forced air ventilation by 4cm DC fan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |          |          |          |         |
|                       | DIMENSION                    | 240*83*40mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |          |          |          |         |
|                       | PACKING                      | 1.44Kg; 10pcs/15.4Kg/0.89CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         |          |          |          |         |
| NOTE                  |                              | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.<br>3. Load regulation is measured from 20% to 100% max. Load.<br>4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details. |         |          |          |          |         |

## Mechanical Specification

Case No. IPC-250 Unit:mm



(WIRE OUTPUT OF PCB, 18AWG)



(A)MOLEX 39-01-2200 or equivalent

(B)MOLEX 8981-04P or equivalent

(C)AMP 171822-4 or equivalent

(D)MOLEX 39-01-2040 or equivalent

MODEL : IPC-250

## OUTPUT FUNCTION TEST

| NO | TEST ITEM                      | SPECICATION                                                                                                                              | TEST CONDITION                                                                    | RESULT                                                                                                                                 | VERDICT |
|----|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | RIPPLE & NOISE                 | V1:50 mVp-p (Max )<br>V2:50 mVp-p (Max )<br>V3:120 mVp-p (Max )<br>V4:100 mVp-p (Max )<br>V5:120 mVp-p (Max )<br>V6:50 mVp-p (Max )      | I/P: 230VAC<br>O/P:FULL LOAD<br>Ta:25℃                                            | V1: 32 mVp-p (Max )<br>V2: 24 mVp-p (Max )<br>V3: 53 mVp-p (Max )<br>V4: 16 mVp-p (Max )<br>V5: 42 mVp-p (Max )<br>V6: 38 mVp-p (Max ) | P       |
| 2  | OUTPUT VOLTAGE<br>ADJUST RANGE | CH1: 3.14V~ 3.5V                                                                                                                         | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:MIN LOAD<br>Ta:25℃                            | 3.05 V~ 3.76 V/ 230 VAC<br>3.05 V~ 3.76 V/ 115 VAC                                                                                     | P       |
| 3  | OUTPUT VOLTAGE<br>TOLERANCE    | V1: 5 %~ -5 % (Max)<br>V2: 5 %~ -5 % (Max)<br>V3: 7 %~ -7 % (Max)<br>V4: 8 %~ -8 % (Max)<br>V5: 10 %~ -10 % (Max)<br>V6: 5 %~ -5 % (Max) | I/P: 115 VAC / 264 VAC<br>O/P:FULL/ 40% LOAD<br>Ta:25℃                            | V1: 1.3 %~ -1.3 %<br>V2: 2.3 %~ -2.3 %<br>V3: 2 %~ -2 %<br>V4: 0.6 %~ -0.6 %<br>V5: 3.3 %~ -3.3 %<br>V6: 2.8 %~ -2.8 %                 | P       |
| 4  | LINE REGULATION                | V1: 1 %~ -1 % (Max)<br>V2: 1 %~ -1 % (Max)<br>V3: 1 %~ -1 % (Max)<br>V4: 2 %~ -2 % (Max)<br>V5: 2 %~ -2 % (Max)<br>V6: 1 %~ -1 % (Max)   | I/P: 115 VAC ~ 264 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                 | V1: 0.2 %~ -0.2 %<br>V2: 0 %~ 0 %<br>V3: 0 %~ 0 %<br>V4: 0.2 %~ -0.2 %<br>V5: 0 %~ 0 %<br>V6: 0.2 %~ -0.2 %                            | P       |
| 5  | LOAD REGULATION                | V1: 5 %~ -5 % (Max)<br>V2: 5 %~ -5 % (Max)<br>V3: 7 %~ -7 % (Max)<br>V4: 8 %~ -8 % (Max)<br>V5: 10 %~ -10 % (Max)<br>V6: 5 %~ -5 % (Max) | I/P: 230 VAC<br>O/P:FULL ~MIN LOAD<br>Ta:25℃                                      | V1: 1.3 %~ -1.3 %<br>V2: 2.3 %~ -2.3 %<br>V3: 1.6 %~ -1.6 %<br>V4: 0.5 %~ -0.5 %<br>V5: 1.4 %~ -1.4 %<br>V6: 2.8 %~ -2.8 %             | P       |
| 6  | CROSS REGULATION               | V1: 5 %~ -5 % (Max)<br>V2: 5 %~ -5 % (Max)<br>V3: 7 %~ -7 % (Max)<br>V4: 8 %~ -8 % (Max)<br>V5: 10 %~ -10 % (Max)<br>V6: 5 %~ -5 % (Max) | I/P: 230 VAC<br>O/P: Testing O/P 60%LOAD<br>Other O/P 40%LOAD<br>Change<br>Ta:25℃ | V1: 0.6 %~ -0.6 %<br>V2: 0.25 %~ -0.25 %<br>V3: 1.7 %~ -1.7 %<br>V4: 0.7 %~ -0.7 %<br>V5: 1.4 %~ -1.4 %<br>V6: 0.7 %~ -0.7 %           | P       |
| 7  | SET UP TIME                    | 230VAC: 800 ms (Max)<br>115 VAC: 2500 ms (Max)                                                                                           | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                           | 230VAC/ 230 ms<br>115VAC/ 230 ms                                                                                                       | P       |
| 8  | RISE TIME                      | 230VAC: 20 ms (Max)<br>115VAC: 20 ms (Max)                                                                                               | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                           | 230VAC/ 13 ms<br>115VAC/ 13 ms                                                                                                         | P       |
| 9  | HOLD UP TIME                   | 230VAC: 16 ms (TYP)<br>115VAC: 16 ms (TYP)                                                                                               | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                           | 230VAC/ 18.4 ms<br>115VAC/ 18.9 ms                                                                                                     | P       |
| 10 | OVER/UNDERSHOOT TEST           | < ±5%                                                                                                                                    | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                           | TEST: <5 %                                                                                                                             | P       |
| 11 | DYNAMIC LOAD                   | V1: 660 mVp-p                                                                                                                            | I/P: 230 VAC<br>O/P:FULL /50% LOAD<br>90%DUTY/1KHZ<br>Ta:25℃                      | 275 mVp-p                                                                                                                              | P       |

## INPUT FUNCTION TEST

| N<br>O | TEST ITEM             | SPECICATION                                        | TEST CONDITION                                                                                                                          | RESULT                                     | VERDICT |
|--------|-----------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------|
| 1      | INPUT VOLTAGE RANGE   | 90VAC~264 VAC)                                     | I/P:TESTING<br>O/P:FULL LOAD<br>Ta:25℃                                                                                                  | 65 V~264V                                  | P       |
|        |                       |                                                    | I/P:<br>LOW-LINE-3V= 87V<br>HIGH-LINE+15%=300 V<br>O/P:FULL/MIN LOAD<br>ON: 30 Sec . OFF: 30 Sec 10MIN<br>( AC POWER ON/OFF NO DAMAGE ) | TEST: OK                                   |         |
| 2      | INPUT FREQUENCY RANGE | 47HZ ~63 HZ<br>NO DAMAGE OSC                       | I/P: 90VAC ~ 264 VAC<br>O/P:FULL~MIN LOAD<br>Ta:25℃                                                                                     | TEST: OK                                   | P       |
| 3      | POWER FACTOR          | 0.95 / 230 VAC(TYP)<br>0.95 / 115 VAC (TYP)        | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                                                                 | PF= 0.958 / 230 VAC<br>PF= 0.99 / 115 VAC  | P       |
| 4      | EFFICIENCY            | 75% (TYP)                                          | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                                                                                 | 77.3 %                                     | P       |
| 5      | INPUT CURRENT         | 230V/ 2 A (TYP)<br>115V/ 4 A (TYP)                 | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                                                                 | I = 1.51 A/ 230 VAC<br>I = 3.03 A/ 115 VAC | P       |
| 6      | INRUSH CURRENT        | 230V/ 80 A (TYP)<br>115V/ 40 A (TYP)<br>COLD START | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃                                                                                 | I = 40 A/ 230 VAC<br>I = 20 A/ 115 VAC     | P       |
| 7      | LEAKAGE CURRENT       | < 3 mA / 240 VAC                                   | I/P: 254 VAC<br>O/P:Min LOAD<br>Ta:25℃                                                                                                  | L-FG: 1.2 mA<br>N-FG: 1.2 mA               | P       |

## PROTECTION FUNCTION TEST

| NO | TEST ITEM               | SPECICATION                                                   | TEST CONDITION                                        | RESULT                                                             | VERDICT |
|----|-------------------------|---------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------|---------|
| 1  | OVER LOAD PROTECTION    | 105 %~ 135 %                                                  | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:TESTING<br>Ta:25℃ | 139 %/ 230 VAC<br>130 %/ 115 VAC<br>Shunt down Re-power ON         | P       |
| 2  | OVER VOLTAGE PROTECTION | +3V,+5V:<br>110%~140% of rated voltage<br><br>+12V: 13.2V~16V | I/P: 230 VAC<br>O/P:MIN LOAD<br>Ta:25℃                | 118 %/ +3V<br>122 %/ +5V<br>15.5V/ +12V<br>Shunt down Re- power ON | P       |
| 3  | SHORT PROTECTION        | SHORT EVERY OUTPUT<br>1 HOUR NO DAMAGE                        | I/P: 264 VAC<br>O/P:FULL LOAD<br>Ta:25℃               | NO DAMAGE<br>Shunt down Re-power ON                                | P       |

## CONTROL FUNCTION TEST

| NO | TEST ITEM          | SPECICATION                                                        | TEST CONDITION                                          | RESULT                                                                 | VERDICT |
|----|--------------------|--------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------|---------|
| 1  | POWER GOOD SIGNAL  | DELAY 100ms ~ 500ms                                                | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃ | 212 ms/ 230VAC<br>214 ms/ 115 VAC                                      | P       |
| 2  | POWER FAIL SIGNAL  | >1ms                                                               | I/P: 230 VAC<br>I/P: 115 VAC<br>O/P:FULL LOAD<br>Ta:25℃ | 5 ms/ 230 VAC<br>4.9 ms/115 VAC                                        | P       |
| 3  | PS-ON INPUT SIGNAL | Power off :PS-ON="Hi" or ">2v"<br>Power on :PS-ON="Low" or "<0.5v" | I/P: 230 VAC<br>O/P:FULL LOAD<br>Ta:25℃                 | Power off : PS-ON="Hi" or 0.7V~5V<br>Power on : PS-ON="Low" or 0V~0.7V | P       |

## ENVIRONMENT TEST

| NO | TEST ITEM                                                         | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TEST CONDITION                                                      | RESULT                        | VERDICT |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
|----|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------|---------|----------|-----|-------------------------------|-------------------------------|---|----|--------|--------|--------|---|----|----------------------|--------|--------|---|-----|--------------------|--------|--------|---|----|--------|--------|--------|---|----|--------------------|--------|--------|---|-----|--------------------|--------|--------|---|---------|---------|--------|--------|---|------|--------------------------|--------|--------|---|-----|---------|--------|--------|----|----|------------------|--------|--------|----|------|---------------------|--------|--------|----|------|----------------------|--------|--------|----|------|----------------------|--------|--------|----|------|---------------------------|--------|--------|----|------|--------|--------|--------|---|
| 1  | TEMPERATURE RISE TEST                                             | <div>MODEL : IPC-250</div> <div>1. ROOM AMBIENT    BURN-IN : 2 HRS</div> <div>                         I/P: 230VAC    O/P: FULL LOAD    Ta= 28.6   °C</div> <div>2. HIGH AMBIENT    BURN-IN : 3 HRS</div> <div>                         I/P: 230VAC    O/P: FULL LOAD    Ta= 40.6   °C</div> <div><table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT<br/>Ta= 28.6   °C</th><th>HIGH AMBIENT<br/>Ta= 40.6   °C</th></tr><tr><td>1</td><td>U1</td><td>ML4800</td><td>59.5°C</td><td>65.8°C</td></tr><tr><td>2</td><td>Q2</td><td>16N50C3 16A/500V INF</td><td>71.9°C</td><td>78.3°C</td></tr><tr><td>3</td><td>BD1</td><td>KBJ608G 6A/800V LT</td><td>85.2°C</td><td>90.7°C</td></tr><tr><td>4</td><td>L1</td><td>TR-538</td><td>77.0°C</td><td>83.3°C</td></tr><tr><td>5</td><td>C5</td><td>150U/400V RUB 85°C</td><td>67.0°C</td><td>72.9°C</td></tr><tr><td>6</td><td>Q21</td><td>K2850 6A/900V FUJI</td><td>71.5°C</td><td>77.2°C</td></tr><tr><td>7</td><td>T1 COIL</td><td>TF-1187</td><td>75.3°C</td><td>80.6°C</td></tr><tr><td>8</td><td>C213</td><td>100U/35V RUB 105°C   YXF</td><td>63.3°C</td><td>69.6°C</td></tr><tr><td>9</td><td>ZD5</td><td>P6KE200</td><td>82.0°C</td><td>87.6°C</td></tr><tr><td>10</td><td>D2</td><td>BYM26E 1A/1KV PH</td><td>85.5°C</td><td>91.3°C</td></tr><tr><td>11</td><td>D110</td><td>S60SC4M 60A/40V SHI</td><td>76.6°C</td><td>81.9°C</td></tr><tr><td>12</td><td>D101</td><td>MBR3060PT 30A/60V GI</td><td>51.4°C</td><td>57.1°C</td></tr><tr><td>13</td><td>D140</td><td>SBL3040PT 30A/40V LT</td><td>76.0°C</td><td>82.1°C</td></tr><tr><td>14</td><td>C113</td><td>3300U/6.3V NCC 105°C   KY</td><td>40.5°C</td><td>46.9°C</td></tr><tr><td>15</td><td>L101</td><td>TR-345</td><td>62.7°C</td><td>68.4°C</td></tr></table></div> |                                                                     |                               | NO      | Position | P/N | ROOM AMBIENT<br>Ta= 28.6   °C | HIGH AMBIENT<br>Ta= 40.6   °C | 1 | U1 | ML4800 | 59.5°C | 65.8°C | 2 | Q2 | 16N50C3 16A/500V INF | 71.9°C | 78.3°C | 3 | BD1 | KBJ608G 6A/800V LT | 85.2°C | 90.7°C | 4 | L1 | TR-538 | 77.0°C | 83.3°C | 5 | C5 | 150U/400V RUB 85°C | 67.0°C | 72.9°C | 6 | Q21 | K2850 6A/900V FUJI | 71.5°C | 77.2°C | 7 | T1 COIL | TF-1187 | 75.3°C | 80.6°C | 8 | C213 | 100U/35V RUB 105°C   YXF | 63.3°C | 69.6°C | 9 | ZD5 | P6KE200 | 82.0°C | 87.6°C | 10 | D2 | BYM26E 1A/1KV PH | 85.5°C | 91.3°C | 11 | D110 | S60SC4M 60A/40V SHI | 76.6°C | 81.9°C | 12 | D101 | MBR3060PT 30A/60V GI | 51.4°C | 57.1°C | 13 | D140 | SBL3040PT 30A/40V LT | 76.0°C | 82.1°C | 14 | C113 | 3300U/6.3V NCC 105°C   KY | 40.5°C | 46.9°C | 15 | L101 | TR-345 | 62.7°C | 68.4°C | P |
| NO | Position                                                          | P/N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ROOM AMBIENT<br>Ta= 28.6   °C                                       | HIGH AMBIENT<br>Ta= 40.6   °C |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 1  | U1                                                                | ML4800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 59.5°C                                                              | 65.8°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 2  | Q2                                                                | 16N50C3 16A/500V INF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 71.9°C                                                              | 78.3°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 3  | BD1                                                               | KBJ608G 6A/800V LT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 85.2°C                                                              | 90.7°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 4  | L1                                                                | TR-538                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 77.0°C                                                              | 83.3°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 5  | C5                                                                | 150U/400V RUB 85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 67.0°C                                                              | 72.9°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 6  | Q21                                                               | K2850 6A/900V FUJI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 71.5°C                                                              | 77.2°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 7  | T1 COIL                                                           | TF-1187                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 75.3°C                                                              | 80.6°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 8  | C213                                                              | 100U/35V RUB 105°C   YXF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 63.3°C                                                              | 69.6°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 9  | ZD5                                                               | P6KE200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 82.0°C                                                              | 87.6°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 10 | D2                                                                | BYM26E 1A/1KV PH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 85.5°C                                                              | 91.3°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 11 | D110                                                              | S60SC4M 60A/40V SHI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 76.6°C                                                              | 81.9°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 12 | D101                                                              | MBR3060PT 30A/60V GI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 51.4°C                                                              | 57.1°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 13 | D140                                                              | SBL3040PT 30A/40V LT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 76.0°C                                                              | 82.1°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 14 | C113                                                              | 3300U/6.3V NCC 105°C   KY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 40.5°C                                                              | 46.9°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 15 | L101                                                              | TR-345                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 62.7°C                                                              | 68.4°C                        |         |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 2  | OVER LOAD BURN-IN TEST                                            | NO DAMAGE<br>1 HOUR ( MIN )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I/P: 230 VAC<br>O/P: 139   % LOAD<br>Ta:25°C                        | TEST : OK                     | P       |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 3  | LOW TEMPERATURE<br>TURN ON TEST                                   | TURN ON AFTER   2   HOUR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P: 230 VAC<br>O/P: 100   % LOAD<br>Ta= -20   °C                   | TEST : OK                     | P       |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 4  | HIGH HUMIDITY<br>HIGH TEMPERATURE<br>HIGH VOLTAGE<br>TURN ON TEST | AFTER 12   HOURS<br>IN CHAMBER ON<br>CONTROL   40   °C<br>NO DAMAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | I/P: 272 VAC<br>O/P:FULL LOAD<br>Ta= 40   °C<br>HUMIDITY=   95 %R.H | TEST : OK                     | P       |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 5  | TEMPERATURE<br>COEFFICIENT                                        | ± 0.05 %(0~50°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I/P: 230 VAC<br>O/P:FULL LOAD                                       | ± 0.02 %(0~50°C)              | P       |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |
| 6  | VIBRATION TEST                                                    | 1 Carton & 1 Set<br>(1) Waveform: Sine Wave<br>(2) Frequency:10~500Hz<br>(3) Sweep Time:10min/sweep cycle<br>(4) Acceleration:2G<br>(5) Test Time:1 hour in each axis (X.Y.Z)<br>(6) Ta:25°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                     | TEST : OK                     | P       |          |     |                               |                               |   |    |        |        |        |   |    |                      |        |        |   |     |                    |        |        |   |    |        |        |        |   |    |                    |        |        |   |     |                    |        |        |   |         |         |        |        |   |      |                          |        |        |   |     |         |        |        |    |    |                  |        |        |    |      |                     |        |        |    |      |                      |        |        |    |      |                      |        |        |    |      |                           |        |        |    |      |        |        |        |   |

## SAFETY TEST

| NO | TEST ITEM            | SPECICATION                                                         | TEST CONDITION                                                   | RESULT                                                           | VERDICT |
|----|----------------------|---------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|---------|
| 1  | WITHSTAND VOLTAGE    | I/P-O/P: 1.5 KVAC/min<br>I/P-FG: 1.5 KVAC/min                       | I/P-O/P: 1.8 KVAC/min<br>I/P-FG: 1.8 KVAC/min<br>Ta:25℃          | I/P-O/P: 6.56 mA<br>I/P-FG: 6.82 mA<br><br>NO DAMAGE             | P       |
| 2  | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ<br>I/P-FG: 500VDC>100MΩ<br>O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC<br>I/P-FG: 500 VDC<br>O/P-FG: 500 VDC<br>Ta:25℃ | I/P-O/P: 2 GΩ<br>I/P-FG: 16 GΩ<br>O/P-FG: 10 GΩ<br><br>NO DAMAGE | P       |
| 3  | GROUNDING CONTINUITY | FG(PE) TO CHASSIS<br>OR TRACE < 100 mΩ                              | 40 A / 2min<br>Ta:25℃                                            | 3 mΩ                                                             | P       |
| 4  | APPROVAL             | TUV: Certificate NO :<br>UL: File NO : E183223                      |                                                                  |                                                                  | P       |

## E.M.C TEST

| NO | TEST ITEM                                   | SPECICATION                                        | TEST CONDITION                                     | RESULT                        | VERDICT |
|----|---------------------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------|---------|
| 1  | HARMONIC                                    | EN61000-3-2<br>CLASS A                             | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25℃       | PASS                          | P       |
| 2  | CONDUCTION                                  | EN55022<br>CLASS B                                 | I/P: 230 VAC (50HZ)<br>O/P:FULL/50% LOAD<br>Ta:25℃ | PASS<br>Test by certified Lab | P       |
| 3  | RADIATION                                   | EN55022<br>CLASS B                                 | I/P: 230 VAC (50HZ)<br>O/P:FULL LOAD<br>Ta:25℃     | PASS<br>Test by certified Lab | P       |
| 4  | E.S.D                                       | EN61000-4-2<br>INDUSTRY<br>AIR:8KV / Contact:4KV   | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25℃       | CRITERIA A                    | P       |
| 5  | E.F.T                                       | EN61000-4-4<br>INDUSTRY<br>INPUT: 2KV              | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25℃       | CRITERIA A                    | P       |
| 6  | SURGE                                       | IEC61000-4-5<br>INDUSTRY<br>L-N :2KV<br>L,N-PE:4KV | I/P: 230 VAC/50HZ<br>O/P:FULL LOAD<br>Ta:25℃       | CRITERIA A                    | P       |
| 7  | Test by certified Lab & Test Report Prepare |                                                    |                                                    |                               |         |

## M.T.B.F &amp; LIFE CYCLE CALCULATION

| NO | TEST ITEM               | SPECICATION                                                                                                                                                            | TEST CONDITION | RESULT | VERDICT |
|----|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------|---------|
| 1  | CAPACITOR<br>LIFE CYCLE | SUPPOSE C 142 IS THE MOST CRITICAL COMPONENT<br>I/P: 230VAC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 316356 HRS<br>I/P: 230VAC O/P:FULL LOAD Ta= 40 °C LIFE TIME= 175462 HRS |                |        | P       |
| 2  | MTBF                    | MIL-HDBK-217F NOTICES2 PARTS COUNT<br>TOTAL FAILURE RATE: 94.1K HRS                                                                                                    |                |        | P       |

## COMPONENT STRESS TEST

| NO | TEST ITEM                                                         | SPECICATION                                                                                                                                                                                  | TEST CONDITION                                                                                                                      | RESULT                                                                                       |                                                                                                                                                      | VERDICT |
|----|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1  | Power Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b>     | Q 21 Rated<br>2SK2082 : 900V 9A<br><br>Q 22 Rated<br>2SK2082 : 900V 9A                                                                                                                       | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                | (1)<br>(2)<br>(3)                                                                            | 764 V<br>780 V<br>380 V                                                                                                                              | P       |
| 2  | Diode Peak <b>Voltage</b>                                         | D101 Rated<br>MBR3060PT : 60V 30A<br><br>D110 Rated<br>S60SC4M : 40V 60A<br><br>D112 Rated<br>31DQ10 : 100V 3A<br><br>D140 Rated<br>S30C4M : 40V 30A<br><br>D160 Rated<br>YG802C04 : 40V 10A | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                | (1)<br>(2)<br>(3)<br><br>(1)<br>(2)<br>(3)<br><br>(1)<br>(2)<br>(3)<br><br>(1)<br>(2)<br>(3) | 33.4 V<br>31.3 V<br>0 V<br><br>27.2 V<br>24.6 V<br>0 V<br><br>61.6 V<br>54.8 V<br>0 V<br><br>32 V<br>31.8 V<br>0 V<br><br>33.6 V<br>33.6 V<br>33.6 V | P       |
| 3  | Input Capacitor <b>Voltage</b>                                    | C 5 Rated<br>: 150u / 400V/ 85℃                                                                                                                                                              | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load Change<br>Ta:25℃ | (1)<br>(2)<br>(3)                                                                            | 414 V<br>388 V<br>412 V                                                                                                                              | P       |
| 4  | Control IC <b>Voltage Test</b>                                    | U1 Rated<br>ML4800CP : 18V                                                                                                                                                                   | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on /Off<br>(2) Min load Turn on /Off<br>(3)Full Load /Min load Change<br>Ta:25℃ | (1)<br>(2)<br>(3)                                                                            | 15.3 V<br>13.7 V<br>13.7 V                                                                                                                           | P       |
| 5  | PFC Power Transistor<br>( D to S) or (C to E) <b>Peak Voltage</b> | Q 1 Rated<br>16N50C3 : 500V 30A                                                                                                                                                              | I/P:High-Line +3V = 267 V<br>O/P: (1)Full Load Turn on<br>(2) Full Load<br>(3)Output Short<br>Ta:25℃                                | (1)<br>(2)<br>(3)                                                                            | 390 V<br>392 V<br>390 V                                                                                                                              | P       |

| DATE      | SAMPLE                     | TEST RESULT | TESTER        | APPROVAL |
|-----------|----------------------------|-------------|---------------|----------|
| 2005/1/19 | RD SAMPLE                  | PASS        | VINCENT TSENG | MAX LIN  |
| 2005/7/15 | PRODUCT SAMPLE<br>W0504B42 | PASS        | VINCENT TSENG | MAX LIN  |

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