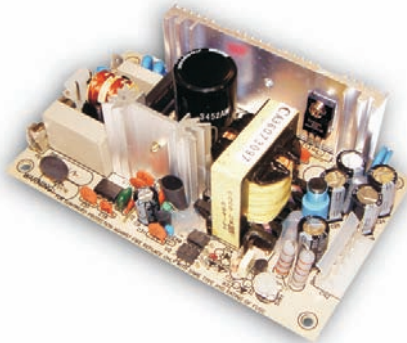


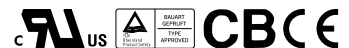
## 65W Triple Output Switching Power Supply

## PT-65 series



### ■ Features :

- Universal AC input/Full range
- Low leakage current<0.5mA
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 65KHz
- 2 years warranty

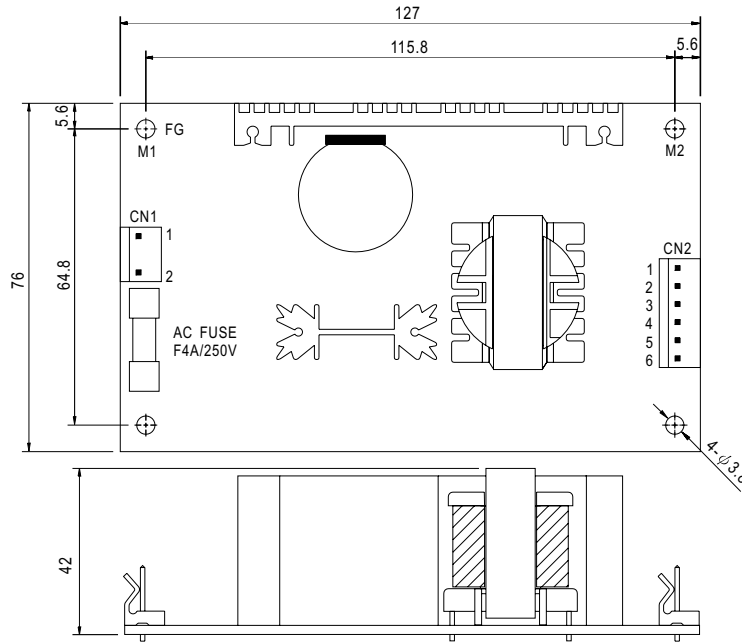


### SPECIFICATION

| MODEL                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PT-65A                                                                                      |            |              | PT-65B     |            |          | PT-65C   |            |          | PT-65D                          |          |            |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------|--------------|------------|------------|----------|----------|------------|----------|---------------------------------|----------|------------|
| OUTPUT                | OUTPUT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CH1                                                                                         | CH2        | CH3          | CH1        | CH2        | CH3      | CH1      | CH2        | CH3      | CH1                             | CH2      | CH3        |
|                       | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5V                                                                                          | 12V        | -5V          | 5V         | 12V        | -12V     | 5V       | 15V        | -15V     | 5V                              | 12V      | 24V        |
|                       | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5.5A                                                                                        | 2.5A       | 0.5A         | 5.5A       | 2.5A       | 0.5A     | 5.5A     | 2A         | 0.5A     | 4A                              | 2A       | 1A         |
|                       | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.4 ~ 7A                                                                                    | 0.2 ~ 3.2A | 0 ~ 0.7A     | 0.4 ~ 7A   | 0.2 ~ 3.2A | 0 ~ 0.7A | 0.4 ~ 7A | 0.2 ~ 2.6A | 0 ~ 0.7A | 0.5 ~ 5A                        | 0.2 ~ 4A | 0.2 ~ 1.3A |
|                       | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 60W                                                                                         |            |              | 63.5W      |            |          | 65W      |            |          | 68W                             |          |            |
|                       | OUTPUT POWER (max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Rated output power for convection; 72W with 18CFM min. Forced air                           |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 50mVp-p                                                                                     | 120mVp-p   | 50mVp-p      | 50mVp-p    | 120mVp-p   | 100mVp-p | 50mVp-p  | 120mVp-p   | 100mVp-p | 50mVp-p                         | 100mVp-p | 200mVp-p   |
|                       | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CH1:4.75 ~ 5.5V                                                                             |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±4.0%                                                                                       | ±7.0%      | ±5.0%        | ±4.0%      | ±7.0%      | ±5.0%    | ±4.0%    | ±7.0%      | ±5.0%    | ±4.0%                           | ±6.0%    | ±6.0%      |
|                       | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±1.0%                                                                                       | ±2.0%      | ±1.0%        | ±1.0%      | ±2.0%      | ±1.0%    | ±1.0%    | ±2.0%      | ±1.0%    | ±1.0%                           | ±2.0%    | ±3.0%      |
|                       | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±3.0%                                                                                       | ±4.0%      | ±1.0%        | ±3.0%      | ±4.0%      | ±1.0%    | ±3.0%    | ±4.0%      | ±1.0%    | ±2.0%                           | ±5.0%    | ±5.0%      |
| SETUP, RISE TIME      | 800ms, 20ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                             |            |              |            |            |          |          |            |          |                                 |          |            |
| HOLD UP TIME (Typ.)   | 60ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                             |            |              |            |            |          |          |            |          |                                 |          |            |
| INPUT                 | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 90 ~ 264VAC                                                                                 |            | 127 ~ 370VDC |            |            |          |          |            |          |                                 |          |            |
|                       | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 47 ~ 440Hz                                                                                  |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | EFFICIENCY(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 76%                                                                                         |            |              | 77%        |            |          | 77%      |            |          | 79%                             |          |            |
|                       | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.5A/115VAC                                                                                 |            | 0.9A/230VAC  |            |            |          |          |            |          |                                 |          |            |
|                       | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | COLD START 20A/115VAC                                                                       |            |              | 40A/230VAC |            |          |          |            |          |                                 |          |            |
|                       | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <0.75mA                                                                                     |            |              |            |            |          |          |            |          |                                 |          |            |
| PROTECTION            | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 73 ~ 95W rated output power                                                                 |            |              |            |            |          |          |            |          | 74.8 ~ 98.6W rated output power |          |            |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Protection type : Hiccup mode, recovers automatically after fault condition is removed.     |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5.75 ~ 6.75VDC on CH1                                                                       |            |              |            |            |          |          |            |          |                                 |          |            |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Protection type : Hiccup mode, recovers automatically after fault condition is removed.     |            |              |            |            |          |          |            |          |                                 |          |            |
| ENVIRONMENT           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -10 ~ +60°C (Refer to output load derating curve)                                           |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 ~ 90% RH non-condensing                                                                  |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -20 ~ +85°C, 10 ~ 95% RH                                                                    |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±0.04%/°C (0 ~ 50°C) on +5V output                                                          |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes                      |            |              |            |            |          |          |            |          |                                 |          |            |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | UL1950, TUV EN60950 Approved                                                                |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC 1min.                                           |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC                                                    |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | EMI CONDUCTION & RADIATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN55022 (CISPR22) Class B                                                     |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | HARMONIC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance to EN61000-3-2,-3                                                                |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | EMS IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A |            |              |            |            |          |          |            |          |                                 |          |            |
| OTHERS                | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 277.2K hrs min. MIL-HDBK-217F (25°C)                                                        |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 127*76*42mm (L*W*H)                                                                         |            |              |            |            |          |          |            |          |                                 |          |            |
|                       | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.25Kg; 54pcs/15.9Kg/1.35CUFT                                                               |            |              |            |            |          |          |            |          |                                 |          |            |
| NOTE                  | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>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.</li> <li>5. Mounting holes M1 and M2 should be grounded for EMI purposes.</li> </ol> |                                                                                             |            |              |            |            |          |          |            |          |                                 |          |            |

**Mechanical Specification**

Unit:mm



AC Input Connector (CN1) : Molex 5277-02 or equivalent

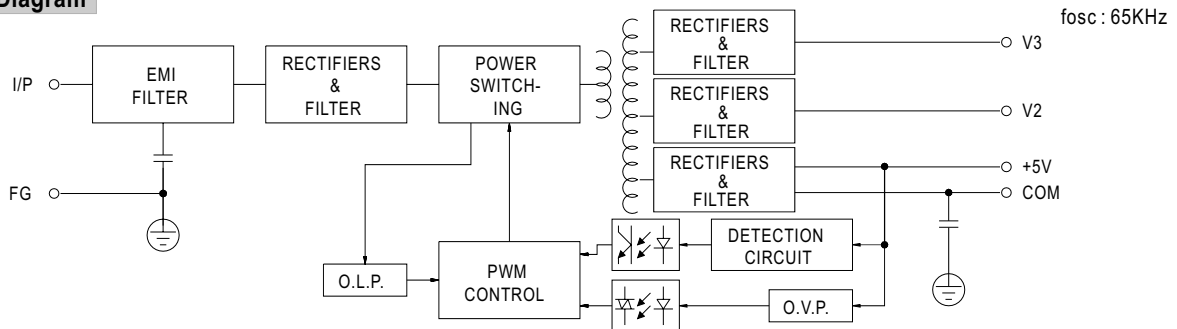
| Pin No. | Assignment | Mating Housing           | Terminal                 |
|---------|------------|--------------------------|--------------------------|
| 1       | AC/N       | Molex 5195 or equivalent | Molex 5194 or equivalent |
| 2       | AC/L       |                          |                          |

DC Output Connector (CN2) : Molex 5273-06 or equivalent

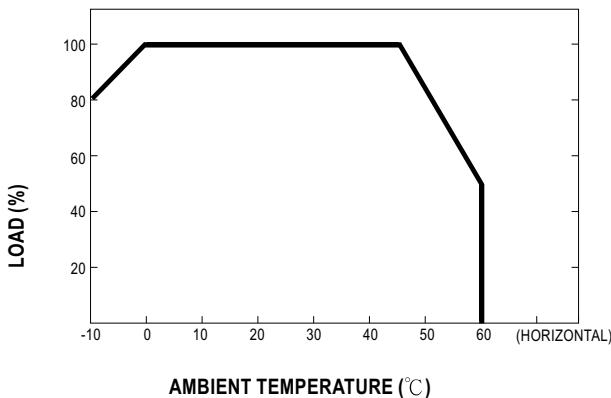
| Pin No. | Assignment | Mating Housing           | Terminal                 |
|---------|------------|--------------------------|--------------------------|
| 1       | V2         | Molex 5195 or equivalent | Molex 5194 or equivalent |
| 2,3     | +5V        |                          |                          |
| 4,5     | COM        |                          |                          |
| 6       | V3         |                          |                          |

※PIN2:+5V PIN3,4,5:COM only for PT-65D

**Block Diagram**



**Derating Curve**



**Static Characteristics (B)**

