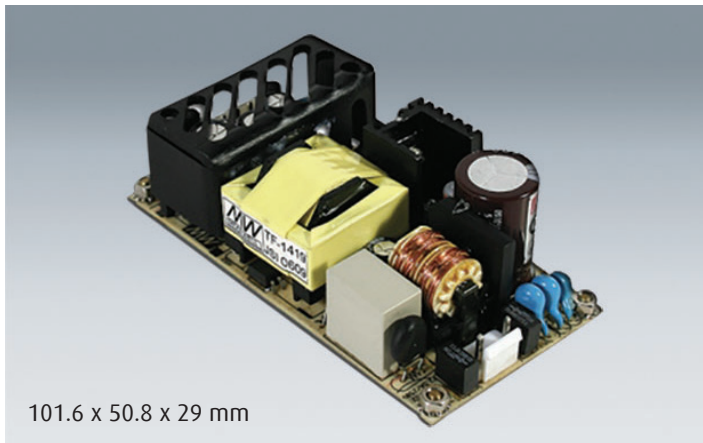


RPT-60 Series

60W Reliable Triple Output Medical Grade Power Supply



101.6 x 50.8 x 29 mm

Features

- 4" X 2" compact size
- Medical Safety approved (2x MOPP)
According to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Suitable for BF application with appropriate system consideration
- Cooling by free air convection
- EMI Class B for Class I configuration
- Extremely low leakage current
- Protections: Short circuit / Overload / Over voltage
- 3 years warranty



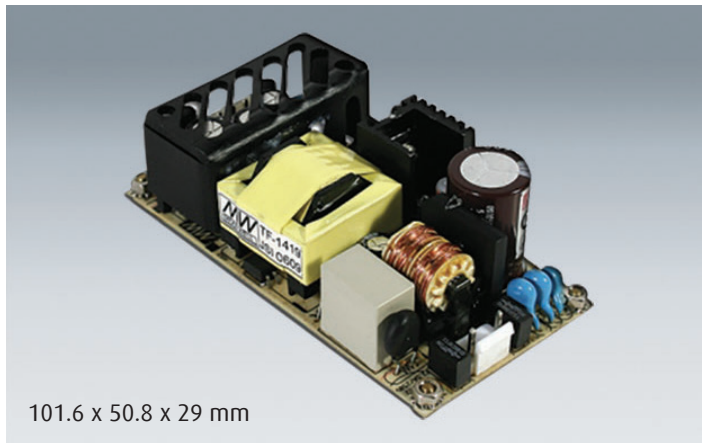
Specification

| | | | | | | | | | | |
|--------------|-----------------------------|--|----------|-------------------------------|----------------|----------|-----------|----------------|-----------|-----------|
| INPUT | Voltage | 90 ~ 264VAC | | 127VDC ~ 370VDC | | | | | | |
| | Frequency | 47 ~ 63 Hz | | | | | | | | |
| | AC Current | 1.1A/115VAC 0.7A/230VAC | | | | | | | | |
| | Inrush Current (Typ.) | COLD START 60A/230VAC | | 30A/115VAC | | | | | | |
| | Leakage Current | Earth leakage current <150 µA/264VAC, Touch current <100 µA/264VAC | | | | | | | | |
| OUTPUT | MODEL No. | RPT-60A | | | RPT-60B | | | RPT-60C | | |
| | Output Number | CH1 | CH2 | CH3 | CH1 | CH2 | CH3 | CH1 | CH2 | CH3 |
| | Voltage | 5V | 12V | -5V | 5V | 12V | -12V | 5V | 15V | -15V |
| | Rated Current | 4A | 2A | 0.5A | 4A | 2A | 0.5A | 4A | 1.5A | 0.5A |
| | Current Range | 0.5~4.4A | 0.1~2.2A | 0.1~0.55A | 0.5~4.4A | 0.1~2.2A | 0.1~0.55A | 0.5~4.4A | 0.1~1.65A | 0.1~0.55A |
| | Rated Power | 46.5W | 46.5W | 46.5W | 50W | 50W | 50W | 50W | 50W | 50W |
| | Peak Load (10 sec.) | 51.15W | 51.15W | 51.15W | 55W | 55W | 55W | 55W | 55W | 55W |
| | R&N | 80mVp-p | 80mVp-p | 80mVp-p | 80mVp-p | 80mVp-p | 100mVp-p | 80mVp-p | 100mVp-p | 150mVp-p |
| | Efficiency | 77% | 77% | 77% | 78% | 78% | 78% | 79% | 79% | 79% |
| | Voltage Tolerance | +3, -2% | ±6.0% | ±9, -8% | +3, -2% | ±6.0% | +10, -6% | +3, -2% | ±6.0% | ±8.0% |
| | Line Regulation | ±0.5% | ±1.0% | ±1.0% | ±0.5% | ±1.0% | ±2.0% | ±0.5% | ±2.0% | ±2.0% |
| | Load Regulation | ±1.5% | ±2.0% | +5, -7% | ±1.5% | ±2.0% | ±5.0% | ±1.5% | ±3.0% | ±4.0% |
| | Setup Rise Time | 300ms, 15ms/230VAC | | 300, 15ms/115VAC at full load | | | | | | |
| | Hold Up Time | 70ms/230VAC | | 15ms/115VAC at full load | | | | | | |
| PROTECTION | Over Load | 115 ~ 150% rated output power Protection Type: Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | |
| | Over Voltage | CH1: 5.75~6.75V Protection type: Shut down o/p voltage, re-power on to recover | | | | | | | | |
| | Working Temperature | -20 ~ +65 °C (Refer to "Derating Curve" section) | | | | | | | | |
| ENVIRONMENT | Working Humidity | 20 ~ 90% RH non-condensing | | | | | | | | |
| | Storage Temperature | -40 ~ +85 °C, 10 ~ 95% RH non-condensing | | | | | | | | |
| | Temp Coefficient | ±0.03%/°C (0 ~ 45°C) | | | | | | | | |
| | Vibration | 10 ~ 500Hz, 2G 10 min./1cycle, period for 60 min. each along X, Y, Z axes | | | | | | | | |
| | Operating Altitude | 3000 Metres | | | | | | | | |
| SAFETY & EMC | Safety Standards | UL60950-1, TUV EN60950-1, IEC60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1, CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved, TUV EN60601-1 approved | | | | | | | | |
| | Isolation Level | Primary-Secondary: 2xMOPP, Primary-Earth: 1xMOPP, Secondary-Earth: 1xMOPP | | | | | | | | |
| | Withstand Voltage | I/P-O/P: 4KVAC I/P-FG: 2KVAC O/P-FG: 1.5KVAC | | | | | | | | |
| | Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | | |
| | EMC Emission | Compliance to EN55011 (CISPR11) Class B, EN61000-3-2 Class A, EN61000-3-3 | | | | | | | | |
| | EMC Immunity | Compliance to EN60601-1-2, EN61000-4-2, 3, 4, 5, 6, 8, 11, Level 4, 15KV air: Level 4, 8KV contact; Level 4, 4KV/Line-FG; 2KV/Line-Line | | | | | | | | |
| OTHERS | M.T.B.F. | 677.8K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | |
| | Packing | 0.15Kg; 96pcs/15.4Kg/0.89CUFT | | | | | | | | |

1. All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25°C of ambient temperature.
2. 33% duty cycle maximum within every 30 seconds. Average output power should not exceed the output power.
3. Ripple and Noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with 0.1µf & 47µf parallel capacitor.
4. Tolerance: includes set up tolerance, line regulation and load regulation.
5. Touch Current was measured from primary input to DC output.
6. The ambient temperature of 5°C/1000m is needed for operating altitude greater than 3000m (6500ft).
7. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to the increase of the set up time.
8. Heatsink HS1, HS2 & HS3 can not be shorted.
9. The power supply is considered as a component that will be operated in combination with final equipment. All the EMC test have been executed by mounting the unit on a 360mm*360mm metal plate with 1mm thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to 'EMI testing of component power supplies' 7. This series meets the typical life expectancy of >50,000 hours of operation when Tcase particularly Ⓞ point (or TMP, per DLC), is about 80°C or less.

RPT-60 Series

60W Reliable Triple Output Medical Grade Power Supply



101.6 x 50.8 x 29 mm

Features

- 4" X 2" compact size
- Medical Safety approved (2x MOPP)
According to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- Suitable for BF application with appropriate system consideration
- Cooling by free air convection
- EMI Class B for Class I configuration
- Extremely low leakage current
- Protections: Short circuit / Overload / Over voltage
- 3 years warranty



Specification

| | | | | | | | |
|--------------------|--|--|--|--|------------|------------|----------------|
| INPUT | Voltage | 90 ~ 264VAC | | 127VDC ~ 370VDC | | | |
| | Frequency | 47 ~ 63 Hz | | | | | |
| | Power Factor | PF \geq 0.93/230VAC, PF \geq 0.98/115VAC at full load | | | | | |
| | AC Current | 1.1A/115VAC | | 0.7A/230VAC | | | |
| | Inrush Current (Typ.) | Cold start 60A/230VAC | | 30A/115VAC | | | |
| Leakage Current | Earth leakage current <150 μ A/264VAC, Touch current <100 μ A/264VAC | | | | | | |
| OUTPUT | MODEL No. | RPT-60D | | | RPT-6003 | | |
| | Output Number | CH1 | CH2 | CH3 | CH1 | CH2 | CH3 |
| | Voltage | 5V | 24V | 12V | 3.3V | 5V | 12V |
| | Rated Current | 3.5A | 1A | 0.5A | 5A | 3A | 0.7A |
| | Current Range | 0.5~3.85A | 0.1~1.1A | 0.1~0.55A | 0.5~5.5A | 0.3~3.3A | 0.1~0.77A |
| | Rated Power | 47.5W | 47.5W | 47.5W | 39.9W | 39.9W | 39.9W |
| | Peak Load (10 sec.) | 52.25W | 52.25W | 52.25W | 43.89W | 43.89W | 43.89W |
| | R&N | 80mVp-p | 150mVp-p | 80mVp-p | 80mVp-p | 80mVp-p | 80mVp-p |
| | Efficiency | 79% | 79% | 79% | 75% | 75% | 75% |
| | Voltage Tolerance | +3, -2% | \pm 6.0% | \pm 8.0% | +3, -2% | \pm 8.0% | +10,-6% |
| | Line Regulation | \pm 0.5% | \pm 2.0% | \pm 2.0% | \pm 0.5% | \pm 1.0% | \pm 2.0% |
| | Load Regulation | \pm 1.5% | \pm 3.0% | \pm 4.0% | \pm 1.5% | \pm 2.0% | \pm 5.5, -5% |
| | Setup Rise Time | 300ms, 15ms/230VAC 300, 15ms/115VAC at full load | | | | | |
| | Hold Up Time | 70ms/230VAC 15ms/115VAC at full load | | | | | |
| | PROTECTION | Over Load | 115 ~ 150% rated output power Protection Type: Hiccup mode, recovers automatically after fault condition is removed | | | | |
| Over Voltage | | CH1: 5.75~6.75V | | CH1: 3.8~4.45V Protection type: Shut down o/p voltage, re-power on to recover | | | |
| ENVIRONMENT | Working Temperature | -20 ~ +65 $^{\circ}$ C (Refer to "Derating Curve" section) | | | | | |
| | Working Humidity | 20 ~ 90% RH non-condensing | | | | | |
| | Storage Temperature | -40 ~ +85 $^{\circ}$ C, 10 ~ 95% RH non-condensing | | | | | |
| | Temp Coefficient | \pm 0.03%/ $^{\circ}$ C (0 ~ 45 $^{\circ}$ C) | | | | | |
| | Vibration | 10 ~ 500Hz, 2G 10 min./1cycle, period for 60 min. each along X, Y, Z axes | | | | | |
| Operating Altitude | 3000 Metres | | | | | | |
| SAFETY & EMC | Safety Standards | UL60950-1, TUV EN60950-1, IEC60601-1, EAC TP TC 004, UL ANSI/AAMI ES60601-1, CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved, TUV EN60601-1 approved | | | | | |
| | Isolation Level | Primary-Secondary: 2xMOPP, Primary-Earth: 1xMOPP, Secondary-Earth: 1xMOPP | | | | | |
| | Withstand Voltage | I/P-O/P: 4KVAC I/P-FG: 2KVAC O/P-FG: 1.5KVAC | | | | | |
| | Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25 $^{\circ}$ C / 70% RH | | | | | |
| | EMC Emission | Compliance to EN55011 (CISPR11) Class B, EN61000-3-2 Class A, EN61000-3-3 | | | | | |
| EMC Immunity | Compliance to EN60601-1-2, EN61000-4-2, 3, 4, 5, 6, 8, 11, Level 4, 15KV air: Level 4, 8KV contact; Line to Earth 4KV, Line to Line 2KV) | | | | | | |
| OTHERS | M.T.B.F. | 677.8K hrs min. MIL-HDBK-217F (25 $^{\circ}$ C) | | | | | |
| | Packing | 0.15Kg/96pcs/15.4Kg/0.89CUFT | | | | | |

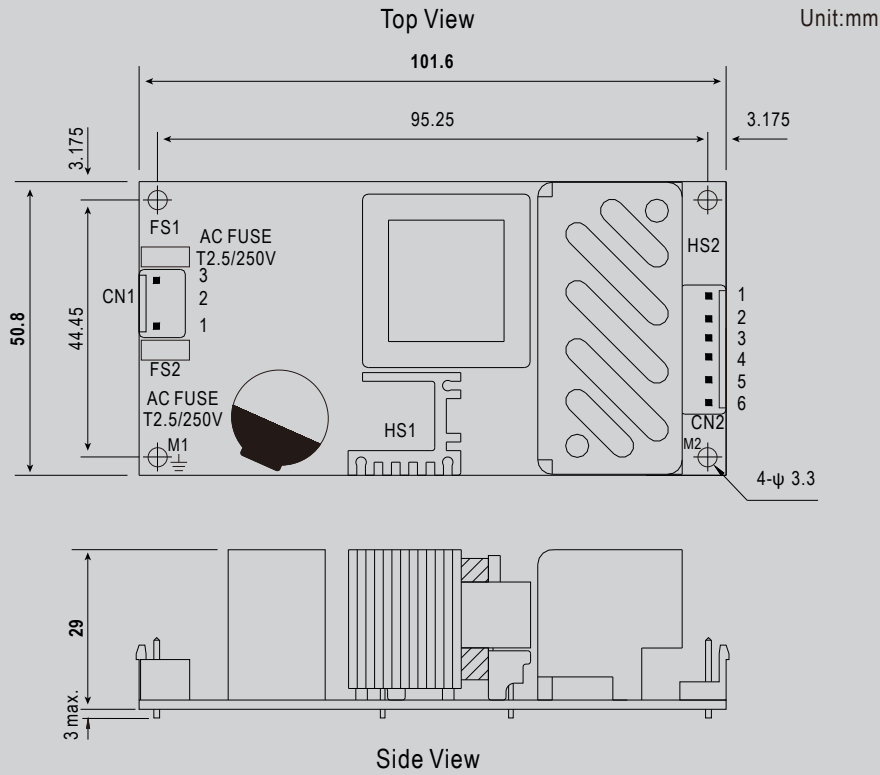
1. All parameters NOT specially mentioned are measured at 347VAC input, rated load and 25 $^{\circ}$ C of ambient temperature.
2. 33% duty cycle maximum within every 30 seconds. Average output power should not exceed the output power.
3. Ripple and Noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with 0.1 μ f & 47 μ f parallel capacitor.
4. Tolerance: includes set up tolerance, line regulation and load regulation.
5. Touch Current was measured from primary input to DC output.
6. The ambient temperature of 5 $^{\circ}$ C/1000m is needed for operating altitude greater than 3000m (6500ft).
7. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to the increase of the set up time.
8. Heatsink HS1, HS2 & HS3 can not be shorted.
9. The power supply is considered as a component that will be operated in combination with final equipment. All the EMC test have been executed by mounting the unit on a 360mm*360mm metal plate with 1mm thickness.
10. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to 'EMI testing of component power supplies'. This series meets the typical life expectancy of >50,000 hours of operation when Tcase particularly @ point (or TMP, per DLC), is about 80 $^{\circ}$ C or less.

RPT-60 Series

60W Reliable Triple Output Medical Grade Power Supply



Mechanical Diagram



AC Input Connector (CN1) : JST B3P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1 | AC/N | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2 | No Pin | | |
| 3 | AC/L | | |

DC Output Connector (CN2) : JST B6P-VH or equivalent

| Pin No. | Assignment | Mating Housing | Terminal |
|---------|------------|--------------------------|-----------------------------------|
| 1,2 | V1 | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 3,4 | COM | | |
| 5 | V2 | | |
| 6 | V3 | | |

⊕ : Grounding Required



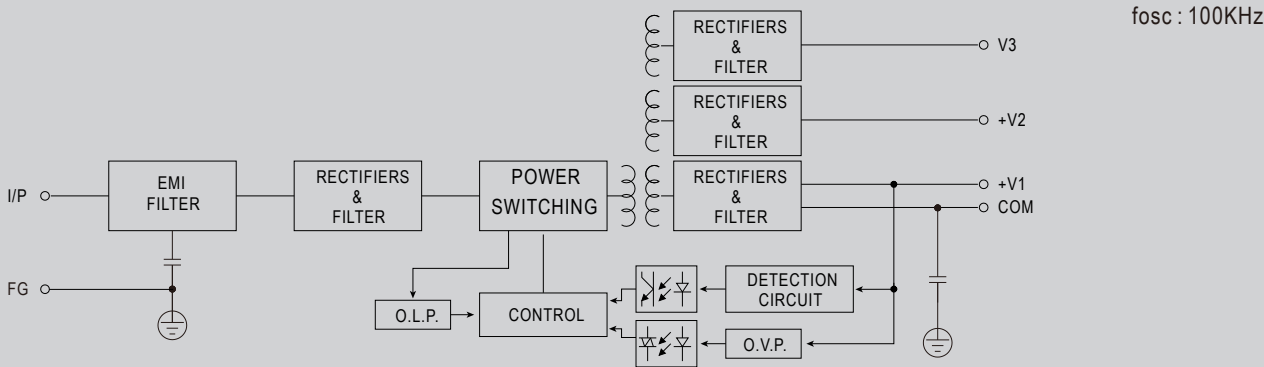
- 1.HS1,HS2 cannot be shorted.
- 2.M1 is safety ground. For better EMC performance,
Please secure an electrical connection between
M1,M2 and chassis grounding.

RPT-60 Series

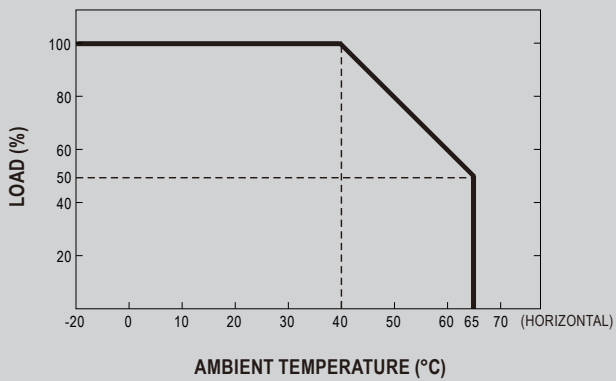
60W Reliable Triple Output Medical Grade Power Supply



Block Diagram



Derating Curve



Output Derating vs Input Voltage

