RPT-75 series

72W Reliable Triple Output Medical Grade

User's Manual





ANSI/AAMI ES60601-1 BS EN/EN60601-1 IEC60601-1 TPTC004

Medical 2xMOPP BF rated

Features

- 5"×3" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/BS EN/EN60601-1
- Suitable for BF application with appropriate system consideration
- 72W convection, 100W force air
- EMI class B for class Ⅰ configuration
- Extremely low leakage current
- Protections: Short circuit / Overload / Over voltage
- Lifetime > 140K hours
- 3 years warranty

Applications

- Oral irrigator
- Hemodialysis machine
- Medical computer monitors
- Sleep apnea devices

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

RPT-75 is a 72W highly reliable PCB type medical power supply with a high power density on the 5" by 3" footprint. It accepts 90~264VAC input and offers triple output voltages .
RPT-75 is able to be used for Class Ⅰ system design. The extremely low leakage current is less than 150μA. In addition, it conforms to international medical regulations (2*MOPP) and EMC BS EN/EN55011.

Model Encoding

RPT - 75 A

- A: Output voltage
- 75: Rated wattage
- RPT: Series name

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SPECIFICATION

MODEL		RPT-75A			RPT-75B			RPT-75C		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	12V	-5V	5V	12V	-12V	5V	15V	-15V
	RATED CURRENT	6A	3A	0.5A	6A	3A	0.5A	6A	2.3A	0.5A
	CURRENT RANGE	0.6 ~ 8A	0.2 ~ 4A	0.1 ~ 1A	0.6 ~ 8A	0.2 ~ 4A	0.1 ~ 1A	0.6 ~ 8A	0.1 ~ 3A	0.1 ~ 1A
	RATED POWER	68.5W			72W			72W		
	PEAK LOAD (23.5CFM)	93W			100W			100W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	80mVp-p	80mVp-p	120mVp-p	80mVp-p	80mVp-p	120mVp-p	80mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V								
	VOLTAGE TOLERANCE Note.3	±2.0%	±6.0%	±5.0%	±2.0%	±6.0%	±5.0%	±2.0%	±8.0%	±5.0%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%	±0.5%	±1.0%	±1.0%
	LOAD REGULATION	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%	±1.5%	±3.0%	±1.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load								
	HOLD UP TIME (Typ.)	90ms/230VAC 20ms/115VAC at full load								
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC								
	FREQUENCY RANGE	47 ~ 63Hz								
	EFFICIENCY(Typ.)	76%			77%			77%		
	AC CURRENT (Typ.)	1.5A/115VAC 1A/230VAC								
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC 50A/230VAC								
	LEAKAGE CURRENT Note.4	Earth leakage current < 150 μA/264VAC , Touch current < 100 μA/264VAC								
PROTECTION	OVERLOAD	140 ~ 180% rated output power								
		Protection type : Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	Ch1: 5.7 ~ 6.8V								
		Protection type : Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 90% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)								
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes								
	OPERATING ALTITUDE Note.5	3000 meters								
SAFETY & EMC (Note 8)	SAFETY STANDARDS	IEC60601-1, UL ANSI/AAMI ES60601-1, CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved, EAC TP TC 004,TUV BS EN/EN60601-1 approved								
	ISOLATION LEVEL	Primary-Secondary:2xMOPP, Primary-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℃/ 70% RH								
	EMC EMISSION	**Parameter**			**Standard**			**Test Level / Note**		
		Conducted emission			BS EN/EN55011 (CISPR11)			Class B		
		Radiated emission			BS EN/EN55011 (CISPR11)			Class B		
		Harmonic current			BS EN/EN61000-3-2			Class A		
		Voltage flicker			BS EN/EN61000-3-3			-----		
	EMC IMMUNITY	BS EN/EN55035,BS EN/EN60601-1-2								
		Parameter			**Standard**			**Test Level / Note**		
		ESD			BS EN/EN61000-4-2			Level 4, 15KV air ; Level 4, 8KV contact		
		RF field susceptibility			BS EN/EN61000-4-3			Level 3, 10V/m(80MHz~2.7GHz) Table 9, 9~28V/m(385MHz~5.78GHz)		
		EFT bursts			BS EN/EN61000-4-4			Level 3, 2KV		
		Surge susceptibility			BS EN/EN61000-4-5			Level 4, 4KV/Line-FG ; 2KV/Line-Line		
		Conducted susceptibility			BS EN/EN61000-4-6			Level 3, 10V		
		Magnetic field immunity			BS EN/EN61000-4-8			Level 4, 30A/m		
		Voltage dip, interruption			BS EN/EN61000-4-11			100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods		
OTHERS	MTBF	2305.8K hrs min. Telcordia SR-332 (Bellcore) ; 521.3K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION (L*W*H)	127*76.2*31mm or 5" * 3" *1.22" inch								
	PACKING	0.25Kg; 63pcs/17.3Kg/1.28CUFT								

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Touch current was measured from primary input to DC output.
5. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. Heat Sink HS1,HS2,HS3 can not be shorted.
8. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of 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." (as available on http://www.meanwell.com)

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SPECIFICATION

MODEL		RPT-75D			RPT-7503		
OUTPUT	OUTPUT NUMBER	CH1	CH2	CH3	CH1	CH2	CH3
	DC VOLTAGE	5V	24V	12V	3.3V	5V	12V
	RATED CURRENT	5A	1.5A	1A	6A	6A	1A
	CURRENT RANGE	0.6 ~ 7A	0.1 ~ 2A	0.1 ~ 1A	0.7 ~ 7A	0 ~ 8A	0 ~ 1.5A
	RATED POWER	73W			61.8W		
	PEAK LOAD (23.5CFM)	95W			81.1W		
	RIPPLE & NOISE (max.) Note.2	80mVp-p	200mVp-p	120mVp-p	80mVp-p	120mVp-p	120mVp-p
	VOLTAGE ADJ. RANGE	CH1:4.75 ~ 5.5V			------		
	VOLTAGE TOLERANCE Note.3	±2.0%	±8.0%	±8.0%	±4.0%	±6.0%	+10,-6%
	LINE REGULATION	±0.5%	±1.0%	±1.0%	±1.0%	±1.0%	±1.5%
	LOAD REGULATION	±1.5%	±3.0%	±3.0%	+3,-4%	+5,-4%	±6.0%
	SETUP, RISE TIME	500ms, 30ms/230VAC 500ms, 30ms/115VAC at full load					
	HOLD UP TIME (Typ.)	90ms/230VAC 20ms/115VAC at full load					
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	EFFICIENCY(Typ.)	79%			74%		
	AC CURRENT (Typ.)	1.5A/115VAC 1A/230VAC					
	INRUSH CURRENT (Typ.)	COLD START 25A/115VAC 50A/230VAC					
	LEAKAGE CURRENT Note.4	Earth leakage current < 150μA/264VAC , Touch current < 100μA/264VAC					
PROTECTION	OVERLOAD	140 ~ 180% rated output power					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	Ch1: 5.7 ~ 6.8V			Ch1: 3.8 ~ 4.5V		
		Protection type : Shut down o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
	OPERATING ALTITUDE Note.5	3000 meters					
SAFETY & EMC (Note 8)	SAFETY STANDARDS	IEC60601-1, UL ANSI/AAMI ES60601-1, CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved, EAC TP TC 004,TUV BS EN/EN60601-1 approved					
	ISOLATION LEVEL	Primary-Secondary:2xMOPP, Primary-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℃/ 70% RH					
	EMC EMISSION	**Parameter**		**Standard**		**Test Level / Note**	
		Conducted emission		BS EN/EN55011 (CISPR11)		Class B	
		Radiated emission		BS EN/EN55011 (CISPR11)		Class B	
		Harmonic current		BS EN/EN61000-3-2		Class A	
		Voltage flicker		BS EN/EN61000-3-3		-----	
	EMC IMMUNITY	BS EN/EN55035,BS EN/EN60601-1-2					
		Parameter		**Standard**		**Test Level / Note**	
		ESD		BS EN/EN61000-4-2		Level 4, 15KV air ; Level 4, 8KV contact	
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		Voltage dip, interruption		BS EN/EN61000-4-11		100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods	
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	DIMENSION (L*W*H)	127*76.2*31mm or 5" * 3" *1.22" inch					
	PACKING	0.25Kg; 63pcs/17.3Kg/1.28CUFT					

NOTE

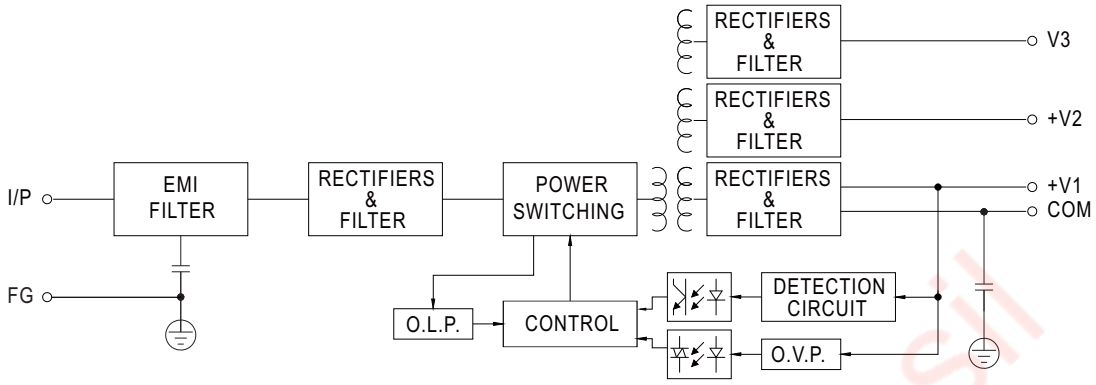
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Touch current was measured from primary input to DC output.
5. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
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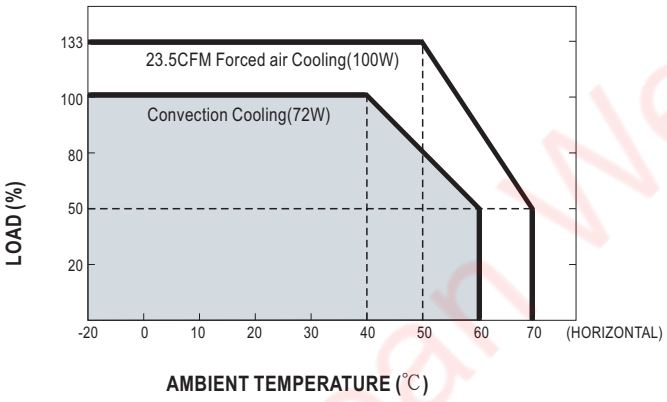
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■ Block Diagram

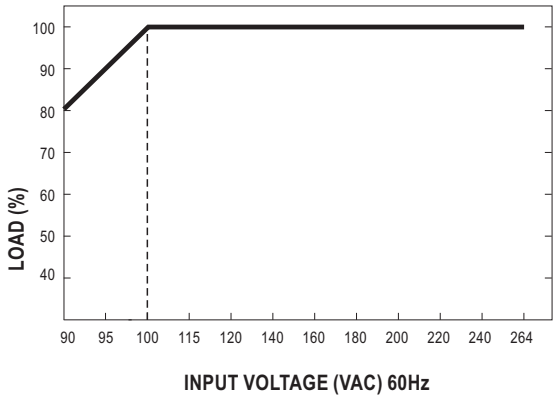
fosc : 65KHz



■ Derating Curve



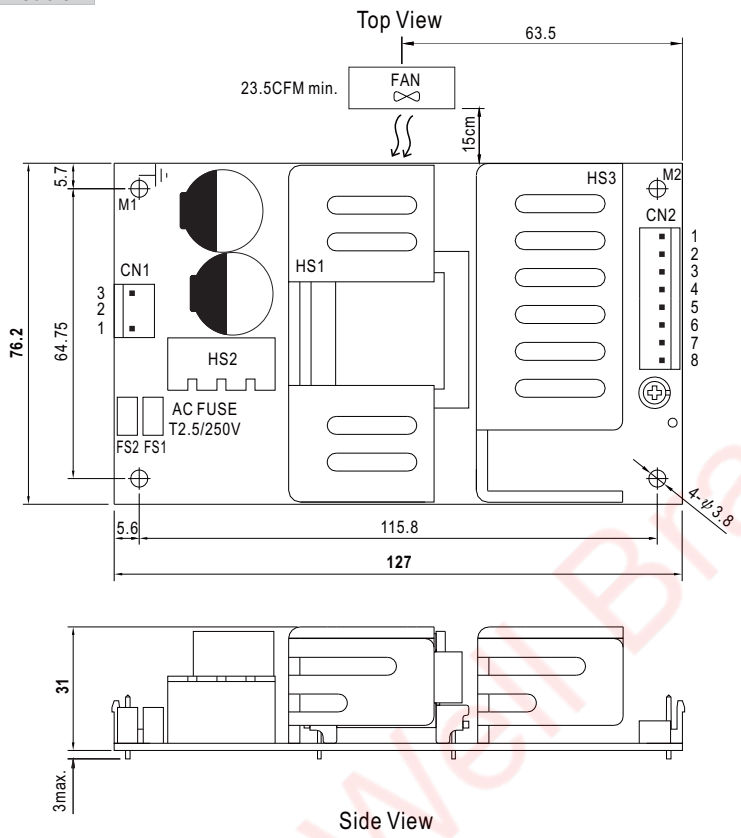
■ Output Derating VS Input Voltage



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■ Mechanical Specification



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 B8P-VH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1,2	V1	JST VHR or equivalent	JST SVH-21T-P1.1 or equivalent
3,4,5	COM		
6,7	V2		
8	V3		

⏚ : Grounding Required

⚠ 1.HS1,HS2,HS3 cannot be shorted.
2.M1 is safety ground. For better EMC performance,Please secure an electrical connection between M1,M2 and chassis grounding.

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html

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