275 Watt Medical



Features

- 5 x 3 x 0.75 Inches Form factor
- 275 Watts with Forced Air Cooling
- Approval to EN60601 3rd Edition
- Efficiencies upto 92%
- -40 to 70 degree operating temperature*
- Dual fusing
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- 3.37m Hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.5W
- Medical (BF) Safety Approvals

	Electrical Specifications				
Input Voltage	80-264 VAC/390 VDC, Universal (Derate from 100% at 10 <mark>0V AC to</mark> 72% at 80V AC)				
Input Frequency	47-63 Hz				
Input Current	115 VAC: 2.6 A max. 230 VAC: 1.3 A max.				
No Load Power	<0.5W typical for MULP275-1XXX and <0.85W typical for MULP275-1XXX-PGPF				
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 2 <mark>64 VAC – 75 A</mark>				
Leakage Current	300 uA Typical, (N.A. For Class II Option) Touch current <100uA				
Efficiency	92%(48V,58V), 90%(24V, <mark>30V), 88%(12V,15</mark> V)				
Hold-up Time	at 275W:8 ms ; 160W: 16 ms				
Power Factor	excess 0.95 with Full Load				
Output Power	275W with 13 CFM, upto 160W Convection				
Line Regulation	+/-0.5%				
Load Regulation	+/-1%				
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=4%,				
	recovery time < 5 ms				
Rise Time	55ms typical				
Set Point Tolerance	+/-1%				
Over Current Protection	>110%				
Over Voltage Protection	110 to 140%				
Short Circuit Protection	Hiccup mode				
Switching Frequency	PFC – 70 to 130 KHz ,PWM – 50-80 KHz				
Operating Temperature ⁷	-40 to +70°C				
Storage Temperature	-40 to +85°C				
Relative Humidity	5% to 95%, noncondensing				
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.				
MTBF	3.37m Hours, Telcordia -SR332-issue 3				
Isolation Voltage	Input to Output – 4000 VAC medical applications.				
	Input to GND - 1500 VAC (Not Applicable For Class II Option)				
	Output to GND- 1500VAC for type BF , 500 VAC for type B (Not Applicable For Class II Option)				
Cooling	275W with 13 CFM forced air cooling ⁶ (refer Mechanical Drawing)				
	upto 160 W with natural convection cooling ⁶ (refer Derating Curve)				

Model Number	Description	Voltage	Max. Load (Convection) (152W) @50°C	Max.Load (Convection) (160W) @40°C	Max. Load (13 CFM)	Min. Load	Ripple ¹	Signals
MULP275-1012	with Screw Terminal	12 V	13.33A	12.50A	20.83A	0.0 A	2%	N.A
MULP275-1312	with Molex Connector	12 V	13.33A	12.50A	20.83A	0.0 A	2%	N.A
MULP275-1015	with Screw Terminal	15 V	10.66A	10.00A	16.67A	0.0 A	2%	N.A
MULP275-1315	with Molex Connector	15 V	10.66A	10.00A	16.67A	0.0 A	2%	N.A
MULP275-1024	with Screw Terminal	24 V	6.67A	6.25A	10.41A	0.0 A	1%	N.A
MULP275-1324	with Molex Connector	24 V	6.67A	6.25A	10.41A	0.0 A	1%	N.A
MULP275-1030	with Screw Terminal	30 V	5.33A	5.00A	8.33A	0.0 A	1%	N.A
MULP275-1330	with Molex Connector	30 V	5.33A	5.00A	8.33A	0.0 A	1%	N.A
MULP275-1048	with Screw Terminal	48 V	3.33A	3.12A	5.20A	0.0 A	1%	N.A
MULP275-1348	with Molex Connector	48 V	3.33A	3.12A	5.20A	0.0 A	1%	N.A
MULP275-1058	with Screw Terminal	58 V	2.58A	2.76A	4.31A	0.0 A	1%	N.A
MULP275-1358	with Molex Connector	58 V	2.58A	2.76A	4.31A	0.0 A	1%	N.A
MULP275-0012	with Screw Terminal	12 V	13.33A	12.50A	20.83A	0.0 A	2%	PG & AC PF
MULP275-0312	with Molex Connector	12 V	13.33A	12.50A	20.83A	0.0 A	2%	PG & AC PF
MULP275-0015	with Screw Terminal	15 V	10.66A	10.00A	16.67A	0.0 A	2%	PG & AC PF
MULP275-0315	with Molex Connector	15 V	10.66A	10.00A	16.67A	0.0 A	2%	PG & AC PF
MULP275-0024	with Screw Terminal	24 V	6.67A	6.25A	10.41A	0.0 A	1%	PG & AC PF
MULP275-0324	with Molex Connector	24 V	6.67A	6.25A	10.41A	0.0 A	1%	PG & AC PF
MULP275-0030	with Screw Terminal	30 V	5.33A	5.00A	8.33A	0.0 A	1%	PG & AC PF
MULP275-0330	with Molex Connector	30 V	5.33A	5.00A	8.33A	0.0 A	1%	PG & AC PF
MULP275-0048	with Screw Terminal	48 V	3.33A	3.12A	5.20A	0.0 A	1%	PG & AC PF
MULP275-0348	with Molex Connector	48 V	3.33A	3.12A	5.20A	0.0 A	1%	PG & AC PF
MULP275-0058	with Screw Terminal	58 V	2.58A	2.76A	4.31A	0.0 A	1%	PG & AC PF
MULP275-0358	with Molex Connector	58 V	2.58A	2.76A	4.31A	0.0 A	1%	PG & AC PF
MULP275-CK metal co	MULP275-CK metal cover kit accessory							
MULP275-PGPF-CK m	etal cover kit accessory							

Connectors							
J1	Pin 1	AC LINE					
	Pin 2	NOT FITTED					
	Pin 3	AC NEUTRAL					
J2 Option 1 & 2	Pin 1,2,3	V1 +VE					
	Pin 4,5,6	V1 -VE					
J3	Pin 1	FAN +VE					
	Pin 2	FAN -VE					
J4	Pin 1	Vs					
(For PGPF Option Only)	Pin 2	PGPF					
	Pin 3	GND					



Notes

- 1. Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.
- 2. Class II means without input Earth pin.
- 3. Combined output power of main output, fan supply shall not exceed max. Power rating.
- 4. Fan supply output voltage tolerance including set point accuracy, line and load regulation is $\pm 1/10\%$ and Ripple and noise is less than 10%.
- 5. Specifications are for nominal input voltage, 25°C unless otherwise stated.
- 6. 275W with 13CFM forced air cooling and 160W with natural convection cooling at 100 to 264VAC.
- 7. -40 to 0°C startup is guaranteed with spec deviation in output ripple and voltage regulation.

	Mechanical Specifications					
AC Input Connector (J1)	Molex: 26-60-4030					
	Mating: 09–50–3031; Pins: 08–50–0106					
DC Output Connector (J2) Option 1 (Screw Terminal)	Molex: 39357 Series or equivalent					
DC Output Connector (J2) Option 2	Molex: 26-60-4060					
(Molex Connector)	Mating: 09-50-3061; Pins: 08-50-0106					
Aux (Fan) Output(J3)	AMP :640456-2					
	Mating: 640440-2					
Signal Ouput (J4)	AMP :640456-3					
	Mating: 640440-3					
Dimensions	5 x 3 x 0.75 inches					
	(127 x 76.2x 19.05 mm)					
Weight	200 gm approx					
EMC						
CE Mark	Complies with LVD Directive					
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B					
Static Discharge	EN61000-4-2, Level-3					
RF Field Susceptibility	EN61000-4-3, Level-3					
Fast Transients/Bursts	EN61000-4-4, Level-3					
Radiated Emissions	Level A radiated,					
	Level B radiated with external core (King core K5B RC 25x12x15-M in input cable (5 turns))					
Surge Susceptibility	EN61000-4-5, Level-3					
Harmonic Current	EN61000-3-2, Class D					
Safety						
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1					
Approval Agency	Nemko, UL, C-UL					
Safety File Number(s)	(Pending)					











