

## Features

- 3 x 2 x 0.75 Inches Form factor
- 40 Watts Convection
- Approval to EN60601 3rd Edition
- Efficiencies 85% Typical
- -40 to 70 degree operating temperature\*
- Dual fusing
- 2m Hours, Telcordia -SR332-issue 3 MTBF
- No Load Power < 0.3W
- Medical (BF) Safety Approvals
- Meets standard IEC60601-1-2 : 2014 (4th Edition)

## Electrical Specifications

Input Voltage	85-264 VAC/390 VDC, Universal	
Input Frequency	47-63 Hz	
Input Current	115 VAC: 0.8 A max.	230 VAC: 0.4 A max.
No Load Power	less than 0.3W typical	
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A	
Leakage Current	300 uA Typical, (N.A. For Class II Option)	Touch current <100uA
Efficiency	85% Typical	
Hold-up Time	40W:60 ms @230VAC	
Output Power	40W Convection Cooling	
Line Regulation	+/-0.5%	
Load Regulation	+/-1%	
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50/60Hz,max excursion 4%, recovery time 5mS.	
Rise Time	50ms typical	
Set Point Tolerance	2% (3% for 5V model)	
Over Current Protection	>110%	
Over Voltage Protection	110 to 140%	
Short Circuit Protection	Hiccup mode	
Switching Frequency	65 KHz Typical	
Operating Temperature <sup>4</sup>	- 40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation	
Storage Temperature	-40 to +85°C	
Relative Humidity	5% to 95%, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
MTBF	2m 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)	

### Option 1

Model Number	Description	Voltage	Max. Load	Min. Load	Ripple <sup>1</sup>
MULP40-1305	with Header	5 V	5A	0.0 A	1.5%
MULP40-1312	with Header	12 V	3.33A	0.0 A	1%
MULP40-1315	with Header	15 V	2.67A	0.0 A	1%
MULP40-1324	with Header	24 V	1.67A	0.0 A	1%
MULP40-1330	with Header	30 V	1.33A	0.0 A	1%
MULP40-1348	with Header	48 V	0.83A	0.0 A	1%
MULP40-1358	with Header	58 V	0.69A	0.0 A	1%
MULP40-CK metal cover kit accessory					

### Option 2

Model Number	Description	Voltage	Max. Load	Min. Load	Ripple <sup>1</sup>
MULP40-1205	with PCB Mounting	5 V	5A	0.0 A	1.5%
MULP40-1212	with PCB Mounting	12 V	3.33A	0.0 A	1%
MULP40-1215	with PCB Mounting	15 V	2.67A	0.0 A	1%
MULP40-1224	with PCB Mounting	24 V	1.67A	0.0 A	1%
MULP40-1230	with PCB Mounting	30 V	1.33A	0.0 A	1%
MULP40-1248	with PCB Mounting	48 V	0.83A	0.0 A	1%
MULP40-1258	with PCB Mounting	58 V	0.69A	0.0 A	1%

### Option 3

Model Number	Description	Voltage	Max. Load	Min. Load	Ripple <sup>1</sup>
MULP40-1005	with Screw Terminal	5 V	5A	0.0 A	1.5%
MULP40-1012	with Screw Terminal	12 V	3.33A	0.0 A	1%
MULP40-1015	with Screw Terminal	15 V	2.67A	0.0 A	1%
MULP40-1024	with Screw Terminal	24 V	1.67A	0.0 A	1%
MULP40-1030	with Screw Terminal	30 V	1.33A	0.0 A	1%
MULP40-1048	with Screw Terminal	48 V	0.83A	0.0 A	1%
MULP40-1058	with Screw Terminal	58 V	0.69A	0.0 A	1%
MULP40-CK metal cover kit accessory					

#### Connectors

J1 Option 1 & 3	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2 Option 1 & 3	Pin 1,2	V1 +VE
	Pin 3,4	V1 -VE



Innovations in Power

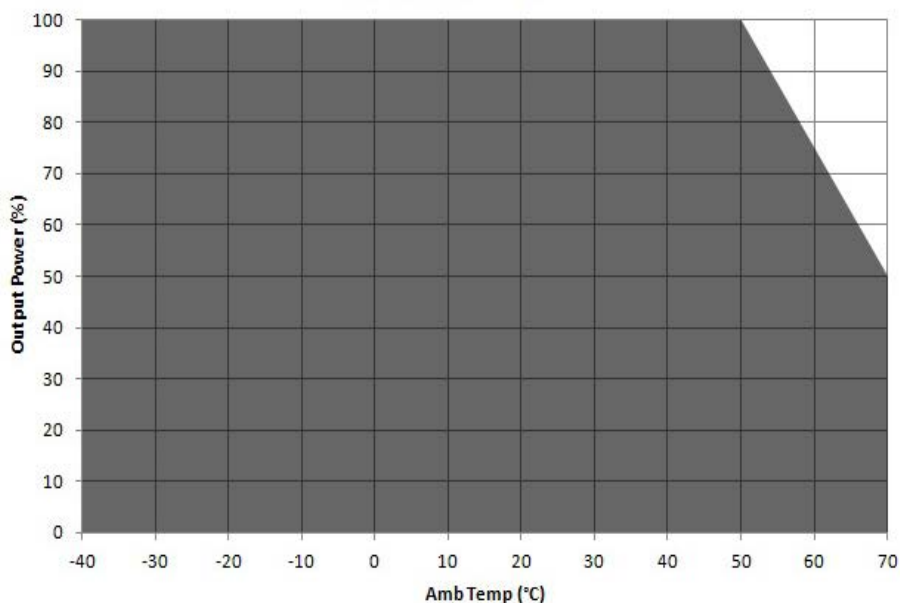
## Notes

1. Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.
2. Class II means without input Earth pin.
3. Specifications are for nominal input voltage, 25°C unless otherwise stated.
4. Output ripple can be more than 10% of the output voltage.
5. When used in Cover Kit, de-rate output power to 70 % under all operating conditions

Mechanical Specifications		
AC Input Connector (J1) Option 1	Tyco: 640445-3 Mating: 647402-3; Pins: 3-647409-1	
DC Output Connector (J2) Option 1	Tyco: 640445-4 Mating: 647402-4; Pins: 3-647409-1	
Dimensions	3 x 2 x 0.75 inches (76.20 x 50.8 x 19.05 mm)	
Weight	100 gm approx	
EMC		
Parameter	Conditions/Description	Criteria
Conducted Emissions	EN 55011-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55011 A	Pass Level B with external core (King core K5B RC 25x12x15-M in input cable)
Input Current Harmonics	EN 61000-3-2	Class A
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 4, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 4, Criterion A
Voltage dips, interruptions	EN 61000-4-11	Criterion A & B
Safety		
CE Mark	Complies with LVD Directive	
Approval Agency	Nemko, UL, C-UL	
Safety Standard(s)	EN60601-1, IEC 60601-1 (ed.3), ANSI / AAMI ES 60601 - 1, CSA C22.2 No. 60601-1	
Safety File Number(s)	Class I : Nemko: P17221669, CB: N095698, UL: 2017-1-30-E173812 Class II : Nemko: P17221705, CB : N095847, UL: 2017-01-31-E173812	

## Derating Curve

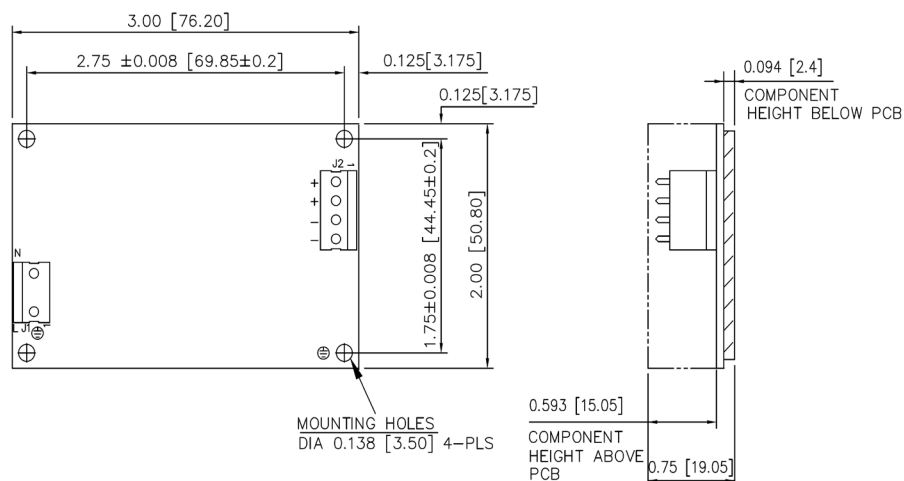
### Power de-rating



De-rate linearly from 100% at 50°C to 50% at 70°C

## Mechanical Drawing

### Option 1



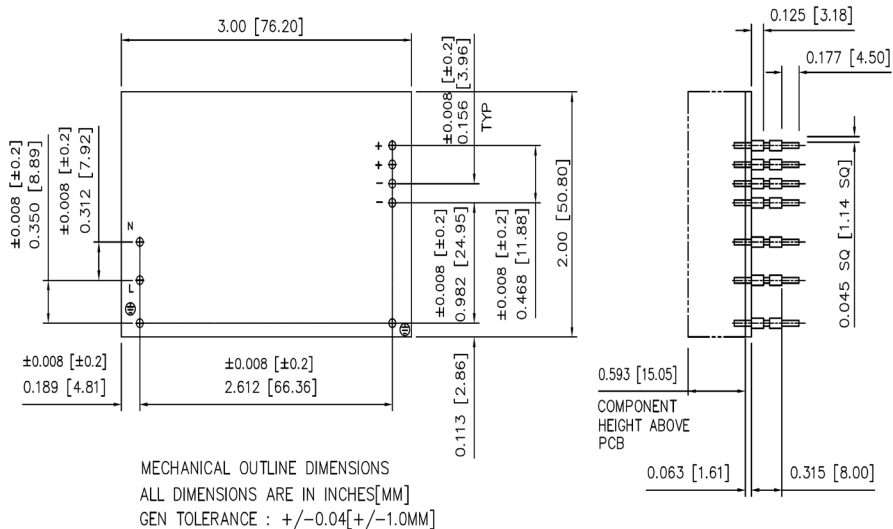
MECHANICAL OUTLINE DIMENSIONS  
ALL DIMENSIONS ARE IN INCHES[MM]  
GEN TOLERANCE : +/-0.04[+/-1.0MM]

Notes: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following

1. Stand off, used to mount PCB has OD of 5.4 mm max.
2. Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3. Washer, if used, to have dia of 6.5 mm max.

### Mechanical Drawing

#### Option 2



### Mechanical Drawing

#### Option 3

