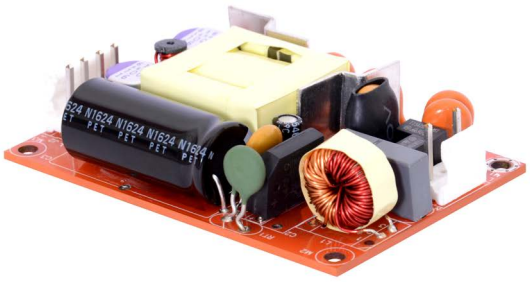
40 Watt Medical



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[4]	- 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)

Please read our datasheet & drawing disclaimer here.

Option 1

Model Number	Description	Voltage	Max. Load	Min. Load	Ripple[1]
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[1]
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[1]
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 μF (Electrolytic capacitor) in parallel with a 0.1 μF capacitor at rated line voltage and load ranges.
2. Class II version available, Add "-II" suffix at the end of the Model Number.
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

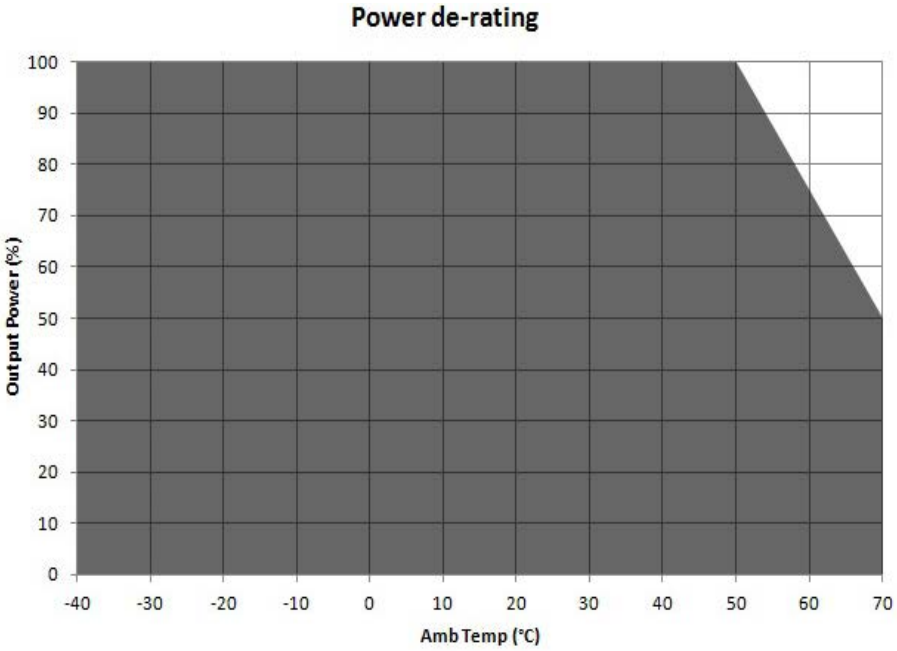
EMC

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: NO95698, UL: 2017-1-30-E173812 Class II : Nemko: P17221705, CB : NO95847, UL: 2017-01-31-E173812

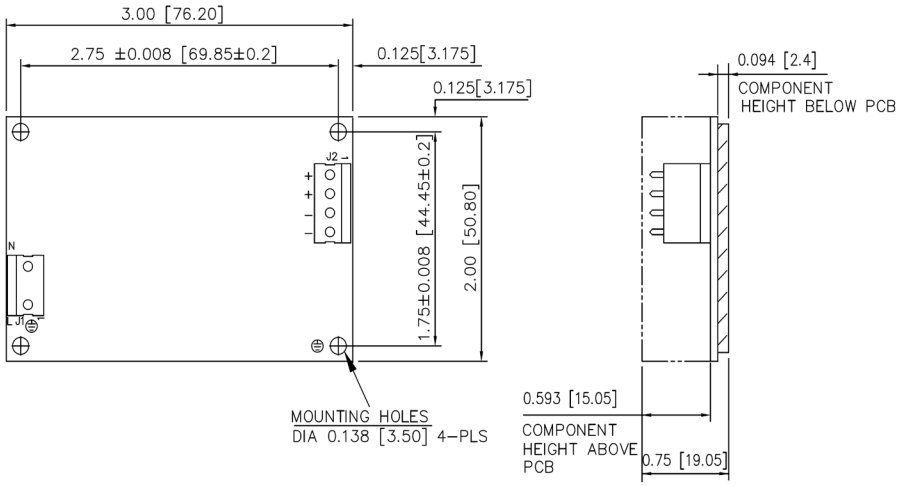
Derating Curve



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

Mechanical Drawing

Option 1

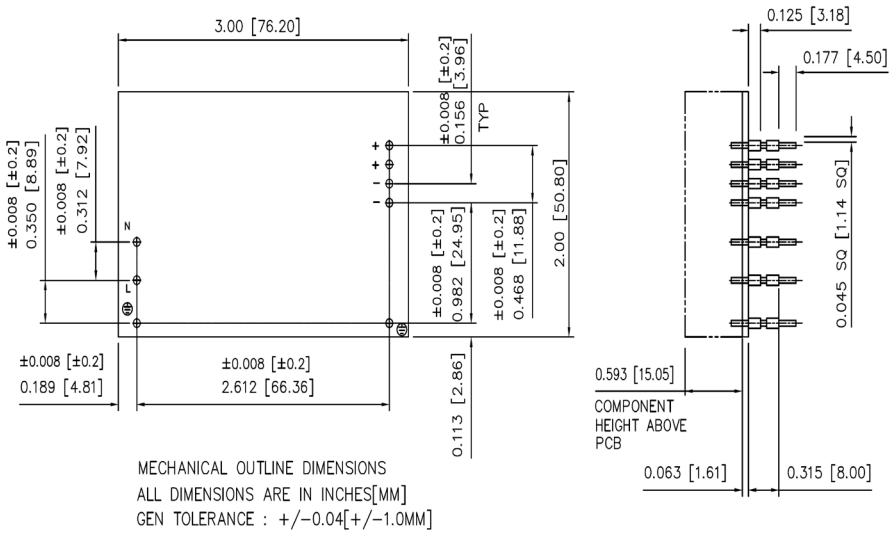


MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE : +/−0.04[+/−1.0MM]

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

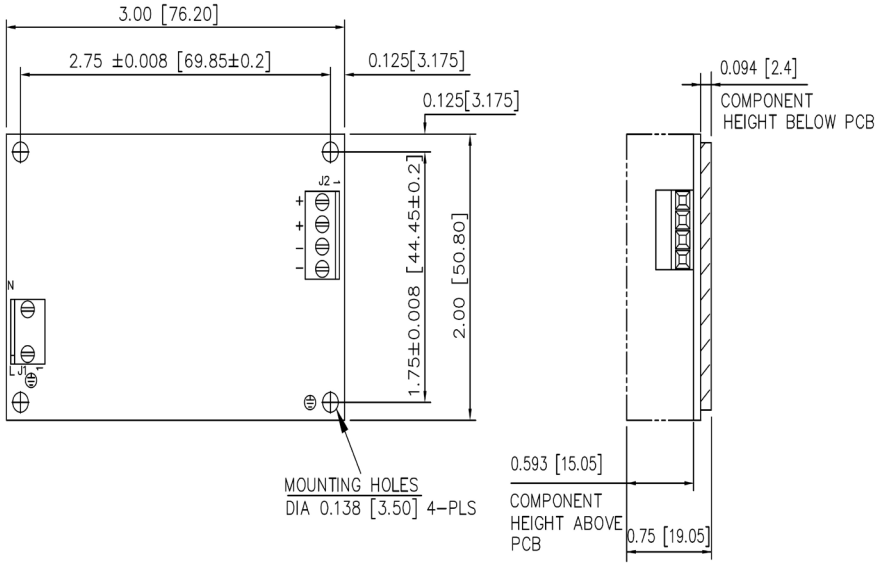
Option 2



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

Mechanical Drawing

Option 3



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