

## Features

- 5 x 3 x 1.5 Inches Form factor
- Up to 550 Watts with Forced Air Cooled
- Efficiencies up to 92%
- -40 to 70 degree operating temperature\*
- 12V / 0.5A Fan Output, Thermal Shut-Down feature
- Shall be approved to EN60950-1 2nd Edition

## Electrical Specifications

Input Voltage	90-264 VAC/390 VDC, Universal (Derate from 100% at 115VAC to 78% at 90VAC)	
Input Frequency	47-63 Hz	
Input Current	115 VAC: 6.0 A max.	230 VAC: 3.0 A max.
No Load Power	< 0.5W @ 115VAC	< 0.7W @ 230VAC
Inrush Current	115 VAC – 25 A, 230 VAC – 45 A, 264 VAC – 75 A	
Leakage Current	<200uA @115VAC and <400uA @230VAC	
Efficiency	92%(48V), 91%(24V), 90%(12V,15V) typical@ 230VAC full load	
Hold-up Time	Full Load > 16 ms typical	Convection Load > 55 ms typical    Conduction Load > 30ms typical
Power Factor	exceeds 0.95 with Full Load	
Output Power	up to 550W (Forced Air Cooled) up to 250W (Conduction Cooled) up to 150W (Convection Cooled)	
Output Voltage Adjustability	+/-3%	
Line Regulation	+/-0.5%	
Load Regulation	+/-1%	
Transient Response	50-100% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50Hz=5% , recovery time < 5 ms	
Rise Time	55 ms typical	
Set Point Tolerance	+/-1%	
Over Current Protection	>110% ,Hiccup mode / Auto Recovery	
Over Voltage Protection	110 to 140% , Hiccup mode / Auto Recovery	
Short Circuit Protection	Hiccup mode / Auto Recovery	
Switching Frequency	PFC – 70 to 130 KHz ,Resonant – 68 to 80 KHz	
Operating Temperature	-40 to +70°C, * -40 to 0°C startup is guaranteed with spec deviation (ref note 6)	
Storage Temperature	-40 to +85°C	
Relative Humidity	5% to 95%, noncondensing	
Altitude	Operating: 16,000 ft.; Nonoperating: 40,000 ft.	
Isolation Voltage	Input to Output – 3000V AC for ITE application Input to GND - 1500 VAC	

Model Number	Voltage	Max. Load (Convection)	Max. Load <sup>7</sup> (Conduction)	Max. Load (400 LFM)	Min. Load	Ripple <sup>1</sup>
WLC550-1012	12V	9.17A	16.67A	41.67A	0.0A	2%
WLC550-1015	15V	7.33A	13.33A	33.33A	0.0A	2%
WLC550-1024	24V	6.25A	10.42A	22.92A	0.0A	1%
WLC550-1030	30V	5.00A	8.33A	18.33A	0.0A	1%
WLC550-1048	48V	3.13A	5.21A	11.46A	0.0A	1%
WLC550-1058	58V	2.59A	4.31A	9.48A	0.0A	1%

Connectors		
J1	Pin 1	AC LINE
	Pin 2	NOT FITTED
	Pin 3	AC NEUTRAL
J2	Pin 1	V1 +VE
	Pin 2	V1 -VE
J3	Pin 1	FAN +VE
	Pin 2	FAN -VE

## 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. Combined output power of main output, fan supply shall not exceed max. Power rating.
3. Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10% and Ripple and noise is less than 10%.
4. Specifications are for nominal input voltage, 25°C unless otherwise stated.
5. Thermal shutdown feature : The power supply goes in hiccup mode when the temperature of Substrate PCB exceeds 110 °C (+/-10 °C).
6. Output ripple can be more than 10% of the output voltage.
7. Refer Recommended Conduction Plate & Clearance on Page No. 6



## Mechanical Specifications

AC Input Connector (J1)	JST : B3P-VH-B(LF)(SN) or equivalent Mating: VHR-3M or equivalent Pins : SVH-41T-P1.1 or equivalent
Earth (J4)	Molex: 19705-4301 Mating: 19003-0001
DC Output Connector (J2) (Screw Terminal)	6-32 inches Screw Pan HD Mating: Designed to accept Ring Tongue Terminal AMP : 8-31886-1, wherein one 16 AWG(max) wire can be crimped. Note : One Ring Tongue Terminal with 16 AWG is recommended for current up to 11A only. Use multiple tongue terminals with wire for more current
Aux (Fan) Output(J3)	AMP :640456-2 Mating: 640440-2
Dimensions	5 x 3 x 1.5 inches (127 x 76.2x 38.1 mm)
Weight	500 gm approx

## EMC

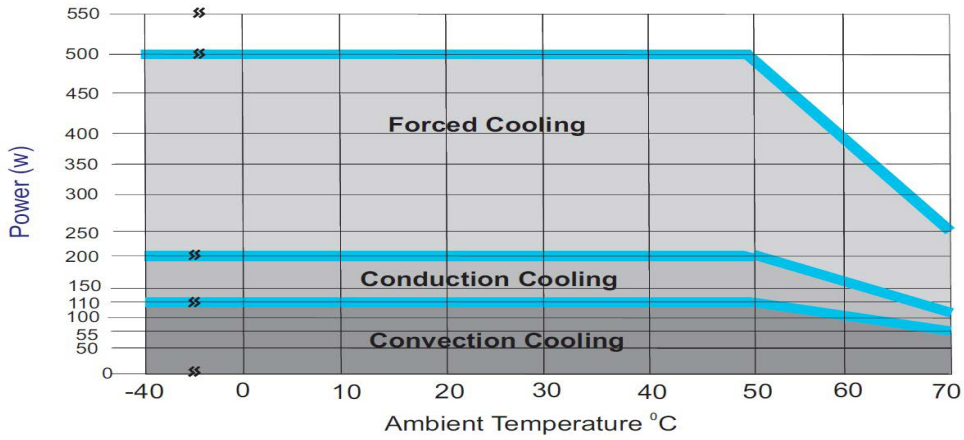
CE Mark	Complies with LVD Directive
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15-B
Static Discharge	EN61000-4-2, Level-3
RF Field Susceptibility	EN61000-4-3, Level-3
Fast Transients/Bursts	EN61000-4-4, Level-3
Radiated Emissions	Level A radiated
Surge Susceptibility	EN61000-4-5, Level-3
Harmonic Current	EN61000-3-2, Class D

## Safety

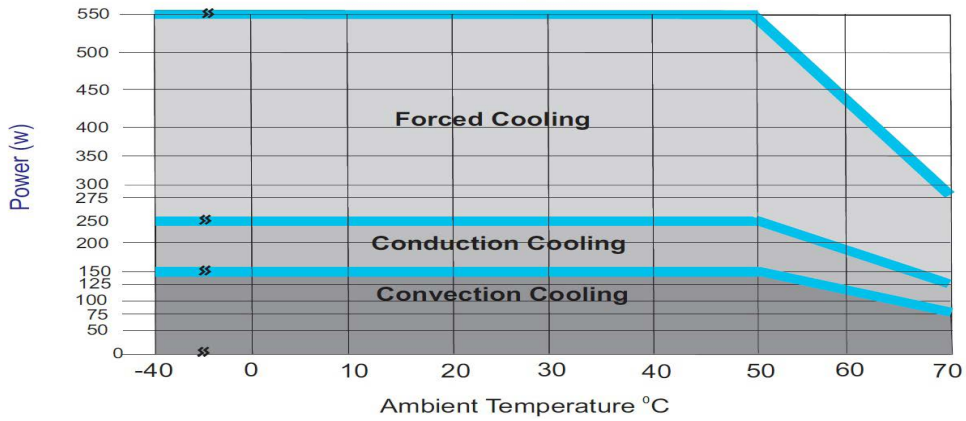
Safety Standard(s)	UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am2:2013 EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Approval Agency	Nemko, UL, C-UL
Safety File Number(s)	UL Certificate No : 20160627-E150565 CB Test Certificate No : NO93260 Nemko Certificate No : P16221279

## Derating Curve

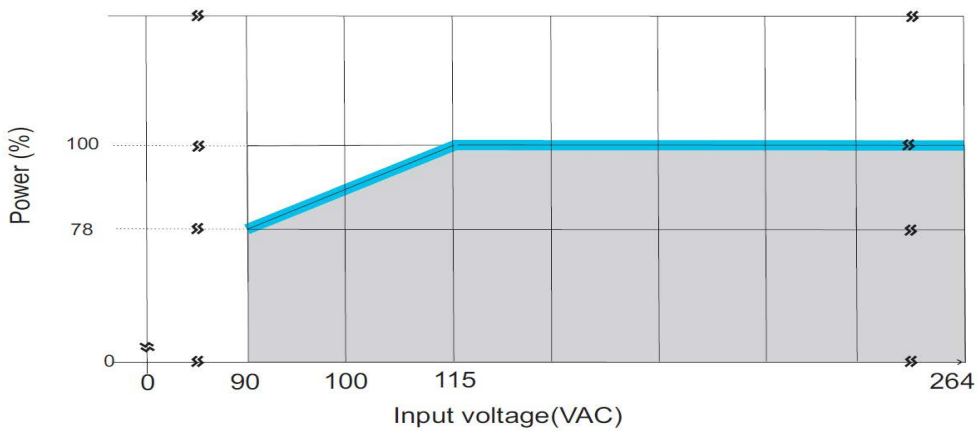
Output Power Derating  
12V, 15V Output  
(For all mounting options, a to f)



Output Power Derating  
24V, 30V, 48V, 58V Output  
(For all mounting options, a to f)

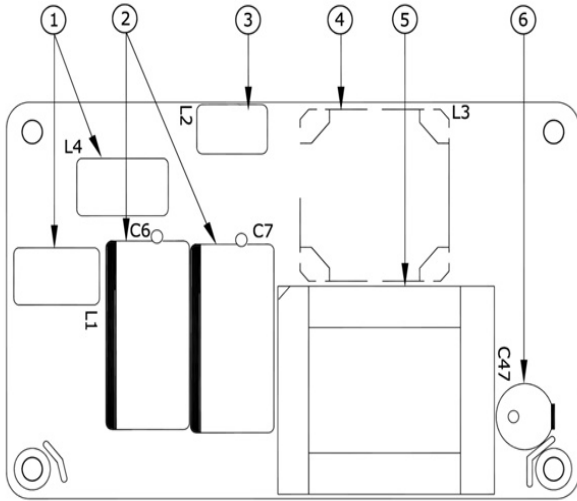


Derating w.r.t Input  
(For all mounting options, a to f)

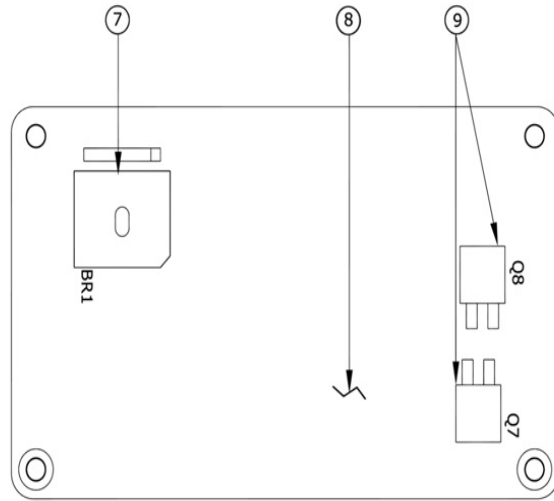


## Maximum Operating Temperature

For reliable and safe operation, please make sure the maximum component temperatures given in table below is not exceeded.



TOP PCB



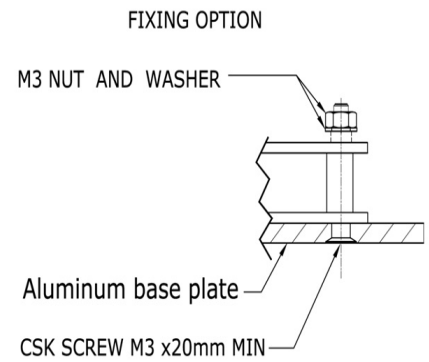
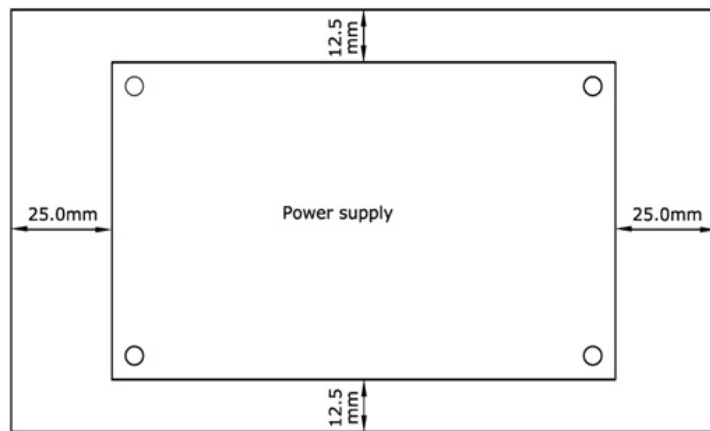
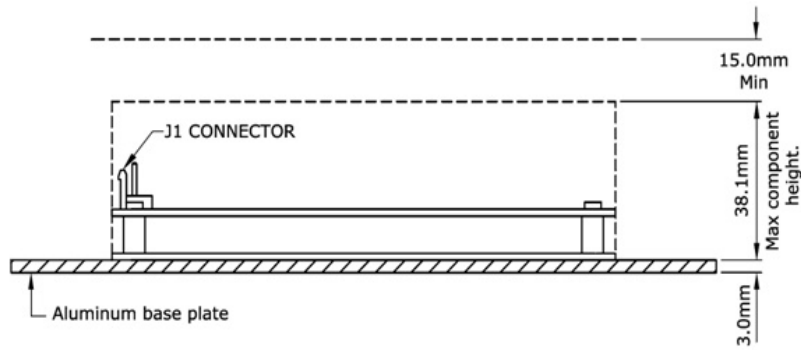
BOTTOM PCB

Ident no	Description	Max Temp Allowed (°C)
1	Common mode chokes	95
2	Input Bulk Capacitors	90
3	Differential choke	110
4	Boost Choke	110
5	Output Transformer	125 (for 12V & 15V) 110 (for 24V,30V,48V,58V)
6	Output Capacitor	90
7	Bridge Rectifier	120
8	Aluminium Clad PCB	105
9	Output Rectifiers	110

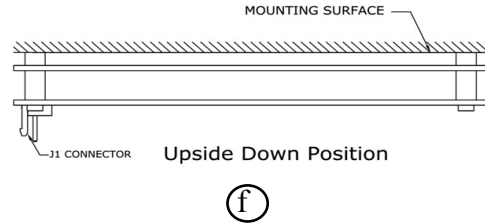
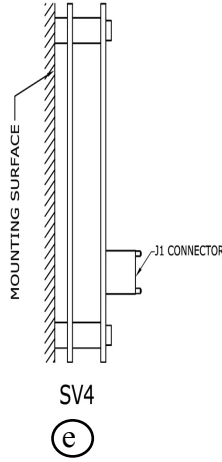
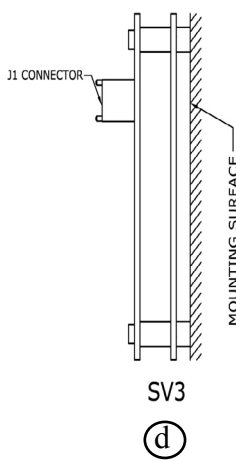
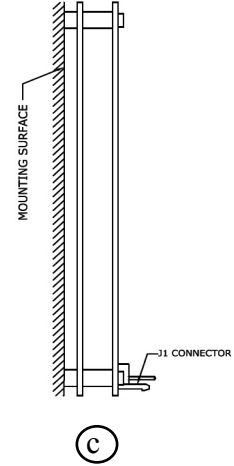
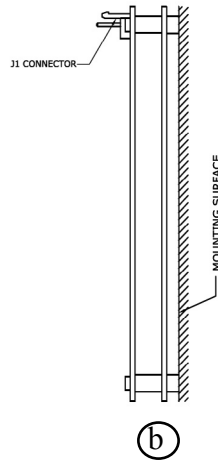
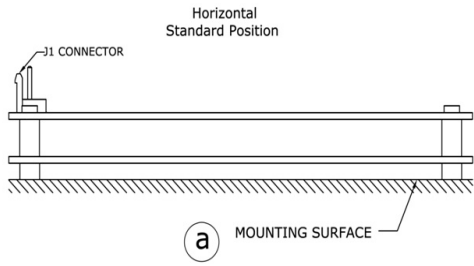
## Recommended Conduction Plate & Clearance

Conduction power rating mentioned in the table is with additional aluminium base plate of 3 mm thickness with 177.8mm(7in) length & 101.6mm(4in) width.

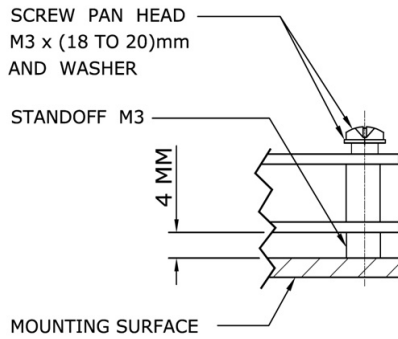
Clearance of minimum 15mm above the component height is recommended for better thermal management.



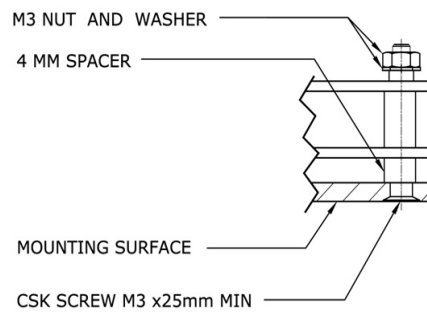
# Mounting Option



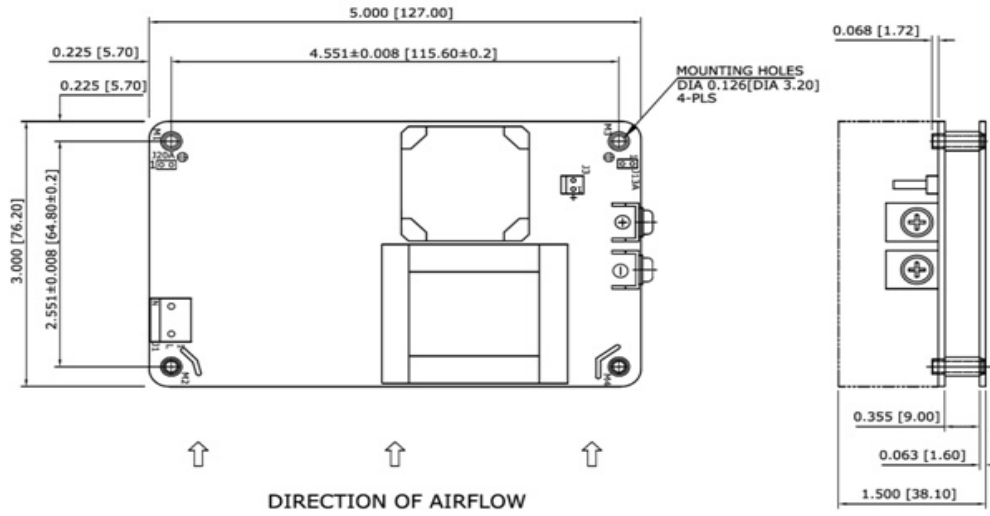
## FIXING OPTION - 1



## FIXING OPTION - 2



# Mechanical Drawing



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