

# POWERMASTER® Universal Laptop Power Supply

## T9050



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Powermaster's new ultra slim 90W Universal Laptop Adaptor with soft touch rubber coating is your perfect power supply replacement for almost all well known laptop models in the market.

USB port for charging iPad, smartphone and other USB connective devices. Automatically adjusts voltage control. CE R0HS FCC certified.



HOME AND  
BUSINESS



### DEVICE SPECIFICATIONS

Height	Width	Depth	Weight	Quantity
135 mm	65 mm	18 mm	0.24 kg	1

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### ELECTRICAL SPECIFICATIONS

*NOTE: All specifications hold over full temperature range of 0 to 30 °C unless otherwise noted.*

- 2.1 AC INPUT VOLTAGE:**  
AC 100-240 VAC
- 2.2 AC INPUT FREQUENCY:**  
50/60 Hz single phase
- 2.3 AC INPUT CURRENT:**  
1.8Amax @ input 100VAC 60HZ, with DC output full-loading
- 2.4 STANDBY WATTAGE:**  
Less than 0.5 W at 240Vac input & no load condition
- 2.5 INRUSH CURRENT:**  
100A max .at cold-start and 25 °C, dc output full-loading and 240Vac input
- 2.6 OUTPUT VOLTAGES:**
- |         |                 |
|---------|-----------------|
| +5V,    | 4.75 V ~ 5.25 V |
| +15V,   | 14.3 V ~15.7 V  |
| +16V,   | 15.2 V ~16.8V   |
| +18.5V, | 17.6 V ~19.4V   |
| +19V,   | 18.0V -20.0 V   |
| +19.5V, | 18.5 V -20.5 V  |
| +20V,   | 19.0 V -21.0 V  |

*NOTE: Total regulation defined as the maximum deviation from the nominal voltage for all input line voltages, output load conditions, including cross regulation.*

- 2.7 OUTPUT CURRENT:**
- |         |      |            |
|---------|------|------------|
| +5V,    | 2.1A | continuous |
| +15V,   | 4.5A | continuous |
| +16V,   | 4.5A | continuous |
| +18.5V, | 4.2A | continuous |
| +19V,   | 4.2A | continuous |
| +19.5V, | 4.1A | continuous |
| +20V,   | 4.0A | continuous |

- 2.8 MINIMUM LOAD:**  
Outputs will maintain regulation with no load.

- 2.9 HOLD-UP TIME:**  
15m sec min@ dc output full-loading and 230Vac input.

- 2.10 RIPPLE AND NOISE:**
- |         |        |
|---------|--------|
| +5V,    | ≤100mV |
| +15V,   | ≤150mV |
| +16V,   | ≤160mV |
| +18.5V, | ≤185mV |
| +19V,   | ≤190mV |
| +19.5V, | ≤195mV |
| +20V,   | ≤200mV |

Measured with a scope, DC-20 MHz bandwidth, differential mode, measured at the pins of the matching connector of which each output is decoupled by a high frequency 0.1uF cap and a 47uF electrolytic cap.

- 2.11 EFFICIENCY:**  
85% min@ 230Vac /50Hz input

- 2.12 OUTPUT VOLTAGE OVER-SHOOT:**  
Over-Shoot ≤5% normal output voltage, no spikes in excess of 5% of the rated voltages will occur, on turn on, turn off, power failure or recovery from a fault condition.

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### 2.13 TRANSIENT RESPONSE:

+19V outputs: on the +19V output from 0A to 4.2A  
Maximum voltage deviation is 5%

### 2.14 PROTECTION:

- a. SCP : Short circuit protection with auto recovery function
- b. OVP : Over voltage protection with auto recovery function, Tripped voltage will be less than 27Vdc
- c. OCP : Over current protection  
current limit : 7.5A(max), current limit: 5A(max)@ usb output stage
- d. OTP : The output power of the main supply decreases in a linear way when the temperature of case reaches 95°C

### 2.15 TURN ON TIME:

AC to the DC outputs of the Adaptor, within 3 seconds max at 25°C and line at 230 VAC

### 2.16 RISE TIME:

Rise time shall be less than 50msec, it should be measured from 10% to 90% of the output voltage.

### 2.17 SAFETY:

#### 2.17.1 SAFETY TEST:

- a. Leakage current less than 0.25mA at 240Vac, 50Hz
- b. Hi-Pot test : 3000Vac, 5mA, 3 Sec. between Primary to Secondary ground
- c. Insulation : at dc 500Vdc, 3Sec. between Primary to Secondary circuit. IR shall  $\geq 50M\Omega$

#### 2.17.2 SAFETY STANDARDS:

AS/NZS 60950.1 : 2011

### 2.18 TEMPERATURE COEFFICIENT:

0.03/ °C typical on output

## ENVIRONMENTAL CHARACTERISTICS

### 3.1 TEMPERATURE:

- a : Operation : 0 to 30°C
- b : Storage : -20 to 65°C

### 3.2 HUMIDITY:

- a : Operation : 20 to 80%
- b : Storage : 10 to 90%

### 3.3 ALTITUDE:

From sea level to 2000m (operation) and above (Non operation)

## EMC

GB9254/EN55022/ FCC

## RELIABILITY AND QUALIFICATION

### 5.1 LIFE:

20000 hours@ DC output full-loading, AC 230Vac input & ambient temperature@25°C

### 5.2 MBTF:

When the supply is operation within any of the limits of this specification the MTBF shall be at least 40,000 hours at 25°C (MIL-STD-217F)

### 5.3 BURN-IN:

The power supply will be performed a minimum for a 4 hours Burn-In at 30°C under full load on all power supplies calculate MTBF

### 5.4 TEMPERATURE RISE:

Less than 65°C at AC230V input and DC output full load and Environment temperature 30°C

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### 5.5 VIBRATION TEST:

- a. Non operation vibration with shipping container shall be 2G'S Peak/7-50Hz, 4G'S/ 50-500Hz, after test o abnormally to be found.
- b. Operation vibration shall be 0.5G'S peak/10-60Hz, 3 AXES, after Test no abnormally to be noted.

### 5.6 DROP TEST:

The product to be dropped from 1 meter height to a concrete floor no breakage. Then do the function test ,it should be normal.

### 5.7 CABLE FLEXING TEST:

The DC cord shall with weight of 200g,it swings at angle 60 deg ,2000cycle  
Time min Bending speed: 40cycle per minute shall to be no breakage to the code.

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