60W Single Output Switching Power Supply

**Features**:
- Universal AC input/Full range
- Protections: Short circuit/Over load/Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at 50KHz

### SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DC VOLTAGE</th>
<th>RATED CURRENT</th>
<th>CURRENT RANGE</th>
<th>RATED POWER</th>
<th>RIPPLE &amp; NOISE (max.)</th>
<th>VOLTAGE ADJ. RANGE</th>
<th>VOLTAGE TOLERANCE</th>
<th>LINE REGULATION</th>
<th>LOAD REGULATION</th>
<th>SETUP, RISE, HOLD TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>NL-60-5</td>
<td>5V</td>
<td>12A</td>
<td>0 ~ 12A</td>
<td>60W</td>
<td>120mVp-p</td>
<td>4.75 ~ 5.5V</td>
<td>±2.0%</td>
<td>±0.5%</td>
<td>±1.0%</td>
<td>300ms, 50ms, 80ms / 230VAC</td>
</tr>
<tr>
<td>NL-60-12</td>
<td>12V</td>
<td>5A</td>
<td>0 ~ 5A</td>
<td>60W</td>
<td>120mVp-p</td>
<td>10.8 ~ 13.2V</td>
<td>±1.0%</td>
<td>±0.5%</td>
<td>±1.0%</td>
<td>800ms, 50ms, 10ms / 115VAC at full load</td>
</tr>
<tr>
<td>NL-60-15</td>
<td>15V</td>
<td>4A</td>
<td>0 ~ 4A</td>
<td>60W</td>
<td>150mVp-p</td>
<td>13.5 ~ 16.5V</td>
<td>±1.0%</td>
<td>±0.5%</td>
<td>±1.0%</td>
<td></td>
</tr>
<tr>
<td>NL-60-24</td>
<td>24V</td>
<td>2.5A</td>
<td>0 ~ 2.5A</td>
<td>60W</td>
<td>150mVp-p</td>
<td>21.6 ~ 26.4V</td>
<td>±1.0%</td>
<td>±0.5%</td>
<td>±1.0%</td>
<td></td>
</tr>
</tbody>
</table>

### PROTECTION

- OVER LOAD: 105 ~ 150% rated output power
- Protection type: Hiccup mode, recovers automatically after fault condition is removed.

### ENVIRONMENT

- WORKING TEMP: -10 ~ +60°C (Refer to output load derating curve)
- WORKING HUMIDITY: 20 ~ 90% RH non-condensing
- STORAGE TEMP, HUMIDITY: -20 ~ +85°C, 10 ~ 95% RH
- TEMP. COEFFICIENT: ±0.03%/°C (0 ~ 50°C)
- VIBRATION: 10 ~ 500Hz, 2G 10min./cycle, period for 60min. each along X, Y, Z axes

### SAFETY & EMC (Note 4)

- SAFETY STANDARDS: UL1012, UL1950, TUV EN62368 Approved
- WITHSTAND VOLTAGE: I/P:O/P:3KVAC I/P:O/P:1.5KVAC I/P:FG:O/P:0.5KVAC
- ISOLATION RESISTANCE: I/P:O/P:1000M Ohms/500VDC
- EMI CONDUCTION & RADIATION: Compliancy to EN55022 (CISP22) Class B
- HARMONIC CURRENT: Compliance to EN61000-3-2, 3
- EMS IMMUNITY: Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN55024. Light industry level, criteria A

### OTHERS

- MTBF: 316,2K hrs min. MIL-HDBK-217F (25°C)
- DIMENSION: 160*40*33mm (L*W*H)
- PACKING: 0.19Kg: 50pcs/10.5Kg:0.7CUFT

### NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20kHz of bandwidth by using a 12" twisted pair wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance: includes setup tolerance, line regulation and load regulation.
4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.