MAC30 SERIES
SINGLE, DUAL & TRIPLE OUTPUTS

The MAC30 series of DC-DC converters have been designed as a surface-mount & thru-hole solution for a wide range of applications where light weight and ease of assembly are needed. Utilizing the latest thermal transfer techniques the MAC30 series packs up to 30 watts of power in 1.75” x 2.0” x .500” open frame construction and operating temperatures of -40°C to +105°C. All models are designed to meet UL1950, CSA 950 and EN 60950.

FEATURES:
- High Efficiency to 89%
- Wide Input Range 2:1
- Remote On/Off
- Under-Voltage Lockout
- Overvoltage & Short Circuit Protection
- Integral Metal Substrate
- Floating or Common Auxiliaries
- Pick & Place Packaging
- External Trim
- -40°C To +105°C Operation
- 1500Vdc Isolation
- Surface Mount & Thru-Hole Types
- Open Frame Construction

MODEL SELECTION GUIDE:

<table>
<thead>
<tr>
<th>INPUT Voltage Range</th>
<th>Lin @ Vin Nom.</th>
<th>Output V1 &amp; V2/ V3</th>
<th>Output Current (FL)</th>
<th>PO (W)</th>
<th>Output OVP</th>
<th>Typical Efficiency</th>
<th>Model Number Note (***)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12Vdc 9-18Vdc</td>
<td>1.299 mA</td>
<td>7 mA</td>
<td>2.5</td>
<td>4.8A</td>
<td>12</td>
<td>3.9V</td>
<td>77% MAC30-12S2V5(**)</td>
</tr>
<tr>
<td>12Vdc 9-18Vdc</td>
<td>1.667 mA</td>
<td>7 mA</td>
<td>3.30</td>
<td>4.8A</td>
<td>16</td>
<td>3.9V</td>
<td>80% MAC30-12S3V3</td>
</tr>
<tr>
<td>12Vdc 9-18Vdc</td>
<td>2.410 mA</td>
<td>7 mA</td>
<td>5.00</td>
<td>4.8A</td>
<td>24</td>
<td>6.8V</td>
<td>83% MAC30-12S05</td>
</tr>
<tr>
<td>12Vdc 9-18Vdc</td>
<td>2.353 mA</td>
<td>7 mA</td>
<td>12.00</td>
<td>2.0A</td>
<td>24</td>
<td>15V</td>
<td>85% MAC30-12S2</td>
</tr>
</tbody>
</table>

Note (***) Insert suffix; SM for Surface-mount type or TH for Thru-hole Type mounting

MODIFICATIONS AND CUSTOMS AVAILABLE

International Coil, Inc., 15 Jonathan Drive, Unit 1 Brockton, MA, 02301 Tel(508) 580-8515, Fax 508-580-8511, www.acutepower.com
**SPECIFICATIONS:** All Specifications Are Typical @ Nominal Input, Full Load & 25°C Unless Otherwise Stated and are Subject to Change without Notice

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**INPUT**

- **Input Voltage Range:**
  - Note (3) 9-18Vdc (12V Models)
  - 18-36Vdc (24V Models)
  - 36-75Vdc (48V Models)

- **Input filter:**
  - PI Type

- **Under Voltage Lockout:**
  - 8.5V (12V Models)
  - 16.5V (24V Models)
  - 32V (48V Models)

- **Remote:**
  - ON: +5V or open, Ref. (-)Vin
  - OFF: +0.7V, Ref. (-)Vin

- **Conducted Noise:**
  - EN55022, level A (Note 5)

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**OUTPUT**

- **Output Power:** 30 W Continuous (Max)
- **Output Voltage/current:** See Model Table
- **Output Setting Accuracy:**
  - Singles +/- 1% typ., +/- 1.5% max.
  - Aux +/ -3%
- **Load Variation:**
  - Singles (FL-10%L) +/- 0.5% Note (4), (6)
  - Aux (FL-20%L) +/- 3%, Balanced, V1 (10%L-F1)
- **Line Regulation:**
  - +/- 0.5% (Vo1), +/- 2% Aux
- **Total Error Band:**
  - Singles +/- 3%, Line/Load & Temp.
  - Auxiliaries (20 MHz BW) +/- 10% (Io1, Io2 & Io3 @ 20% FL)
- **Ripple & Noise:**
  - 100mV (Vo1), 1% (Aux)
- **Transient Response:** 2% Deviation, 200µS
- **Temperature Coefficient:**
  - +/- 0.01%/°C
- **Short circuit Protection:** Indefinite, Modulated, Automatic Recovery

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**GENERAL**

- **Efficiency:** See Model Table
- **Isolation Voltage:** 1500Vdc (1 Min)
- **Isolation Resistance:** 100MΩ
- **Switching Frequency:** 350kHz
- **MTBF:** 1.0M hrs. MIL-HDBK-217F Ground Benign @ 25°C

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**ENVIRONMENTAL**

- **Operating Temperature Range:**
  - -40°C To + 105°C (See Derating Curve)
- **Storage Temperature Range:**
  - -40°C To + 65°C @ FL
- **Maximum Case Temperature:**
  - 100°C
- **Humidity:** 5% To 95% RH, Non-condensing
- **Cooling:** Natural Convection
- **Processing (Note 2):** (230°C peak, 20 sec.)

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**MECHANICAL**

- **Size:** 1.75" X 2.00" X 0.500"
- **Weight:** 24.0G
- **Mounting:** SMD & Through Hole Types
- **Case/ Material:** Open-Frame, 94V-0 FR-4 P.C.B., with Bonded Aluminum Substrate

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**NOTES:**

1) O.V.P. protection is across Vo1.
2) Consult factory for recommended reflow profile.
3) Typical start-up for 12V models is 9V. Maximum startup is 9.5V, with full operation down to 9.0V.
4) Operation is allowed to No-Load on single outputs, however operation below 10% load may cause ripple & noise to exceed spec.
5) External Capacitor required.
6) Auxiliary output regulation rely’s on cross coupling of output channels. A 10% minimum load is required on Vo1 for regulation.

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Pin no’s A - H are used for mechanical integrity and are intended for Surface Mount models only.

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