10W Ultraminiature Modular Switching Power Supplies

- Single / Dual / Triple Outputs
- Universal 90 to 26VAC Input
- 3.3VDC to 24VDC Outputs
- 3,000VAC Input to Output Isolation
- PCB and Chassis Mount Packages
- Full Safety Approvals

**Model Output Output Output Ripple & Noise Line/Load**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Output Voltage</th>
<th>Output Amps</th>
<th>Output Watts</th>
<th>Ripple &amp; Noise max. (Note 2)</th>
<th>Line/Load Reg. max. (Note 3)</th>
<th>Efficiency</th>
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</thead>
<tbody>
<tr>
<td><strong>SINGLE OUTPUT - PCB Mount</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSCA-0100</td>
<td>3.3 VDC</td>
<td>2.5</td>
<td>8W</td>
<td>100mV pk-pk</td>
<td>1% / 1%</td>
<td>62% nom.</td>
</tr>
<tr>
<td>MSCA-0101</td>
<td>5 VDC</td>
<td>2.0</td>
<td>10W</td>
<td>100mV pk-pk</td>
<td>1% / 1%</td>
<td>72% nom.</td>
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<tr>
<td>MSCA-0104</td>
<td>9 VDC</td>
<td>1.1</td>
<td>10W</td>
<td>75mV pk-pk</td>
<td>0.1% / 0.1%</td>
<td>72% nom.</td>
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<tr>
<td>MSCA-0102</td>
<td>12 VDC</td>
<td>0.85</td>
<td>10W</td>
<td>75mV pk-pk</td>
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<td>MSCA-0103</td>
<td>15 VDC</td>
<td>0.67</td>
<td>10W</td>
<td>75mV pk-pk</td>
<td>0.5% / 0.5%</td>
<td>76% nom.</td>
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<td>MSCA-0105</td>
<td>24 VDC</td>
<td>0.42</td>
<td>10W</td>
<td>75mV pk-pk</td>
<td>0.5% / 0.5%</td>
<td>78% nom.</td>
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<tr>
<td><strong>SINGLE OUTPUT - Chassis Mount</strong></td>
<td></td>
<td></td>
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<td><strong>SINGLE OUTPUT - DIN Rail Mount</strong></td>
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<tr>
<td>MSCC-0100/DRL</td>
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These Specifications are subject to change at any time without prior notification

All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

These Astrodyne products are not authorized or warranted for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.

WWW.ASTRODYNE.COM
### 10W Ultraminiature Modular Switching Power Supplies

**MCA-10 series**

- Single / Dual / Triple Outputs
- Universal 90 to 264VAC Input
- 3.3VDC to 24VDC Outputs
- 3,000VAC Input to Output Isolation
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**Features**

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<td>MDCA-0106</td>
<td>±12 VDC</td>
<td>±0.42</td>
<td>10W</td>
<td>75mV pk-pk</td>
<td>1% / 3%</td>
<td>75% nom.</td>
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<tr>
<td>MDCA-0107</td>
<td>±15 VDC</td>
<td>±0.34</td>
<td>10W</td>
<td>75mV pk-pk</td>
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<td>MDCA-0108</td>
<td>+5/12 VDC</td>
<td>1/0.42</td>
<td>10W</td>
<td>100/150mV pk-pk</td>
<td>1% / 1%,5%</td>
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<td>MTCA-0109</td>
<td>+5,±12 VDC</td>
<td>1.5,0.1/0.1</td>
<td>10W</td>
<td>75, ±100mV pk-pk</td>
<td>0.6%, ±0.2 / 0.5%</td>
<td>70% nom.</td>
</tr>
<tr>
<td>MTCA-0111</td>
<td>+5,±15 VDC</td>
<td>1.4,0.1/0.1</td>
<td>10W</td>
<td>75, ±100mV pk-pk</td>
<td>0.6%, ±0.2 / 0.5%</td>
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PCB 2.56"L x 1.77"W x 0.85"H

Chassis 3.77"L x 2.16"W x 1.0"H

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**ASTRODYNE USA: 1-800-823-8082**
**ASTRODYNE PACIFIC: 886-2-26983458**

**WWW.ASTRODYNE.COM**

(c)UL60950-1, IEC60950-1

File# E167432
INPUT SPECIFICATIONS

- **Input Voltage, Nominal**: 90-264VAC
  - Nominal: 100-240VAC
- **Input Frequency**: 47-440 Hz, 50-60Hz Nom.
- **Input Current (LL/HL)**: 0.3A / 0.15A
- **Inrush Current (Note 1)**: 20A @ 100VAC, typ
  - 40A @ 200VAC, typ
- **Leakage Current**: <3.5mA at 265Vin, 50Hz

OUTPUT SPECIFICATIONS

- **Output Voltage/Current**: See Model Selection Chart
- **Preset Accuracy**
  - Single & Matched Dual: ±1% nom.
  - Unmatched Dual -0108 (5V, 12V): ±2%, ±5% nom.
  - Triple O/P: (5, ±O/P): ±1%, ±5% nom.
- **Voltage Adjust**: ±6%, typ
- **Load/Line Regulation (Note 3)**: See Model Selection Chart
- **Cross Regulation (Note 11)**
  - Single & Dual O/P: 3% max.
  - Unmatched Dual -0108 (5V, 12V): ±1%, ±5% max.
  - Triple O/P: (5, ±O/P): N/A, ±0.5% max.
- **Temperature Coefficient**: ±0.03%/°C
- **Ripple/Noise (Note 2)**: See Model Selection Chart
- **Over Voltage Protection**: Clamp*
- **Start Up**: <1S
- **Hold Up Time**
  - Single O/P: 30mS, typ
  - Multi O/P: 20mS, typ
- **Rise Time**: <20mS
- **Over-Shoot/Under-Shoot**: <10% nominal O/P voltage
- **Short Circuit Protection**: Continuous, self-recovering*

GENERAL SPECIFICATIONS

- **On/Off Control (Note 4)**: Open Collector Logic "1"/Open=ON
  - Logic "0"/GND=OFF
- **Input-Output Isolation**: 3000VAC, 60S
- **Insulation Resistance (Note 6)**: ≥ 20M Ω
- **Operating Frequency**: 140 Khz, fixed
- **Efficiency**: See Model Selection Chart
- **Safety (c)UL**: UL 60950-1, 2nd Edition, 03-27-2007 covering European Market

ENVIRONMENTAL SPECIFICATIONS

- **Oper. Temperature**: 0 to +50°C FL See Derate *
  - (Free-air Convection)
- **Relative Humidity (Note 5)**: 0-95%, Non-Condensing
- **Storage Temperature**: -25 to +71°C *
- **MTBF, Single/Multi O/P (Note 9)**: 180,000 / 110,000 Hrs
- **Vibration (Note 10)**: 2G Peak, 10–500Hz, 3 Axes
- **Drop Test**: 70 cm
- **EMS**
  - ESD: EN61000-4-2, 6kV Contact, 8kV Air
  - RS: (Note 7) EN61000-4-3
  - EFT: EN61000-4-4, 2kV on AC Line
  - Surge: EN61000-4-5, 1kV L-N
  - CS: EN61000-4-6, 3V EMF
  - Dips: (Note 8) EN61000-4-11
- **EMI**: CISPR EN55011 class B

PHYSICAL SPECIFICATIONS

- **Case Material**: Rynite, 94V-0 Rated
- **Construction**: Encapsulated, Soft Pot
- **Weight**: PCB / CHA 4.6 oz (130g) / 8.5 oz (241g)

Notes:
1. Cold Start and 25°C
2. Test by dc loading side parallel with a 0.1uF ceramic capacitor and measured bandwidth with DC-20MHz.
3. Regulation includes line, cross temperature drift, tolerance variation Load regulation measured from 20% to Full load. All other outputs at nominal load.
4. No termination necessary with Control pin to maintain constant "On" operation.
5. Operating or Storage
6. 500Vdc, 1 Sec between primary to secondary
7. FR: 80MHz-2.5GHz; Field Strength 3V/M
8. 95% 250Cy , 70% 25Cy, 40% 5Cy, 5% 0.5Cy
9. MIL STD 217, 25°C
10. Tested with shipping container for 30 minutes
11. Measured at nominal load with the other output(s) varied between 20% and 100% nominal load.
MECHANICAL DIMENSIONS - PCB MOUNT

PIN-OUT VIEWED FROM BOTTOM

Model Type/Pin# | Single | Dual | Unmatched Dual | Triple
---|---|---|---|---
1 | AC HI | AC HI | AC HI | AC HI
2 | AC LO | AC LO | AC LO | AC LO
3 | GND | GND | GND | GND
4 | No Pin | No Pin | No Pin | +Vout
5 | No Pin | No Pin | No Pin | Out Com
6 | +Vout | +Vout | +12Vout | No Pin
7 | No Pin | No Pin | No Pin | -Vout
8 | No Pin | Out Com | +5Vout | +5Vout
9 | -Vout | -Vout | Out Com | 5V Ret
10 | Ctrl | Ctrl | Ctrl | Ctrl

Tolerance: \( \pm 0.02 \times 0.508 \)
\( \pm 0.01 \times 0.254 \)

Dimensions shown in inch (mm)
MECHANICAL DIMENSIONS - CHASSIS MOUNT

DIN Rail mounting kit available for Chassis-mount modules, specify part # M-DRL-01. Kit includes mounting plate, DIN Rail clip and assembly hardware.

MECHANICAL DIMENSIONS - DIN RAIL

DIN Rail mounting kit available for Chassis-mount modules, specify part # M-DRL-01. Kit includes mounting plate, DIN Rail clip and assembly hardware.