Series 3715

2 Watt DC – DC Converters

28 Volts DC Input

**Features**
- Specifically designed for demanding military and aerospace applications where best value is critical.
- High efficiency
- No external components required
- Fully isolated design
- Magnetic feedback - no optocouplers used
- Input ripple current inductor
- Output common mode spike filter
- "Inhibit-not" function
- Power on soft start
- Short circuit protection
- "The Mini"

**Specifications**

**INPUT:**
- 28 VDC nominal
- Range: 12 to 50 VDC continuous
- 15 to 50 VDC full power
- Survives 80 V Surge
- Power derates to 75% at 12 VDC, full power at 20 VDC

**ISOLATION:**
- Input to case: 500 VDC
- Input to output: 500 VDC
- Output to case: 500 VDC

**ENVIRONMENT:**
- Storage temperature: -55°C to +150°C
- Shock: 50 G’s
- Acceleration: 500 G’s
- Vibration: 30 G’s

Grades:
- **M:**
  - Full Power Output at \( T_{\text{case}} = +85°C \)
  - Linearity derates to zero at \( T_{\text{case}} = +115°C \)
  - Full Power Output at \( T_{\text{case}} = +125°C \)
  - Linearity derates to zero at \( T_{\text{case}} = +135°C \)

Grades:
- **E:**
  - Full Power Output at \( T_{\text{case}} = +125°C \)
  - Linearity derates to zero at \( T_{\text{case}} = +135°C \)

**WEIGHT:**
- 16 grams typical

---

**Table 1: Single Output Devices**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>3715-S3.3 (1.5W)</th>
<th>3715-S05 (2W)</th>
<th>3715-S12 (2W)</th>
<th>3715-S15 (2W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage (-V_{\text{out}})</td>
<td>(+3.2)</td>
<td>(+3.3)</td>
<td>(+3.4)</td>
<td>(+4.9)</td>
</tr>
<tr>
<td>Output current (-I_{\text{in}})</td>
<td>(+4.9)</td>
<td>(+5.0)</td>
<td>(+5.1)</td>
<td>(+11.8)</td>
</tr>
<tr>
<td>Efficiency (P_{\text{out}})</td>
<td>64%</td>
<td>70%</td>
<td>68%</td>
<td>74%</td>
</tr>
<tr>
<td>Line regulation (P_{\text{reg}})</td>
<td>(-33mV)</td>
<td>(-66mV)</td>
<td>(-50mV)</td>
<td>(-100mV)</td>
</tr>
<tr>
<td>Load regulation (P_{\text{load}})</td>
<td>(-120mV)</td>
<td>(-240mV)</td>
<td>(-240mV)</td>
<td>(-480mV)</td>
</tr>
<tr>
<td>Output ripple (-F.L.)</td>
<td>(-20)</td>
<td>(-40)</td>
<td>(-50)</td>
<td>(-120)</td>
</tr>
</tbody>
</table>

**Table 2: Dual Output Devices**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>3715-D05 (2W)</th>
<th>3715-D12 (2W)</th>
<th>3715-D15 (2W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage (-V_{\text{out}})</td>
<td>(+4.9)</td>
<td>(+5.0)</td>
<td>(+5.1)</td>
</tr>
<tr>
<td>Output current (-I_{\text{in}})</td>
<td>(+4.9)</td>
<td>(+5.0)</td>
<td>(+5.1)</td>
</tr>
<tr>
<td>Efficiency (P_{\text{out}})</td>
<td>68%</td>
<td>74%</td>
<td>72%</td>
</tr>
<tr>
<td>Line regulation (P_{\text{reg}})</td>
<td>(-280mV)</td>
<td>(-560mV)</td>
<td>(-280mV)</td>
</tr>
<tr>
<td>Load regulation (P_{\text{load}})</td>
<td>(-120mV)</td>
<td>(-240mV)</td>
<td>(-120mV)</td>
</tr>
<tr>
<td>Output ripple (-F.L.)</td>
<td>(-50)</td>
<td>(-100)</td>
<td>(-120)</td>
</tr>
</tbody>
</table>

**Notes:**
- *Up to 90% full power available from either output if rated output power is not exceeded.
- Balanced load conditions.

---

**Pin Outs**

**3715-SXX**
- Pin 1: +28VDC Input
- Pin 2: Input Return
- Pin 3: + V Output
- Pin 4: Output Return
- Pin 5: Case Ground
- Pin 6: Output Return
- Pin 7: Inhibit Not

**3715-DXX**
- Pin 1: +28VDC Input
- Pin 2: Input Return
- Pin 3: + V Output
- Pin 4: Output Return
- Pin 5: Case Ground
- Pin 6: – V Output
- Pin 7: Inhibit Not

---

**Part Numbering System**

<table>
<thead>
<tr>
<th>Series and Power</th>
<th>Grade</th>
<th>Config</th>
<th>Voltage</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M</strong></td>
<td><strong>E</strong></td>
<td><strong>S</strong></td>
<td><strong>V</strong></td>
<td><strong>D</strong></td>
</tr>
</tbody>
</table>

---

**Modular Devices, Inc.**
Power Conversion for Space and Military/Aerospace

One Roned Road • Shirley, NY 11967 • E-mail sales@mdipower.com • Fax: 631.345.3106 • Tel 631.345.3100

Revised 2017-07-27