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Double Pole, Electrically Held, 1 Amp and Less

**MAV, MAVD, MAVDD**

**MAV**
- Standard
- High Vibration TO-5
- High Performance Relay

**MAVD**
- Standard
- High Vibration TO-5
- Diode Suppressed
- High Performance Relay

**MAVDD**
- Standard
- High Vibration TO-5
- Diode Suppressed/Protected
- High Performance Relay

### Terminal View

#### MAV
- X1
- A1
- B1
- R1

#### MAVD
- X1
- A1
- B1
- R1

#### MAVDD
- X1
- A1
- B1
- R1

### Contact Ratings

<table>
<thead>
<tr>
<th>Contact Load</th>
<th>Type</th>
<th>Operations Min.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 A @ 28 Vdc</td>
<td>Resistive</td>
<td>100,000</td>
</tr>
<tr>
<td>250 mA @ 115 V Vac, 60 Hz &amp; 400 Hz</td>
<td>Resistive (Case not grounded)</td>
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<tr>
<td>0.1 A @ 28 Vdc</td>
<td>Intermediate Current</td>
<td>50,000</td>
</tr>
</tbody>
</table>

### Electrical Characteristics

- **Contact Arrangement** — 2 Form C (DPDT)
- **Contact Material** —
  - Stationary — Gold/platinum/palladium/silve alloy (Gold plated)
  - Moveable — Gold/platinum/palladium/silve alloy (Gold plated)
- **Contact Resistance** —
  - Before Life — 100 millionhms max. (measured @ 10 mA @ 6 Vdc)
  - After Life — 200 millionhms max. (measured @ 1 A @ 28 Vdc)
- **Mechanical Life Expectancy** — 1 million operations
- **Coil Voltage** — 5 to 26.5 Vdc
- **Coil Power** — 820 mW max. @ 25°C
- **Duty Cycle** — Continuous
- **Pick-up Voltage** — Approximately 70% of Nominal Coil Voltage
- **Pick-up Sensitivity** — 370 mW max. @ 25°C

### Product Facts

- Hermetically sealed
- Extreme shock & vibration ratings
- Spreader pads

- Suppression diode
- Hermetically sealed
- Extreme shock & vibration ratings
- Spreader pads

- Suppression & protection diodes
- Hermetically sealed
- Extreme shock & vibration ratings
- Spreader pads

---

**Enclosure**

**MAV/MAVD/MAVDD Header**

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-8083
UK: 44-8706-080-208

Catalog 5-1773450-5
Revised 9-08

www.tycoelextronics.com

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013

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CII High Vibration Applications

Double Pole, Electrically Held, 1 Amp and Less (Continued)

MAV, MAVD, MAVDD (Continued)

Operating Characteristics

Vibration Resistance —
- 100 Gs, 10 - 2,000 Hz
- 250 Gs, 140 +/- 5 Hz
- 350 Gs, 170 +/- 5 Hz
- 380 Gs, 200 +/- 5 Hz

Shock Resistance —
- 150 Gs, 11 +/- 1 ms max.

Semiconductor Characteristics

Diode —
- 100 Vdc peak inverse voltage (PIV)
- 1.0 Vdc max. transient voltage

How to Specify a Part Number

For our standard catalog High Performance products, the Part Number begins with the series designator shown below.

Specifying a Part Number Example:

<table>
<thead>
<tr>
<th>Series</th>
<th>Terminals</th>
<th>Diodes</th>
<th>Ground Pins</th>
<th>Coils</th>
<th>Spreader/ Mounting Pads</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAV</td>
<td>MAV</td>
<td>MAVD</td>
<td>MAVDD</td>
<td>MAV</td>
<td>MAVD MAVDD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<td></td>
</tr>
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<td>MAVD MAVDD</td>
<td>MAV MAVD MAVDD MAVD MAVD</td>
<td></td>
</tr>
</tbody>
</table>

Note: 1. Coil resistance not directly measurable in MAVDD series.

Coil current should be within limits shown when tested at nominal voltage at 25°C for 5 seconds maximum.

MAV

5.0 50 n/a n/a 3.5 4.6 0.22 0.14 500 5.8 5
6.0 70 n/a n/a 4.0 5.5 0.28 0.18 514 8.0 6
9.0 155 n/a n/a 5.9 8.2 0.54 0.35 523 12.0 9
12.0 235 n/a n/a 8.0 11.0 0.63 0.41 613 16.0 12
18.0 610 n/a n/a 11.9 16.5 0.91 0.59 531 24.0 18
26.5 1,130 n/a n/a 15.9 22.0 1.37 0.89 621 32.0 26

MAVD

5.0 33 n/a n/a 3.5 4.6 0.22 0.14 758 5.8 5
6.0 44 n/a n/a 4.0 5.5 0.28 0.18 818 8.0 6
9.0 125 n/a n/a 5.9 8.2 0.54 0.35 648 12.0 9
12.0 215 n/a n/a 8.0 11.0 0.63 0.41 670 16.0 12
18.0 470 n/a n/a 11.9 16.5 0.91 0.59 689 24.0 18
26.5 1,050 n/a n/a 15.9 22.0 1.37 0.89 669 32.0 26

MAVDD

5.0 33 126.4 92.8 3.5 4.6 0.6 0.6 758 5.8 5
6.0 44 122.6 90.4 4.0 5.5 0.7 0.7 818 8.0 6
9.0 125 73.4 54.3 5.9 8.2 0.9 0.8 648 12.0 9
12.0 215 59.4 37.8 8.0 11.0 1.1 0.9 670 16.0 12
18.0 470 42.0 31.3 11.9 16.5 1.4 1.1 689 24.0 18
26.5 1,050 28.3 21.3 15.9 22.0 1.8 1.4 669 32.0 26

Note: 1. Coil resistance not directly measurable in MAVDD series.

Coil current should be within limits shown when tested at nominal voltage at 25°C for 5 seconds maximum.
Double Pole, Electrically Held, 1 Amp and Less (Continued)

MSV, MSVD

<table>
<thead>
<tr>
<th>MSV</th>
<th>MSVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive High Vibration TO-5</td>
<td>Sensitive High Vibration TO-5</td>
</tr>
<tr>
<td>High Performance Relay</td>
<td>Diode Suppressed High Performance Relay</td>
</tr>
</tbody>
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Product Facts
- Hermetically sealed
- Extreme shock & vibration ratings
- Spreader pads

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Electrical Characteristics

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</tr>
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<table>
<thead>
<tr>
<th>Contact Resistance —</th>
<th>Before Life — 100 milliohmns max. (measured @ 10 mA @ 6 Vdc)</th>
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<tbody>
<tr>
<td>After Life — 200 milliohmns max. (measured @ 1 A @ 28 Vdc)</td>
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| Mechanical Life Expectancy — | 1 million operations |

<table>
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<th>Coil Voltage —</th>
<th>5 to 26.5 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil Power —</td>
<td>370 mW max. @ 25°C</td>
</tr>
<tr>
<td>Duty Cycle —</td>
<td>Continuous</td>
</tr>
<tr>
<td>Pick-up Voltage —</td>
<td>Approximately 70% of Nominal Coil Voltage</td>
</tr>
<tr>
<td>Pick-up Sensitivity —</td>
<td>155 mW max. @ 25°C</td>
</tr>
</tbody>
</table>

Contact Ratings

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<th>Operations Min.</th>
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<td>250 mA @ 115 Vac, 60 Hz &amp; 400 Hz</td>
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<td>100,000</td>
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<tr>
<td>100 mA @ 115 Vac, 60 Hz &amp; 400 Hz</td>
<td>Resistive</td>
<td>100,000</td>
</tr>
<tr>
<td>0.2 A @ 28 Vdc</td>
<td>Inductive (0.32 Henry)</td>
<td>100,000</td>
</tr>
<tr>
<td>0.1A @ 28 Vdc</td>
<td>Lamp</td>
<td>100,000</td>
</tr>
<tr>
<td>30 µA @ 50 mVdc</td>
<td>Low Level</td>
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www.tycoelectronics.com

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### Double Pole, Electrically Held, 1 Amp and Less

**Operating Characteristics**
- **Operate Time**: 4.0 ms max.
- **Release Time**:
  - MSV: 2.0 ms max.
  - MSVD: 7.5 ms max.
  (suppression diode)
- **Contact Bounce**: 1.5 ms max.
- **Dielectric Withstanding Voltage**:
  - Between Open Contacts: 500 Vrms 60 Hz
  - Between Adjacent Contacts: 500 Vrms 60 Hz
  - Between Contacts and Coil: 500 Vrms 60 Hz
- **Insulation Resistance**:
  - 10,000 megohms min. @ 500 Vdc
  - 1,000 megohms @ 500 Vdc (coil to case at +125°C)

**Environmental Characteristics**
- **Temperature Range**: -65°C to +125°C
- **Weight**:
  - 0.09 oz. (2.55 grms)
  - 0.10 oz. (2.80 grms) with spreader pad attached
- **Vibration Resistance**:
  - 100 Gs, 10 - 2,000 Hz
  - 250 Gs, 140 +/- 5 Hz
  - 350 Gs, 170 +/- 5 Hz
  - 380 Gs, 200 +/- 5 Hz
- **Shock Resistance**:
  - 150 Gs, 11 ± 1ms max.

**Semiconductor Characteristics**
- **Diode**:
  - 100 Vdc peak inverse voltage (PIV)
  - 1.0 Vdc max. transient voltage

### Coil Data

<table>
<thead>
<tr>
<th>Nom. Coil Voltage (Vdc)</th>
<th>Coil Resistance in Ohms ±10% @ 25°C</th>
<th>Pickup Voltage Vdc (Max.) @ 25°C</th>
<th>Pickup Voltage Vdc (Max.) @ 125°C</th>
<th>Drop-Out Voltage Vdc (Min.) @ 25°C</th>
<th>Drop-Out Voltage Vdc (Min.) @ -65°C</th>
<th>Nom. Coil Power (mW) @ 25°C</th>
<th>Max. Coil Voltage</th>
<th>Nom. Coil Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSV / MSVD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0</td>
<td>80</td>
<td>3.5</td>
<td>4.6</td>
<td>0.22</td>
<td>0.14</td>
<td>313</td>
<td>5.8</td>
<td>5</td>
</tr>
<tr>
<td>6.0</td>
<td>120</td>
<td>4.0</td>
<td>5.5</td>
<td>0.28</td>
<td>0.18</td>
<td>300</td>
<td>8.0</td>
<td>6</td>
</tr>
<tr>
<td>9.0</td>
<td>240</td>
<td>5.9</td>
<td>8.2</td>
<td>0.54</td>
<td>0.35</td>
<td>338</td>
<td>12.0</td>
<td>9</td>
</tr>
<tr>
<td>12.0</td>
<td>480</td>
<td>8.0</td>
<td>11.0</td>
<td>0.63</td>
<td>0.41</td>
<td>300</td>
<td>16.0</td>
<td>12</td>
</tr>
<tr>
<td>18.0</td>
<td>950</td>
<td>11.9</td>
<td>16.5</td>
<td>0.91</td>
<td>0.59</td>
<td>341</td>
<td>24.0</td>
<td>18</td>
</tr>
<tr>
<td>26.5</td>
<td>1,900</td>
<td>15.9</td>
<td>22.0</td>
<td>1.37</td>
<td>0.89</td>
<td>370</td>
<td>32.0</td>
<td>26</td>
</tr>
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</table>

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<tr>
<td>MSV</td>
<td>C</td>
<td>D</td>
<td>G</td>
<td>-26</td>
<td>S</td>
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