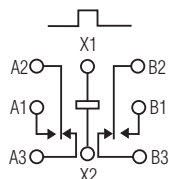


## Double Pole, Electrically Held, 1 Amp and Less (Continued)

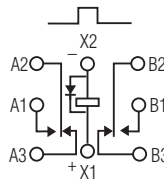
### MGS, MGSD, MGSDD

**MGS**  
Sensitive .100 Grid  
High Performance Relay  
Qualified to  
MIL-R-39016/41



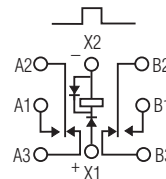
Terminal View

**MGSD**  
Sensitive .100 Grid  
Diode Suppressed  
High Performance Relay  
Qualified to  
MIL-R-39016/42



Terminal View

**MGSDD**  
Sensitive .100 Grid Diode  
Suppressed/Protected  
High Performance Relay  
Qualified to  
MIL-R-39016/43



Terminal View

#### Product Facts

- Hermetically sealed
- High shock & vibration ratings
- Mounting pads
- Excellent RF switching

#### Product Facts

- Suppression diode
- Hermetically sealed
- High shock & vibration ratings
- Mounting pads
- Excellent RF switching

#### Product Facts

- Suppression & protection diodes
- Hermetically sealed
- High shock & vibration ratings
- Mounting pads
- Excellent RF switching

#### Electrical Characteristics

**Contact Arrangement** —  
2 Form C (DPDT)

**Contact Material** —  
Stationary —  
Gold/platinum/palladium/silver  
(gold plated)  
Moveable —  
Gold/platinum/palladium/silver  
(gold plated)

**Contact Resistance** —  
Before Life — 100 milliohms max.  
(measured @ 10 mA @ 6 Vdc)  
After Life — 200 milliohms max.  
(measured @ 1 A @ 28 Vdc)

**Mechanical Life Expectancy** —  
1 million operations

**Coil Voltage** — 5 to 48 Vdc

**Coil Power** — 565 mW max. @ 25°C

**Duty Cycle** — Continuous

**Pick-up Voltage** — Approximately  
50% of nominal coil voltage

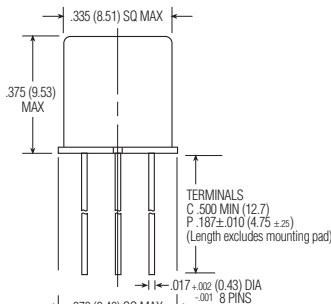
**Pick-up Sensitivity** —  
60 mW max. @ 25°C

#### Contact Ratings

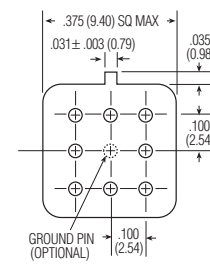
| Contact Load                     | Type                          | Operations Min. |
|----------------------------------|-------------------------------|-----------------|
| 1.0 A @ 28 Vdc                   | Resistive                     | 100,000         |
| 250 mA @ 115 Vac, 60 Hz & 400 Hz | Resistive (case not grounded) | 100,000         |
| 100 mA @ 115 Vac, 60 Hz & 400 Hz | Resistive                     | 100,000         |
| 0.2 A @ 28 Vdc                   | Inductive (0.32 Henry)        | 100,000         |
| 0.1 A @ 28 Vdc                   | Lamp                          | 100,000         |
| 30 µA @ 50 mVdc                  | Low Level                     | 1,000,000       |
| 0.1 A @ 28 Vdc                   | Intermediate Current          | 50,000          |



MGS



MGS/MGSD/MGSDD Enclosure



MGS/MGSD/MGSDD Header

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

### MGS, MGSD, MGSD

(Continued)

#### Operating Characteristics

##### Timing —

Operate Time — 4.0 ms max.

Release Time —

MGS — 2.0 ms max.

MGSD/MGSD — 7.5 ms max.

(suppression diode, protection/  
suppression diodes)

**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 &amp; Coil —

500 Vrms 60 Hz

##### **Insulation Resistance** —

10,000 megohms min. @ 500 Vdc

1,000 megohms @ 500 Vdc

(coil to case @ +125°C)

#### Environmental Characteristics

##### **Temperature Range** —

-65°C to +125°C

##### **Weight** —

0.09 oz. (2.55 gms)

0.129 oz. (3.45 gms) w/ mounting pad  
attached

##### **Vibration Resistance** —

30 G's, 10 to 3,000 Hz

##### **Shock Resistance** —

75 G's, 6 ±1 ms max.

##### **QPL Approval** —

MIL-R-39016/41 (JMGS)

MIL-R-39016/42 (JMGS)

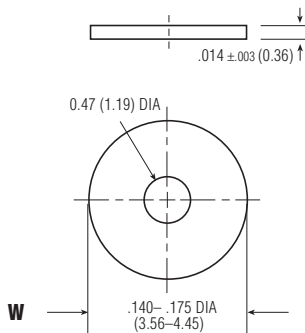
MIL-R-39016/43 (JMGS)

#### Semiconductor Characteristics

##### **Diode** —

100 Vdc peak inverse voltage (PIV)

1.0 Vdc max. transient voltage



MGS/MGSD/MGSD  
Mounting Pad

### Coil Data

| Nom. Coil Voltage (Vdc) | Coil Resistance in Ohms ±10% @ 25°C (Note) | Coil Circuit Current mA (Max.) (Note) | Coil Circuit Current mA (Min.) (Note) | Pickup Voltage Vdc (Max.) @ 25°C | Pickup Voltage Vdc (Max.) @ 125°C | Drop-Out Voltage Vdc (Min.) @ 25°C | Drop-Out Voltage Vdc (Min.) @ -65°C | Nom. Coil Power (mW) @ 25°C | Max. Coil Voltage | Coil Desig. |
|-------------------------|--------------------------------------------|---------------------------------------|---------------------------------------|----------------------------------|-----------------------------------|------------------------------------|-------------------------------------|-----------------------------|-------------------|-------------|
| MGSD/MGSD               |                                            |                                       |                                       |                                  |                                   |                                    |                                     |                             |                   |             |
| 5.0                     | 100                                        | n/a                                   | n/a                                   | 2.6                              | 3.5                               | 0.23                               | 0.12                                | 250                         | 7.5               | 5           |
| 6.0                     | 200                                        | n/a                                   | n/a                                   | 3.4                              | 4.5                               | 0.28                               | 0.18                                | 180                         | 10.0              | 6           |
| 9.0                     | 400                                        | n/a                                   | n/a                                   | 4.85                             | 6.8                               | 0.55                               | 0.35                                | 203                         | 15.0              | 9           |
| 12.0                    | 800                                        | n/a                                   | n/a                                   | 7.0                              | 9.0                               | 0.64                               | 0.41                                | 180                         | 20.0              | 12          |
| 18.0                    | 1,600                                      | n/a                                   | n/a                                   | 9.8                              | 13.5                              | 0.92                               | 0.59                                | 203                         | 30.0              | 18          |
| 26.5                    | 3,200                                      | n/a                                   | n/a                                   | 14.0                             | 18.0                              | 1.4                                | 0.89                                | 219                         | 40.0              | 26          |
| 36.0                    | 6,500                                      | n/a                                   | n/a                                   | 20.0                             | 27.0                              | 1.8                                | 1.25                                | 199                         | 57.0              | 36          |
| 48.0                    | 11,000                                     | n/a                                   | n/a                                   | 25.8                             | 36.0                              | 2.4                                | 1.60                                | 209                         | 75.0              | 48          |
| MGSD                    |                                            |                                       |                                       |                                  |                                   |                                    |                                     |                             |                   |             |
| 5.0                     | 64                                         | 78.1                                  | 56.8                                  | 2.9                              | 3.7                               | 0.8                                | 0.7                                 | 391                         | 7.5               | 5           |
| 6.0                     | 125                                        | 48.9                                  | 36.3                                  | 4.0                              | 4.8                               | 0.9                                | 0.8                                 | 288                         | 10.0              | 6           |
| 9.0                     | 400                                        | 23.6                                  | 18.1                                  | 6.1                              | 8.0                               | 1.1                                | 0.9                                 | 203                         | 15.0              | 9           |
| 12.0                    | 800                                        | 16.0                                  | 12.5                                  | 7.8                              | 11.0                              | 1.3                                | 1.0                                 | 180                         | 20.0              | 12          |
| 18.0                    | 1,600                                      | 12.2                                  | 9.6                                   | 11.3                             | 14.5                              | 1.5                                | 1.1                                 | 203                         | 30.0              | 18          |
| 26.5                    | 3,200                                      | 9.0                                   | 7.2                                   | 15.2                             | 19.0                              | 1.7                                | 1.3                                 | 219                         | 40.0              | 26          |
| 36.0                    | 6,500                                      | 6.1                                   | 4.9                                   | 21.7                             | 27.2                              | 2.3                                | 1.7                                 | 199                         | 57.0              | 36          |
| 48.0                    | 11,000                                     | 4.8                                   | 3.9                                   | 27.8                             | 34.8                              | 2.8                                | 2.0                                 | 209                         | 75.0              | 48          |

**Note:** Coil resistance not directly measurable. Coil current should be within limits shown when tested at nominal voltage at 25°C for 5 seconds max.

### Ordering Instructions

Catalog-selected Relays: The catalog number is derived by choosing the proper CODE for each of the relay characteristics in the order in which the codes are listed.

#### Specifying a Part Number Example:

| Type | Terminals | Diodes | Ground Pins | Coils | Mounting Pads |
|------|-----------|--------|-------------|-------|---------------|
| MGS  | C         | D      | G           | -26   | W             |

\* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.