# DSS7/MSS7/MVS7

## DIP 14 Series Reed Relays

www.cotorelay.com

## DESCRIPTION

Coto Technology's epoxy molded DIP 14 Series offers a variety of contacts and schematics to meet the needs of a wide range of applications. It features the MVS7 models designed for high reliability. The MSS7 DIPs are 1 form A relays equipped with the MYAD all-position mounting switch. With switching up to 50 Watts and a 4000V isolation option, the DIP 14 Series is a relay package that allows for automatic insertion directly on PCBs as well as insertion into standard 14 pin DIP sockets.

### FEATURES

- All position mercury contacts on some models
- Stable contact resistance over life
- 4000 Vac input-output isolation
- Bounce free operation
- High insulation resistance
- Switching speed of 300Hz
- Long life > 1 billion operations
- Epoxy molded for automatic board processing

### APPLICATIONS

- ATE
- Process control
- Industrial
- Telecom
- Datacom
- High-end security systems
- Signaling
- Metering

## SPECIFICATIONS

All parameters are at 25°C unless otherwise stated.

| Parameters | Conditions | DSS7 Molded 4-pin Dry Reed Min | DSS7 Typ | DSS7 Max | MSS7 Molded 4-pin All position Wetted Contacts Min | MSS7 Typ | MSS7 Max | MVS7 High Dielectric Strength DIP Wetted Contacts Min | MVS7 Typ | MVS7 Max | Units |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Contact Ratings** | | | | | | | | | | | |
| Switching Voltage | Max DC/PeakAC Resistive | | | 200 | | | 500 | | | 1000[1] | Volts |
| Switching Current | Max DC/PeakAC Resistive | | | 0.5 | | | 2 | | | 2 | Amps |
| Carry Current | Max DC/PeakAC Resistive | | | 2 | | | 3 | | | 3 | Amps |
| Contact Rating | Max DC/PeakAC Resistive | | | 10 | | | 50 | | | 50 | Watts |
| Life Expectancy | Singnal Level 1V, 10mA | 300 | 500 | | | 200 | | 1000 | | | x106 |
| | 50V, 1A | | | | | | | | 2 | | x106 |
| | 500V, 100mA | | | | | | | | 5 | | x106 |
| Static Contact Resistance | 50mV, 10mA | | | 150 | | 40 | 100 | | | 100 | mOhms |
| Contact Material | . | | Ru | | | Hg | | | Hg | | |
| Hg Content | | | | | | 16 | | | 40 | | mgrams |
| **Relay Specifications** | | | | | | | | | | | |
| Insulation Resistance | Between all isolated pins at 100V, 25°C, 40% RH | $10^{10}$ | $10^{12}$ | | $10^{8}$ | $10^{10}$ | | $10^{10}$ | $10^{12}$ | | Ohms |
| Capacitance | Across Open Contacts | | 0.7 | 1 | | 1.2 | 2 | | 0.7 | | pF |
| | Upper Contact to Coil | | | | | | | | 1.5 | | pF |
| | Closed Contact to Coil | | | | | | | | 2.5 | | pF |
| | Open Contact to Coil | | 1.5 | 2 | | 3 | 4 | | | | pF |
| Dielectric Strength | Between Contacts | 250 | | | 2000 | | | | | | VDC/PeakAC |
| | Open Contacts | | | | | | | 2000 | | | VDC/PeakAC |
| | Contacts to Coil | 5600 | | | 5600 | | | 5600 | | | VDC/PeakAC |
| Operate Time | At Nominal Coil Voltage | | 0.25 | 0.5 | | 1.2 | 1.75 | | 1.5 | 2.5 | ms |
| (including bounce, DSS7only) | 10Hz Square Wave | | | | | | | | | | |
| Release Time | Zener-Diode Suppression | | 0.25 | 0.5 | | 1 | 1.5 | | 1 | 2.5 | ms |
| **Enviromental Ratings** | | | | | | | | | | | |
| Storage Temperature | | -40 | | +105 | -40 | | +105 | -40 | | +105 | °C |
| Operating Temperature | | -38 | | +80 | -38 | | +75 | -38 | | +85 | °C |
| Soldering Temperature | Applied to pins, 5sec. max | | | +260 | | +260 | | | | +260 | °C |
| Vibration Resistance[2] (survival) | 10Hz - 500Hz | | | 20 | | | 10 | | | 10 | Gs |
| Shock Resistance (survival) | 11+/- 1ms, 1/2 Sine Wave | | | 100 | | | 30 | | | 30 | Gs |
| Weight | | | 1.5 | | | 2.3 | | | 2.1 | | grams |

[1] Current limited up to 5mA, minimum 20 million operations; for frurther information consult factory

2 Use caution not to exceed vibration resistance limits while ultrsonically cleaning relays with DYAD switches.

Details provided on this datasheet are subject to change without notice

# DSS7/MSS7/MVS7

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## COIL SPECIFICATIONS

| | Contact Form | Coil Voltage | | | Coil Resistance | | | Operate Voltage | | | | | | Nominal Input Power | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Units | | Volts | | | Ohms | | | Volts | | | Volts | | | mW | | |
| Conditions | | | | | +/- 10% (25°C) | | | Must operate by (25°C) | | | Must release by (25°C) | | | | | |
| Part # | | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max |
| DSS71A05 | 1 Form A | | 5 | 21 | 450 | 500 | 550 | 0.8 | | 3.75 | 0.8 | | 3.75 | | 50 | |
| DSS71A12 | 1 Form A | | 12 | 30 | 900 | 1000 | 1100 | 1 | | 9 | 1 | | 9 | | 144 | |
| DSS71A24 | 1 Form A | | 24 | 44 | 1935 | 2150 | 2365 | 2 | | 18 | 2 | | 18 | | 268 | |
| MSS71A05 | 1 Form A | | 5 | 11 | 126 | 140 | 154 | 0.5 | | 3.75 | 0.5 | | 3.75 | | 179 | |
| MSS71A12 | 1 Form A | | 12 | 21 | 450 | 500 | 550 | 1 | | 9 | 1 | | 9 | | 288 | |
| MSS71A24 | 1 Form A | | 24 | 43 | 1935 | 2150 | 2365 | 2 | | 18 | 2 | | 18 | | 268 | |
| MVS71A05(S) | 1 Form A | | 5 | 7 | 94.5 | 105 | 116 | 0.5 | | 3.75 | 0.5 | | 3.75 | | 238 | |
| MVS71A12(S) | 1 Form A | | 12 | 15 | 450 | 500 | 550 | 1 | | 9 | 1 | | 9 | | 288 | |
| MVS71A24(S | 1 Form A | | 24 | 30 | 1935 | 2150 | 2365 | 2 | | 18 | 2 | | 18 | | 268 | |

## ORDERING INFORMATION

A complete part number is represented by the digits below

XXXX XX XX X

Series
DSS7
MSS7
MVS7

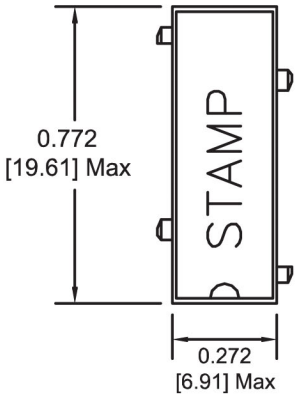
Contact Form
1A = 1 Form A (Normally open)

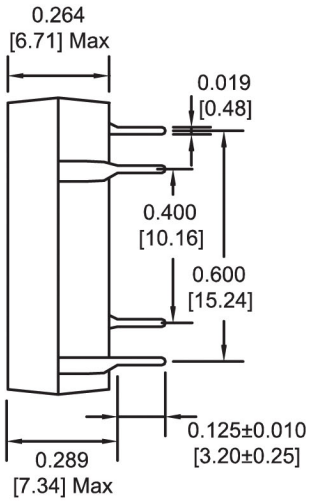
OPTIONS
A = ES Option
B = Diode Option
C = Shield & diode option
S = Modified pinout
(coil at 2&6, contact at 8 & 14)

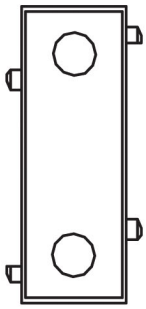
Coil Voltage
05 = 5V
12 = 12V
24 = 24V

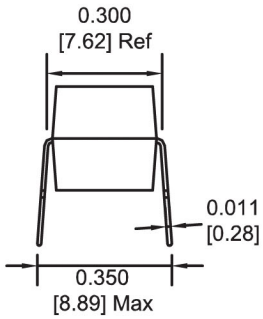
## MECHANICAL DIMENSIONS

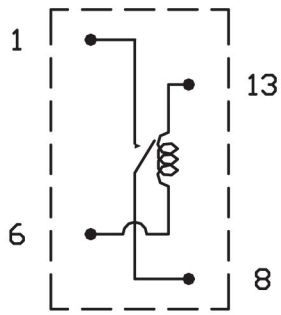
Dimensions in inches [mm]






WIRING DIAGRAM

MVS7 must be mounted veritcally. Pin #1 is up.

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