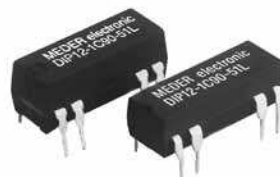


### DESCRIPTION

The DIP series is a very compact design having a low profile package and a high profile package. This series is compatible with all DIP relays.



### FEATURES

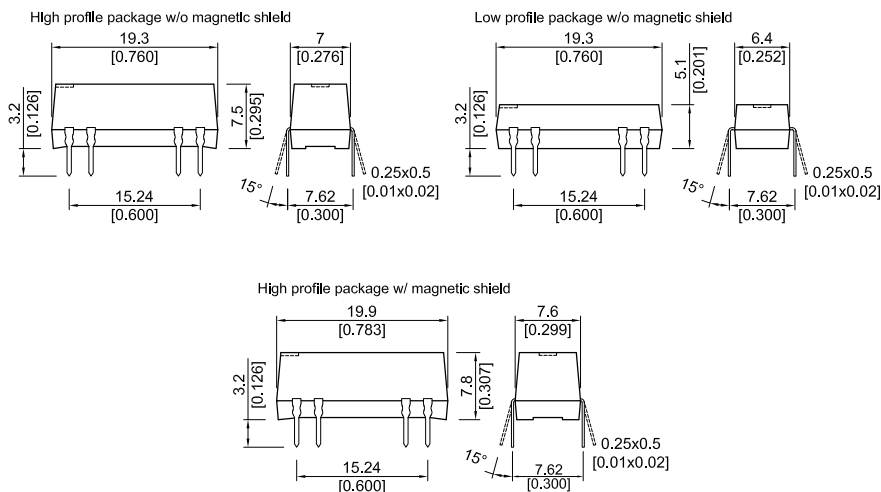
- High resistance option available
- Diode option available

### CHARACTERISTICS

- Low profile package
- Standard pin configurations
- IC-pin compatible
- 4.25 kVDC breakdown voltage for pin out 13
- UL approval

### DIMENSIONS

All dimensions in mm [inch]



## Molded DIP Reed Relays

### ORDER INFORMATION

| Series  | Nominal Voltage | Contact Form | Switch Model | Pin Out         | Option<br>( ) Version with magn. Shield |
|---------|-----------------|--------------|--------------|-----------------|-----------------------------------------|
| DIP     | XX -            | XX           | XX -         | XX              | X                                       |
| Options | 05, 12, 15, 24  | 1A           | 72, 75       | 10, 11, 12, 13* | A, B, C, L(M),<br>D(Q), E(R),<br>F(S)   |
|         |                 | 1B           | 72           | 13*, 19         |                                         |
|         |                 | 2A           | 72           | 21              |                                         |
|         | 05, 12, 15, 24  | 1C           | 90           | 51              |                                         |

\*Selects 4-25 (3.0 kVRMS) breakdown voltage contact to coil.

### Part Number Example

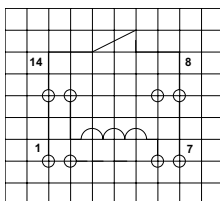
DIP12 - 1A75 - 13L

**12** is the nominal voltage  
**1A** is the contact form  
**75** is the switch model  
**13** is the pin out  
**L** is the option

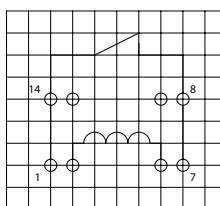
### PIN OUT

View from top of component, 2.54 mm [0.10"] pitch grid

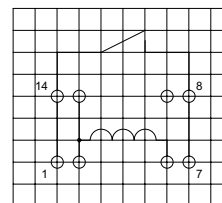
10



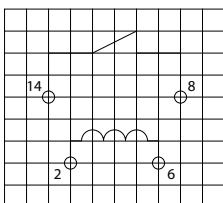
11



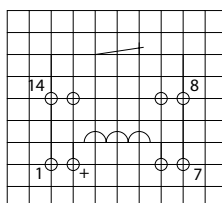
12



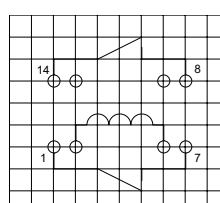
13



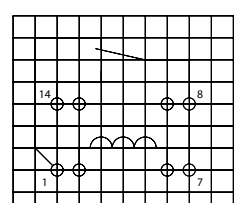
19



21



51



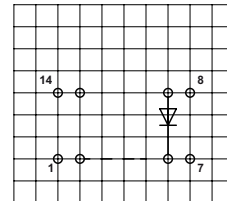
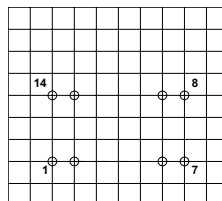
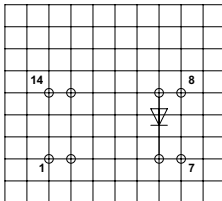
# OPTIONS

( ) Versions with magnetic shield, View from top of component, 2.54 mm [0.10"] pitch grid

A

B

C

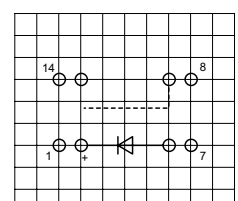
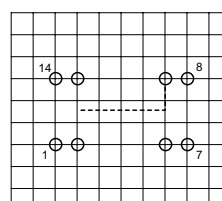
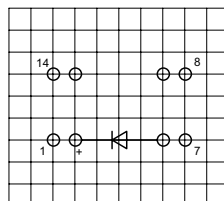
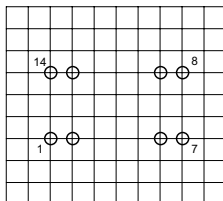


L (M)

D (Q)

E (R)

F (S)



# OPTIONS DEPENDENCE ON CASE SIZES

| Contact Form | Package Size | Pin Out | Options |   |   |   |   |   |   |   |   |   |   |
|--------------|--------------|---------|---------|---|---|---|---|---|---|---|---|---|---|
|              |              |         | L       | A | B | C | D | E | F | M | Q | R | S |
| 1A           | Low Profile  | 10      | x       | x | x | x |   |   |   |   |   |   |   |
|              |              | 11      | x       |   |   |   |   | x |   |   |   |   |   |
|              |              | 12      | x       | x |   |   |   |   |   |   |   |   |   |
|              |              | 13      | x       |   |   |   |   |   |   |   |   |   |   |
|              | High Profile | 10      |         |   |   | x |   |   |   |   |   |   |   |
|              |              | 11      |         |   |   |   | x |   | x | x | x |   | x |
|              |              | 12      |         |   |   |   | x | x | x |   |   |   |   |
| 1B           | High Profile | 19      | x       |   |   |   | x |   |   | x | x |   |   |
| 2A           | High Profile | 21      | x       | x |   |   | x | x | x | x | x | x | x |
| 1C           | Low Profile  | 51      | x       |   |   |   |   |   |   |   |   |   |   |
|              | High Profile |         |         |   |   |   | x | x | x | x | x | x | x |

L = No option

A = Diode between Pin 6 and Pin 9 (Pin 6 is positive)

B = Internal shield on Pin 2.

C = Diode between Pin 6 and Pin 9 (Pin 6 is positive and internal shield on Pin 2)

D = With Diode between pin 2 and 6 (Pin 2 is positive)

E = Internal shield on pin 9

F = With Diode between pin 2 and 6 (Pin 2 is positive) and Internal shield on pin 9

M = External magnetic shield

Q = External magnetic shield and diode between pin 2 and 6 (Pin 2 is positive)

R = External magnetic shield and internal shield on pin 9

S = External magnetic shield and with diode between pin 2 and 6 (Pin 2 is positive) and internal shield on pin 9

**Molded DIP  
Reed Relays**
**RELAY DATA**

| All Data at 20° C                                                                                                                    | Switch Model →<br>Contact Form →                                  | Switch 72<br>Form A / B              |            |      | Switch 75<br>Form A                  |            |      | Switch 90<br>Form C                 |            |      |                           |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------|------------|------|--------------------------------------|------------|------|-------------------------------------|------------|------|---------------------------|
| Contact Ratings                                                                                                                      | Conditions                                                        | Min.                                 | Typ.       | Max. | Min.                                 | Typ.       | Max. | Min.                                | Typ.       | Max. | Unit                      |
| Switching Power                                                                                                                      | Any DC combination of V & A not to exceed their individual max.'s |                                      |            | 10   |                                      |            | 10   |                                     |            | 10   | W                         |
| Switching Voltage                                                                                                                    | DC or peak AC                                                     |                                      |            | 200  |                                      |            | 500  |                                     |            | 100  | V                         |
| Switching Current                                                                                                                    | DC or peak AC                                                     |                                      |            | 0.5  |                                      |            | 0.5  |                                     |            | 0.2  | A                         |
| Carry Current                                                                                                                        | DC or peak AC                                                     |                                      |            | 1.0  |                                      |            | 1.0  |                                     |            | 0.5  | A                         |
| Static Contact Resistance                                                                                                            | w/ 0.5 V & 10mA                                                   |                                      |            | 150  |                                      |            | 200  |                                     |            | 150  | mΩ                        |
| Dynamic Contact Resistance                                                                                                           | Measured w/ 0.5 V & 50mA ,<br>1.5 ms after closure                |                                      |            | 200  |                                      |            | 200  |                                     |            | 200  | mΩ                        |
| Insulation Resistance across Contacts                                                                                                | 100 volts applied                                                 | 10 <sup>12</sup><br>10 <sup>12</sup> |            |      | 10 <sup>12</sup><br>10 <sup>12</sup> |            |      | 10 <sup>9</sup><br>10 <sup>12</sup> |            |      | Ω                         |
| Breakdown Voltage across Contact                                                                                                     | Across contacts<br>Contact to coil                                | 500<br>1500**                        |            |      | 1500*<br>1500**                      |            |      | 150<br>1500                         |            |      | VDC                       |
| Operate Time incl. Bounce                                                                                                            | Measured w/ 100 % overdrive                                       |                                      |            | 0.5  |                                      |            | 0.5  |                                     |            | 2.0  | ms                        |
| Release Time                                                                                                                         | Measured w/ no coil suppression                                   |                                      |            | 0.1  |                                      |            | 0.1  |                                     |            | 2.0  | ms                        |
| Capacitance                                                                                                                          | at 10 kHz cross contact                                           |                                      | 0.2<br>2.0 |      |                                      | 0.4<br>2.0 |      |                                     | 1.5<br>0.3 |      | pF                        |
| <b>Life Expectancies</b>                                                                                                             |                                                                   |                                      |            |      |                                      |            |      |                                     |            |      |                           |
| Switching 5 V - 10 mA                                                                                                                | DC only & <10 pF stray cap.                                       |                                      | 1000       |      |                                      | 500        |      |                                     | 100        |      | 10 <sup>6</sup><br>Cycles |
| For other load requirements, see the life test section on P. 120.                                                                    |                                                                   |                                      |            |      |                                      |            |      |                                     |            |      |                           |
| <b>Environmental Data</b>                                                                                                            |                                                                   |                                      |            |      |                                      |            |      |                                     |            |      |                           |
| Shock Resistance                                                                                                                     | 1/2 sinus wave duration 11 ms                                     |                                      |            | 50   |                                      |            | 50   |                                     |            | 50   | g                         |
| Vibration Resistance                                                                                                                 | From 10 - 2000 Hz                                                 |                                      |            | 20   |                                      |            | 20   |                                     |            | 20   | g                         |
| Ambient Temperature                                                                                                                  | 10°C/ minute max. allowable                                       | -20                                  |            | 70   | -20                                  |            | 70   | -20                                 |            | 70   | °C                        |
| Stock Temperature                                                                                                                    | 10°C/ minute max. allowable                                       | -35                                  |            | 95   | -35                                  |            | 95   | -35                                 |            | 95   | °C                        |
| Soldering Temperature                                                                                                                | 5 sec.                                                            |                                      |            | 260  |                                      |            | 260  |                                     |            | 260  | °C                        |
| * 600 VDC with 5V coil, 1000 VDC with 12V coil.<br>** Selects Pin out 13 and 425 kVDC (3.0 kVRMS) breakdown voltage contact to coil. |                                                                   |                                      |            |      |                                      |            |      |                                     |            |      |                           |

## COIL DATA

| Contact Form      | Switch Model | Coil Voltage |      | Coil Resistance |              |              | Pull-in Voltage | Drop-out Volage | Nominal Coil Powe |
|-------------------|--------------|--------------|------|-----------------|--------------|--------------|-----------------|-----------------|-------------------|
| All Data at 20 °C |              | VDC          |      | Ω               |              |              | VDC             | VDC             | mW                |
|                   |              | Nom.         | Max. | Min.            | Typ.         | Max.         | Max.            | Min.            | Typ.              |
| 1A                | 72<br>75     | 5            | 7.5  | 450<br>(180)    | 500<br>(200) | 550<br>(220) | 3.5             | 0.75            | 50                |
|                   |              | 12           | 16   | 900             | 1000         | 1100         | 8.4             | 1.8             | 145               |
|                   |              | 15           | 20   | 1800            | 2000         | 2200         | 10.5            | 2.2             | 115               |
|                   |              | 24           | 30   | 1800            | 2000         | 2200         | 16.8            | 3.6             | 290               |
| 1B **             | 72           | 5            | 7.5  | 450             | 500          | 550          | 3.5             | 0.75            | 50                |
|                   |              | 12           | 16   | 900             | 1000         | 1100         | 8.4             | 1.8             | 145               |
|                   |              | 15           | 20   | 1800            | 2000         | 2200         | 10.5            | 2.2             | 115               |
|                   |              | 24           | 30   | 1800            | 2000         | 2200         | 16.8            | 3.6             | 290               |
| 2A                | 72           | 5            | 7.5  | 180             | 200          | 220          | 3.5             | 0.75            | 125               |
|                   |              | 12           | 16   | 450             | 500          | 550          | 8.4             | 1.8             | 290               |
|                   |              | 15           | 20   | 1800            | 2000         | 2200         | 10.5            | 2.2             | 115               |
|                   |              | 24           | 30   | 1800            | 2000         | 2200         | 16.8            | 3.6             | 290               |
| 1C                | 90           | 5            | 7.5  | 180             | 200          | 220          | 3.5             | 0.75            | 125               |
|                   |              | 12           | 16   | 450             | 500          | 550          | 8.4             | 1.8             | 290               |
|                   |              | 15           | 20   | 1800            | 2000         | 2200         | 10.5            | 2.2             | 115               |
|                   |              | 24           | 30   | 1800            | 2000         | 2200         | 16.8            | 3.6             | 290               |

( ) For Switch 75.

\* The pull-in / drop-out voltage and coil resistance will change at rate of 0.4% per °C.

\*\* Re-closure of Form B may occur if the max. coil voltage is exceeded. Coil polarity on Form B must be observed. Pin 2 is positive.