

MINIATURE RELAY

2 POLES (HIGH FREQUENCY SIGNAL SWITCHING)

UR1 SERIES

■ FEATURES

- Subminiature polarized relay
- Excellent high frequency characteristics
 - Isolation : minimum 60 dB
 - Insertion loss: maximum 1 dB
 - V.S.W.R. : maximum 1.2
 } at 900 MHz
 (Impedance of the measuring devices is 75Ω)
- High reliability—Bifurcated contacts
- Wide operating range
- DIL pitch terminals
- Plastic sealed type backfilled with nitrogen
- Latching type available



■ ORDERING INFORMATION

[Example] UR1 L – D 12 W – K
 (a) (b) (c) (d) (e) (f)

| | | |
|-----|--------------------|--|
| (a) | Series Name | UR1: UR1 series |
| (b) | Operation Function | Nil : Standard type L : Latching type |
| (c) | Number of Coil | Nil : Single winding type D : Double winding type |
| (d) | Nominal Voltage | Refer to the COIL DATA CHART |
| (e) | Contact | W : Bifurcated type |
| (f) | Enclosure | K : Plastic sealed type |

UR1 SERIES

■ SPECIFICATIONS

| Item | | Standard Type | Single Winding Latching Type | Double Winding Latching Type |
|--|------------------------------|--|---|------------------------------|
| | | UR1-() W-K | UR1L-() W-K | UR1L-D () W-K |
| Contact | Arrangement | 2 form C (DPDT) | | |
| | Material | Gold clad (stationary contact), gold plate (movable contact) | | |
| | Style | Bifurcated | | |
| | Resistance (initial) | Maximum 100 mΩ | | |
| | Rating (resistive) | 10 mA 24 VDC 1 W (at 900 MHz) | | |
| | Maximum Carrying Current | 0.5 A | | |
| | Maximum Switching Power | 1 W (DC) 10 W (at 900 MHz) | | |
| | Maximum Switching Voltage | 30 VDC | | |
| | Maximum Switching Current | 100 mA | | |
| | Minimum Switching Load*1 | 0.01 mA 10 mVDC | | |
| Excellent High Frequency Characteristics | Isolation | Minimum 60 dB(at 900 MHz), impedance of the measuring devices is 75Ω | | |
| | Insertion Loss | Maximum 1 dB(at 900 MHz), impedance of the measuring devices is 75Ω | | |
| | V.S.W.R. | Maximum 1.2(at 900 MHz), impedance of the measuring devices is 75Ω | | |
| Coil | Nominal Power (at 20°C) | 0.36 to 0.43 W | 0.25 W | 0.5 to 0.55 W |
| | Operate Power (at 20°C) | 0.18 to 0.2 W | 0.125 W | 0.25 to 0.27 W |
| | Operating Temperature | -30°C to +80°C no frost) | | -30°C to +70°C (no frost) |
| Time Value | Operate (at nominal voltage) | Maximum 6 ms | Maximum 6 ms (set) | |
| | Release (at nominal voltage) | Maximum 4 ms | Maximum 6 ms (reset) | |
| Insulation | Resistance (at 500 VDC) | | Minimum 1,000 MΩ | |
| | Dielectric Strength | between open contacts between contacts and shield terminals | 500 VAC 1 minute | |
| | | between coil and contacts between coil and shield terminals | 1,000 VAC 1 minute | |
| Life | Mechanical | | 1 × 10 ⁶ operations minimum | |
| | Electrical | | 3 × 10 ⁵ operations minimum (contact rating) | |
| Other | Vibration Resistance | Misoperation | 10 to 55 Hz (double amplitude of 3.3 mm) | |
| | | Endurance | 10 to 55 Hz (double amplitude of 5.0 mm) | |
| | Shock Resistance | Misoperation | 500 m/s ² (11 ±1 ms) | |
| | | Endurance | 1,000 m/s ² (6 ±1 ms) | |
| | Weight | | Approximately 7 g | |

*1 Minimum switching loads mentioned above are reference values. Please perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

UR1 SERIES

■ COIL DATA CHART

| MODEL | | Nominal voltage | Coil resistance (±10%) | Must operate voltage*1 | Must release voltage*1 | Nominal power |
|---------------|--------------|-----------------|------------------------|------------------------|------------------------|---------------|
| Standard Type | UR1- 1.5 W-K | 1.5 VDC | 5.3Ω | +1.05 VDC | +0.08 VDC | 425 mW |
| | UR1- 3 W-K | 3 VDC | 25 Ω | +2.1 VDC | +0.15 VDC | 360 mW |
| | UR1- 4.5 W-K | 4.5 VDC | 56.3Ω | +3.15 VDC | +0.23 VDC | 360 mW |
| | UR1- 5 W-K | 5 VDC | 69.5Ω | +3.5 VDC | +0.25 VDC | 360 mW |
| | UR1- 6 W-K | 6 VDC | 100 Ω | +4.2 VDC | +0.3 VDC | 360 mW |
| | UR1- 9 W-K | 9 VDC | 225 Ω | +6.3 VDC | +0.45 VDC | 360 mW |
| | UR1- 12 W-K | 12 VDC | 400 Ω | +8.4 VDC | +0.6 VDC | 360 mW |
| | UR1- 18 W-K | 18 VDC | 900 Ω | +12.6 VDC | +0.9 VDC | 360 mW |
| | UR1- 24 W-K | 24 VDC | 1,600 Ω | +16.8 VDC | +1.2 VDC | 360 mW |
| | UR1- 48 W-K | 48 VDC | 5,900 Ω | +33.6 VDC | +2.4 VDC | 390 mW |

Note: *1 Specified values are subject to pulse wave voltage.
All values in the table are measured at 20°C.

NOT FOR NEW DESIGNS

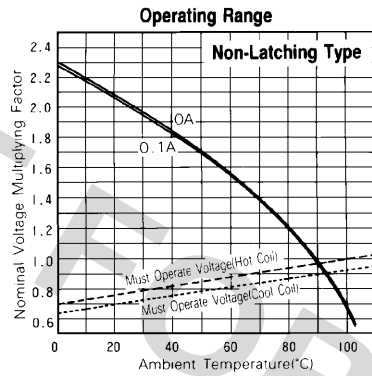
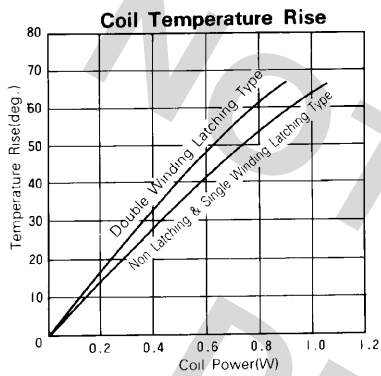
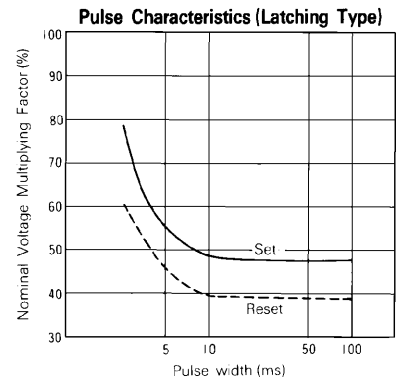
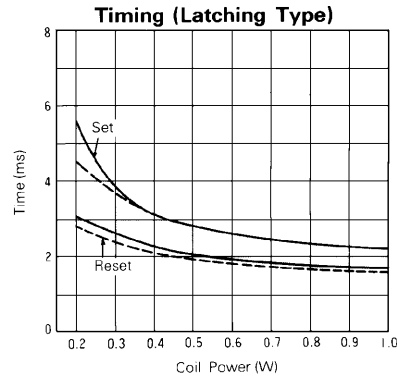
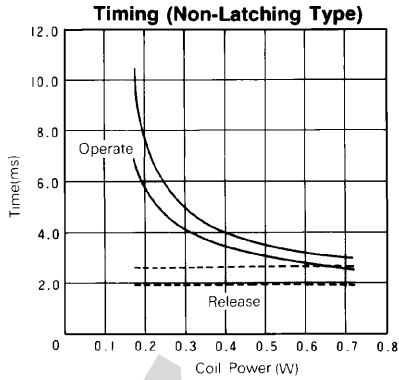
UR1 SERIES

| MODEL | | Nominal Voltage | Coil Resistance ($\pm 10\%$) | Set Voltage* ¹ | Reset Voltage* ¹ | Nominal Power |
|------------------------------|----------------|------------------|--------------------------------|---------------------------|-----------------------------|---------------|
| Single Winding Latching Type | UR1L- 1.5 W-K | 1.5 VDC | 9 Ω | +1.05 VDC | -1.05 VDC | 250 mW |
| | UR1L- 3 W-K | 3 VDC | 36 Ω | +2.1 VDC | -2.1 VDC | 250mW |
| | UR1L- 4.5 W-K | 4.5 VDC | 80 Ω | +3.15 VDC | -3.15 VDC | 250 mW |
| | UR1L- 5 W-K | 5 VDC | 100 Ω | +3.5 VDC | -3.5 VDC | 250 mW |
| | UR1L- 6 W-K | 6 VDC | 144 Ω | +4.2 VDC | -4.2 VDC | 250 mW |
| | UR1L- 9 W-K | 9 VDC | 324 Ω | +6.3 VDC | -6.3 VDC | 250 mW |
| | UR1L- 12 W-K | 12 VDC | 576 Ω | +8.4 VDC | -8.4 VDC | 250 mW |
| | UR1L- 18 W-K | 18 VDC | 1,296 Ω | +12.6 VDC | -12.6 VDC | 250 mW |
| | UR1L- 24 W-K | 24 VDC | 2,304 Ω | +16.8 VDC | -16.8 VDC | 250 mW |
| | UR1L- 48 W-K | 48 VDC | 9,216 Ω | +33.6 VDC | -33.6 VDC | 250 mW |
| Double Winding Latching Type | UR1L-D 1.5 W-K | 1.5 VDC | P 4.5 Ω | +1.05 VDC | | 500 mW |
| | | | S 4.5 Ω | | +1.05 VDC | |
| | UR1L-D 3 W-K | 3 VDC | P 18 Ω | +2.1 VDC | | 500 mW |
| | | | S 18 Ω | | +2.1 VDC | |
| | UR1L-D 4.5 W-K | 4.5 VDC | P 40.5 Ω | +3.15 VDC | | 500 mW |
| | | | S 40.5 Ω | | +3.15 VDC | |
| | UR1L-D 5 W-K | 5 VDC | P 50 Ω | +3.5 VDC | | 500 mW |
| | | | S 50 Ω | | +3.5 VDC | |
| | UR1L-D 6 W-K | 6 VDC | P 72 Ω | +4.2 VDC | | 500 mW |
| | | | S 72 Ω | | +4.2 VDC | |
| | UR1L-D 9 W-K | 9 VDC | P 162 Ω | +6.3 VDC | | 500 mW |
| | | | S 162 Ω | | +6.3 VDC | |
| | UR1L-D 12 W-K | 12 VDC | P 288 Ω | +8.4 VDC | | 500 mW |
| | | | S 288 Ω | | +8.4 VDC | |
| | UR1L-D 18 W-K | 18 VDC | P 648 Ω | +12.6 VDC | | 500 mW |
| | | | S 648 Ω | | +12.6 VDC | |
| | UR1L-D 24 W-K | 24 VDC | P 1,152 Ω | +16.8 VDC | | 500 mW |
| | | | S 1,152 Ω | | +16.8 VDC | |
| UR1L-D 48 W-K | 48 VDC | P 4,189 Ω | +33.6 VDC | | 550 mW | |
| | | S 4,189 Ω | | +33.6 VDC | | |

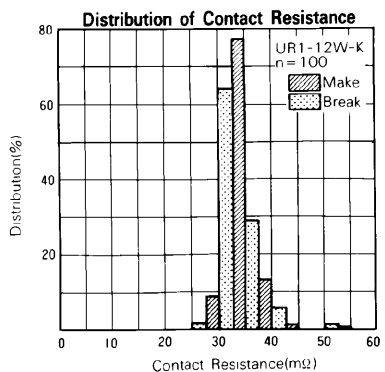
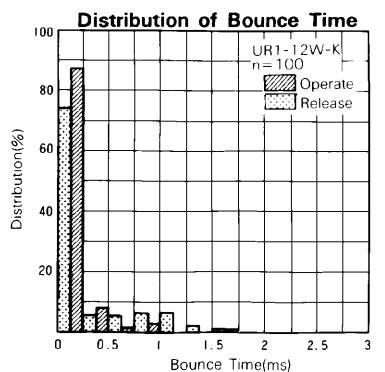
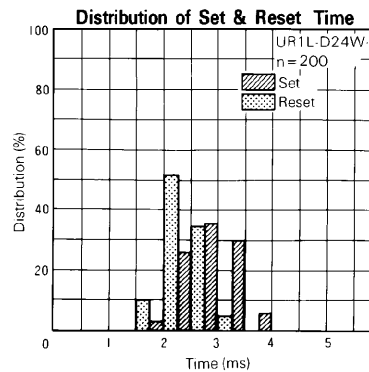
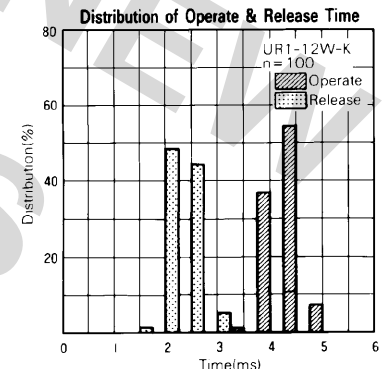
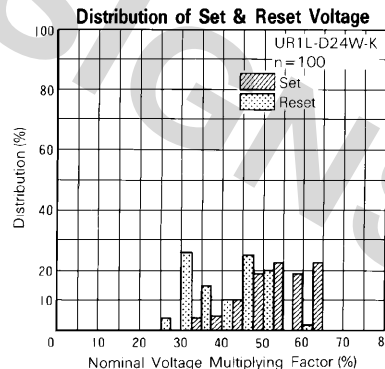
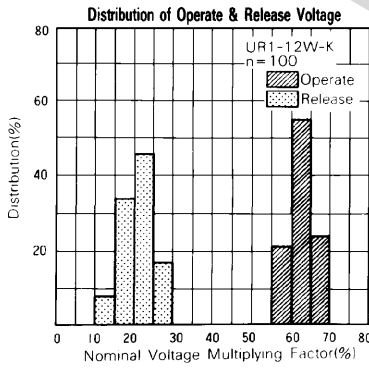
Note: *¹ Specified values are subject to pulse wave voltage.
All values in the table are measured at 20°C.

P: Primary coil S: Secondary coil

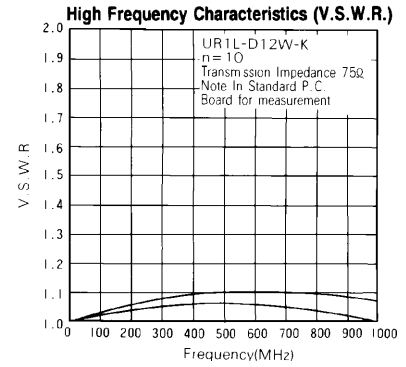
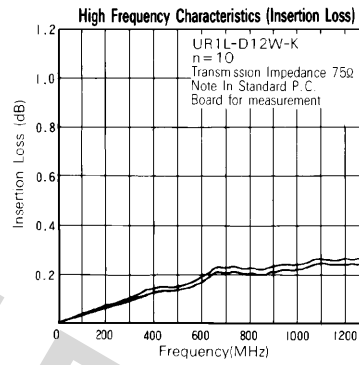
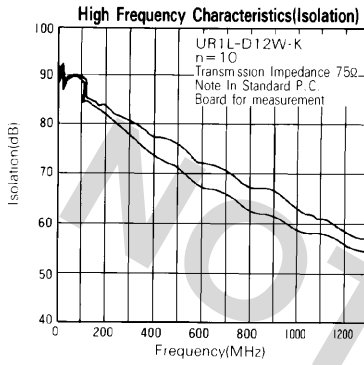
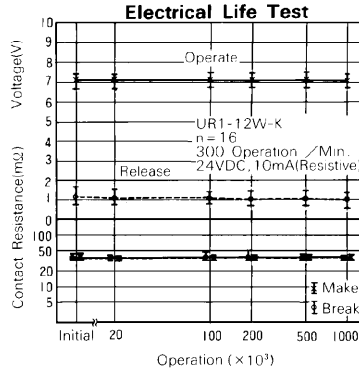
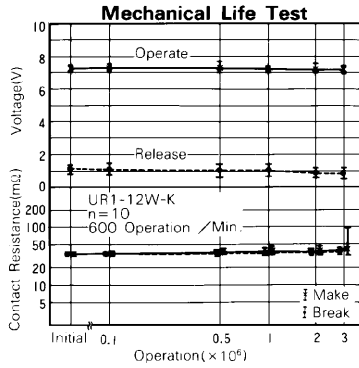
CHARACTERISTIC DATA



REFERENCE DATA



UR1 SERIES



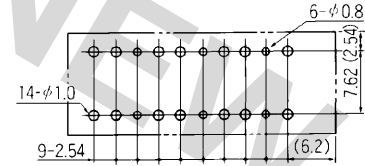
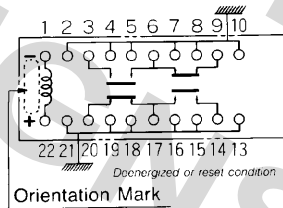
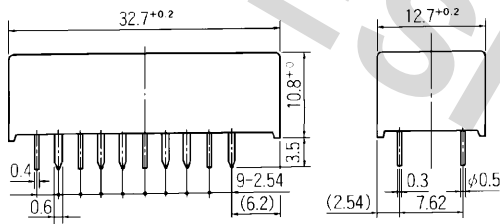
■ DIMENSIONS

● Dimensions

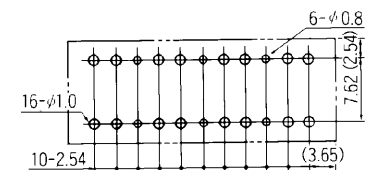
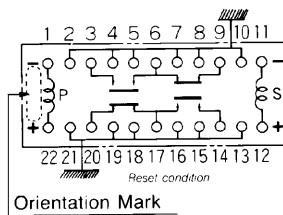
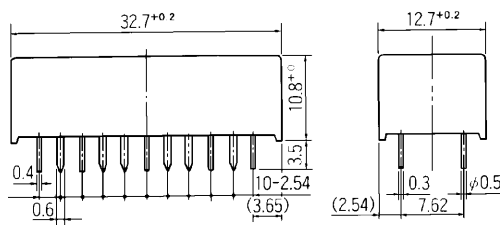
● Schematics (BOTTOM VIEW)

● PC board mounting hole layout (BOTTOM VIEW)

UR1, UR1L, type (Non-latching type, Single winding latching type)



UR1L-D type (Double winding latching type)



Unit: mm

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