



## DESCRIPTION

The M212 is a bi-directional, single-pole, single-throw, normally closed multipurpose solid-state relay in a miniature 4-pin small outline package. It is designed to replace electromechanical relays in general purpose switching applications. The relay consists of an integrated circuit that drives two rugged source-to-source depletion type DMOS transistors - optically coupled to a light emitting diode. The output MOS transistors are protected with free-wheeling diodes that can handle up to 1.5A of inrush current, making the relay ideal for switching lamps and highly inductive loads.

## FEATURES

- High input-to-output isolation
- Low input control power consumption
- 100mA maximum continuous load current
- 35 ohms maximum on-resistance
- Long life/high reliability
- Ultra miniature 4-pin small outline package

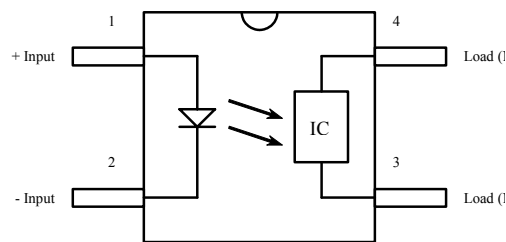
## APPLICATIONS

- Telecom switching
- Tip/Ring control
- PCMCIA modules
- Multiplexers
- Meter reading systems
- Data acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

## OPTIONS/SUFFIXES

- -TR Tape and Reel

## SCHEMATIC DIAGRAM



## MAXIMUM RATINGS

| PARAMETER                     | UNIT | MIN | TYP | MAX |
|-------------------------------|------|-----|-----|-----|
| Storage Temperature           | °C   | -55 |     | 125 |
| Operating Temperature         | °C   | -40 |     | 85  |
| Continuous Input Current      | mA   |     |     | 40  |
| Transient Input Current       | mA   |     |     | 400 |
| Reverse Input Control Voltage | V    | 6   |     |     |
| Output Power Dissipation      | mW   |     |     | 400 |

## APPROVALS

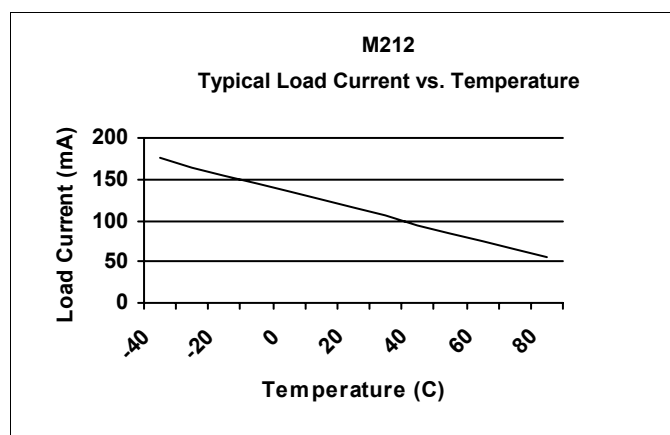
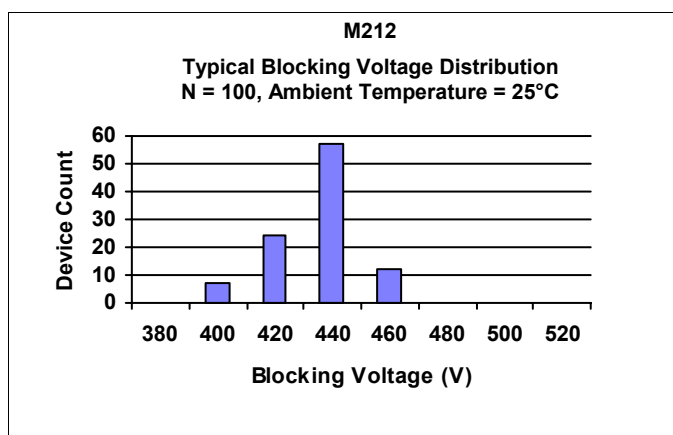
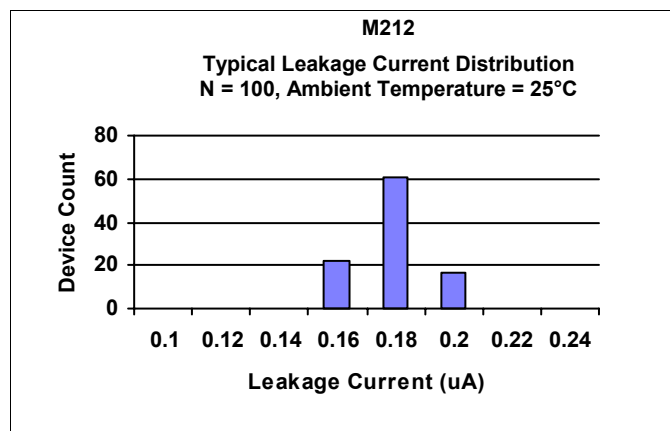
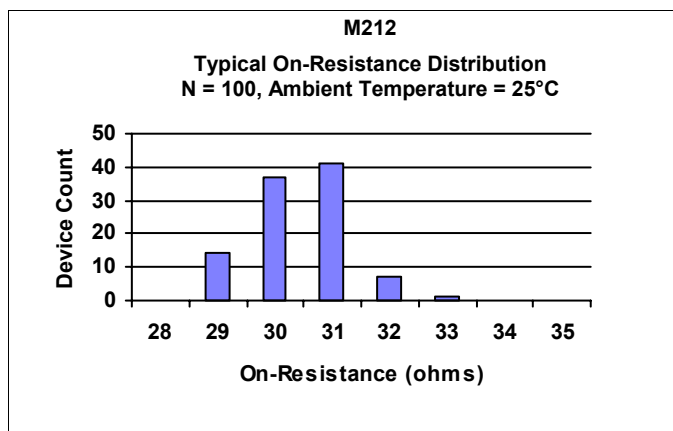
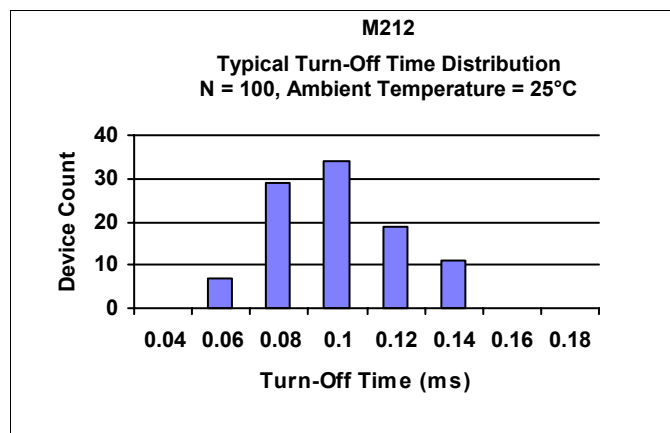
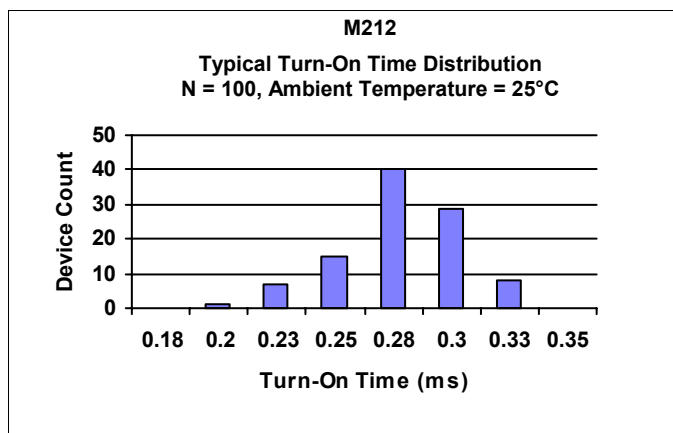
- BABT CERTIFICATE #650192:  
BS EN 60950, BS EN 41003, BS EN 60065


**ELECTRICAL CHARACTERISTICS - 25°**

| PARAMETER                     | UNIT    | MIN  | TYP  | MAX | TEST CONDITIONS      |
|-------------------------------|---------|------|------|-----|----------------------|
| <b>INPUT SPECIFICATIONS</b>   |         |      |      |     |                      |
| LED Forward Voltage           | V       |      | 1.2  | 1.5 | If = 10mA            |
| LED Reverse Voltage           | V       | 6    | 12   |     | Ir = 10uA            |
| Turn-On Current               | m A     |      | 0.5  |     | Io = 100mA           |
| Turn-Off Current              | m A     |      | 2.5  | 5   |                      |
| <b>OUTPUT SPECIFICATIONS</b>  |         |      |      |     |                      |
| Blocking Voltage              | V       | 400  |      |     | Io = 10uA            |
| Continuous Load Current       | m A     |      |      | 100 | If = 0mA             |
| On-Resistance                 | Ω       |      | 25   | 35  | Io = 100mA           |
| Leakage Current               | μ A     |      | 0.2  | 10  | Vo = 400V            |
| Output Capacitance            | p F     |      | 25   | 50  | Vo = 25V, f = 1.0MHz |
| Offset Voltage                | m V     |      |      | 0.2 | If = 0mA             |
| <b>COUPLED SPECIFICATIONS</b> |         |      |      |     |                      |
| Isolation Voltage             | V       | 1500 |      |     | T = 1 minute         |
| Turn-On Time                  | m s     |      | 0.1  | 0.5 | If = 0mA, Io = 100mA |
| Turn-Off Time                 | m s     |      | 0.5  | 1   | If = 5mA, Io = 100mA |
| Isolation Resistance          | G Ω     | 100  |      |     |                      |
| Coupled Capacitance           | p F     |      | 3    |     |                      |
| Contact Transient Ratio       | V / μ s | 2000 | 7000 |     | dV = 50V             |



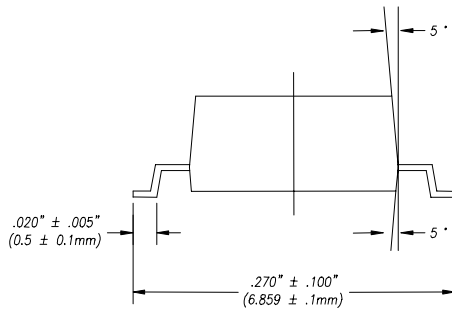
## PERFORMANCE DATA



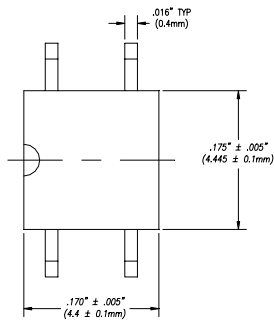


## MECHANICAL DIMENSIONS

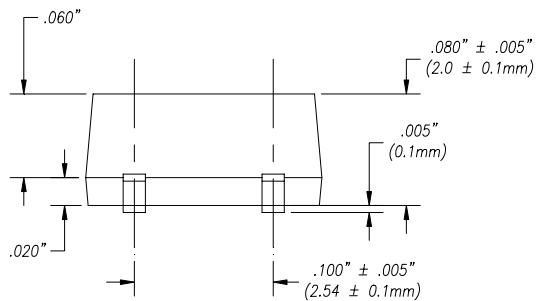
### 4 PIN SMALL OUTLINE PACKAGE



END VIEW



TOP VIEW



BACK VIEW