



1 Form A  
Solid State Relay

## DESCRIPTION

The M211 is a bi-directional, single-pole, single-throw, normally open 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 enhancement 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

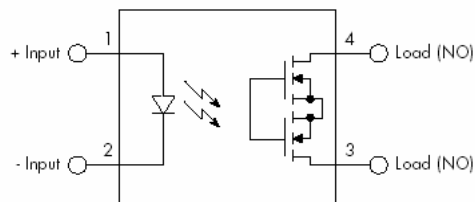
- Ultra miniature 4-pin small outline package
- Low input control power consumption (2.5mA TYP)
- 120mA maximum continuous load current
- 30 ohms maximum on-resistance
- High Input-Output Isolation (1.5kV MIN)
- Long life/high reliability

## OPTIONS/SUFFIXES\*

- -TR Tape and Reel

NOTE: Suffixes listed above are not included in marking on device for part number identification.

## SCHEMATIC DIAGRAM



## APPLICATIONS

- Multiplexers
- Meter reading systems
- Data Acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

## ABSOLUTE MAXIMUM RATINGS\*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-40		85
Continuous Forward Current	mA			50
Peak Forward Current (1us)	A			1
Reverse Input Control Voltage	V			5
Output Power Dissipation	mW			400

\*The values indicated are absolute stress ratings. Functional operation of the device is not implied at these or any conditions in excess of those defined in electrical characteristics section of this document. Exposure to Absolute Ratings may cause permanent damage to the device and may adversely affect reliability.

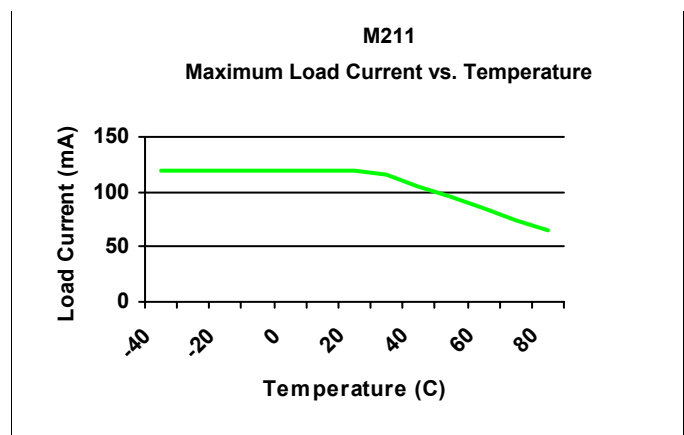
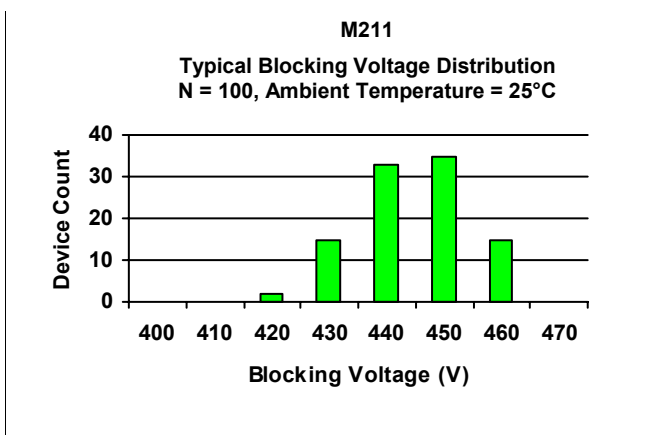
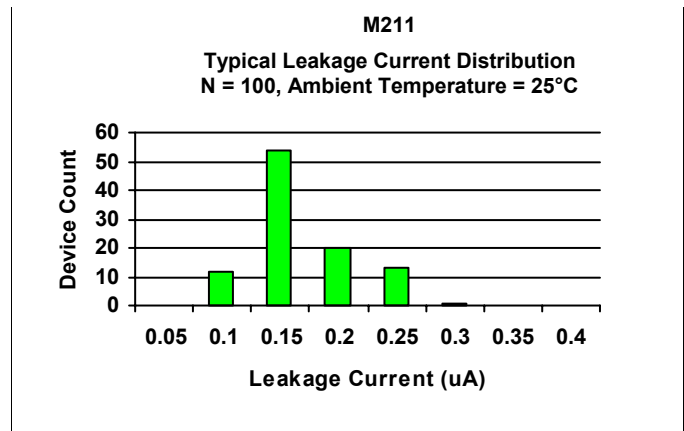
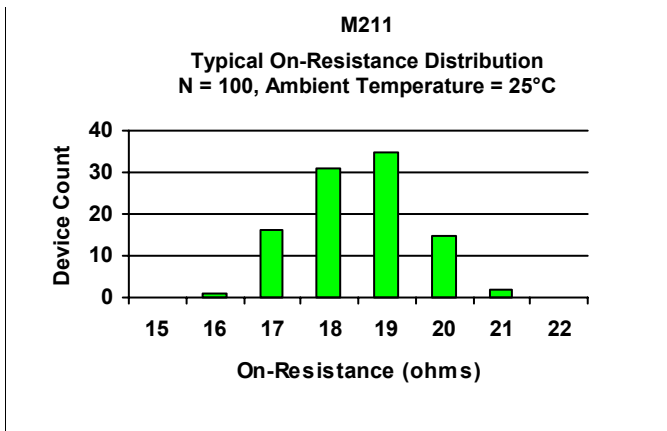
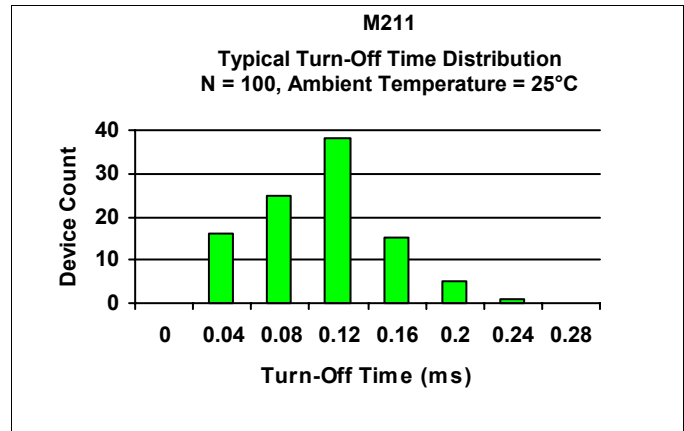
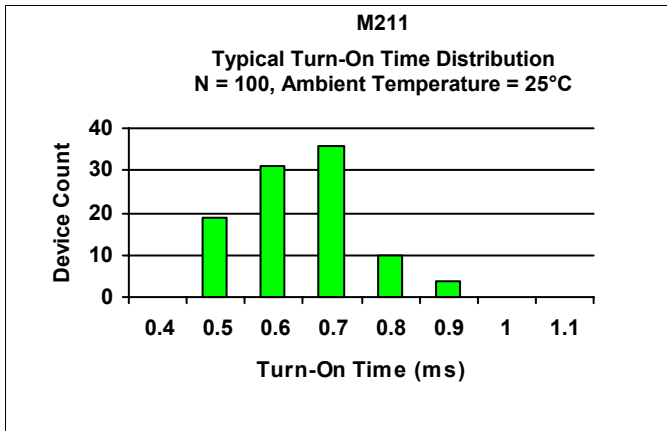
## APPROVALS

- BAPT CERTIFICATE #650192:  
BS EN 60950, BS EN 41003, BS EN 60065
- UL / C-UL File #E201932

## ELECTRICAL CHARACTERISTICS - 25°C

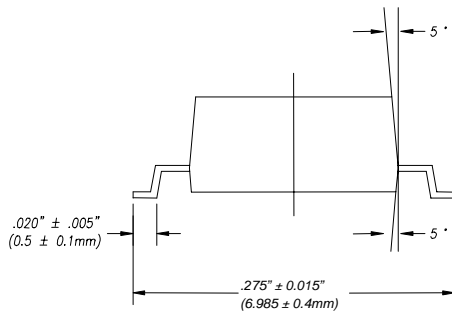
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
<b>INPUT SPECIFICATIONS</b>					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current	m A		2.5	5	Io = 100mA
Turn-Off Current	m A		0.5		
<b>OUTPUT SPECIFICATIONS</b>					
Blocking Voltage	V	400			Io = 1uA
Continuous Load Current	m A			120	If = 5mA
On-Resistance	$\Omega$		18	30	Io = 100mA
Leakage Current	$\mu$ A		0.2	1	Vo = 400V
Output Capacitance	p F		25	50	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	If = 5mA
<b>COUPLED SPECIFICATIONS</b>					
Isolation Voltage	V	1500			T = 1 minute
Turn-On Time	m s		0.7	1	If = 5mA, Io = 100mA
Turn-Off Time	m s		0.1	1.5	If = 5mA, Io = 100mA
Isolation Resistance	G $\Omega$	100			
Coupled Capacitance	p F		2		
Contact Transient Ratio	V / $\mu$ s	2000	7000		dV = 50V

## PERFORMANCE DATA

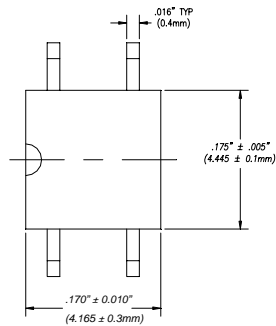


## MECHANICAL DIMENSIONS

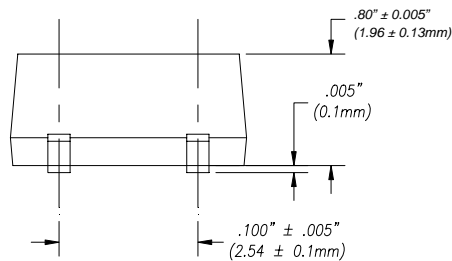
### 4 PIN SMALL OUTLINE PACKAGE



END VIEW



TOP VIEW



BACK VIEW

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