

# AD4C311



Dual 1 Form A  
Solid State Relay



## DESCRIPTION

The AD4C311 is a bi-directional, double-pole, single-throw, normally open multipurpose relay. It is designed to replace electro-mechanical relays in general purpose switching applications. The relay consists of two integrated circuits, each driving a pair of rugged drain-to-drain enhancement type DMOS transistors. Each integrated circuit is optically coupled to a light emitting diode. The output MOS transistors are protected with free wheeling diodes that can handle up to 5.0A of inrush current, making the relay ideal for switching lamps and highly inductive loads.

## FEATURES

- Double-pole, bi-directional solid state switch
- High input to output isolation
- High off-contact impedance
- Very low contact Offset Voltage: < 0.2 mV
- 250mA maximum Continuous Load Current (one pole conducting, 170 mA max both poles conducting)
- Inrush capability rated at up to 5.0A
- Very low control current
- 10Ω maximum On-Resistance

## APPLICATIONS

- Telecom tip / ring control circuits
- Robotics
- Process control
- Programmable controllers
- Energy management
- Automatic test equipment
- Medical electronics
- Reed relay replacement

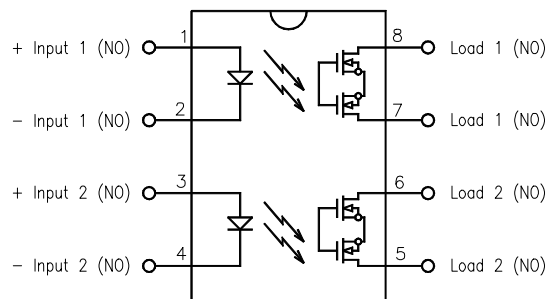
## OPTIONS / SUFFIXES

- -H High Output Isolation
- -S Surface Mount Option
- -TR Tape and Reel

## 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	6.0	-	-
Blocking Voltage	V	-	-	± 400
Output Power Dissipation	mW	-	-	500

## SCHEMATIC DIAGRAM



## APPROVALS

- BABT \*
- CSA CERTIFICATE # E90096
- UL CERTIFICATE # LR 111581-1

\* Pending

**ELECTRICAL CHARACTERISTICS - 25°C**

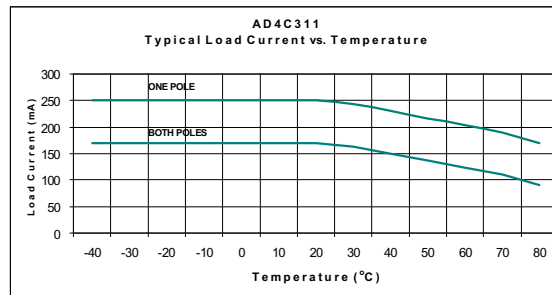
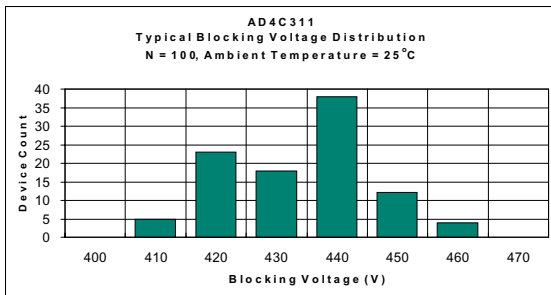
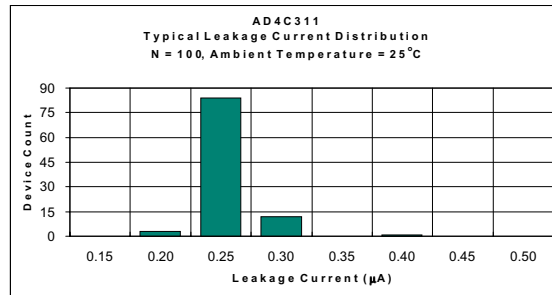
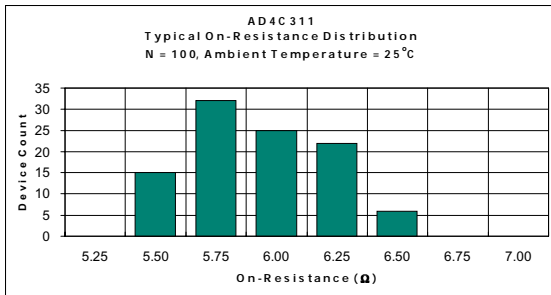
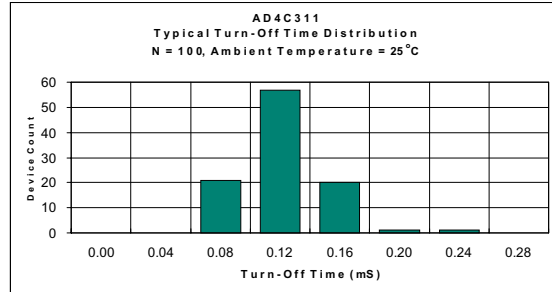
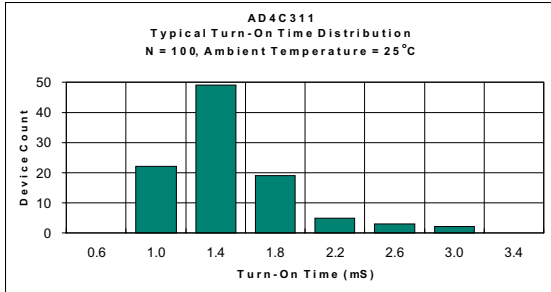
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
<b>INPUT SPECIFICATIONS</b>					
LED Forward Voltage	V	-	1.2	1.5	$I_f = 10\text{mA}$
LED Reverse Voltage	V	6.0	12	-	$I_r = 10\mu\text{A}$
Turn-On Current	mA	-	2.5	5.0	-
Turn-Off Current	mA	-	0.5	-	-
<b>OUTPUT SPECIFICATIONS</b>					
Blocking Voltage	V	-	-	400	$I_o = 10\mu\text{A}$
Continuous Load Current (one pole) (both poles)	mA	-	-	250 170	$I_{in} = 5.0\text{mA}$
On-Resistance	$\Omega$	-	6.0	10	$I_o = 200\text{mA}$
Leakage Current	$\mu\text{A}$	-	0.5	2.0	$V_o = 400\text{V}$
Output Capacitance	pF	-	25	50	$V_o = 25, f = 1.0\text{MHz}$
Offset Voltage	mV	-	-	0.2	$I_{in} = 5.0\text{mA}$
<b>COUPLED SPECIFICATIONS</b>					
Isolation Voltage -H Suffix	V	2500 3750	-	-	$T = 1 \text{ Minute}$
Turn-On Time	mS	-	2.0	5.0	$I_f = 5.0\text{mA}, I_o = 200\text{mA}$
Turn-Off Time	mS	-	0.15	0.5	$I_f = 5.0\text{mA}, I_o = 200\text{mA}$
Isolation Resistance	$\Omega$	$10^{11}$	-	-	-
Coupled Capacitance	pF	-	-	2.0	-
Contact Transient Ratio	V/ $\mu\text{S}$	2000	7000	-	$dV = 50\text{V}$

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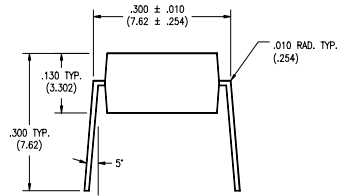
Dual 1 Form A  
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## PERFORMANCE DATA



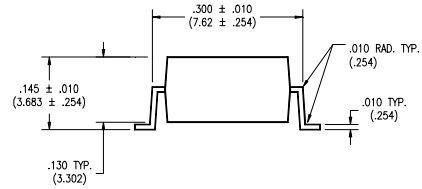
*MECHANICAL DIMENSIONS*

**8 PIN DUAL IN-LINE PACKAGE**

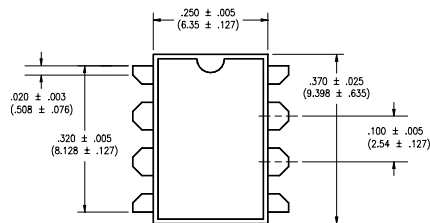


*END VIEW*

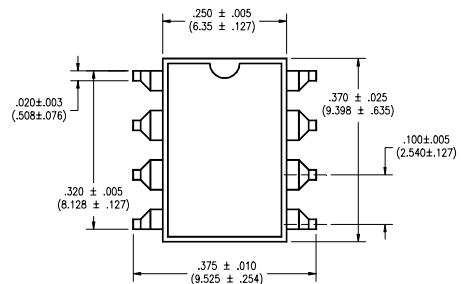
**8 PIN SURFACE MOUNT DEVICE**



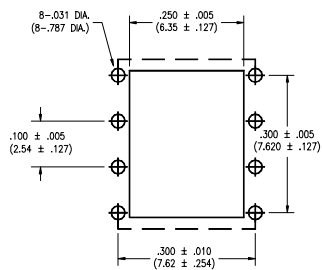
*END VIEW*



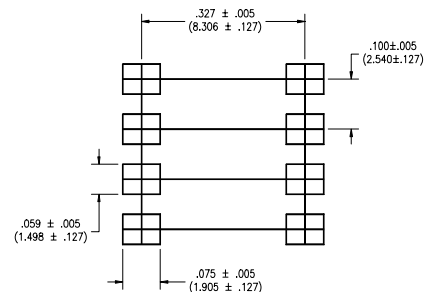
*TOP VIEW*



*TOP VIEW*



*BOTTOM VIEW /  
BOARD PATTERN*



*BOTTOM VIEW /  
BOARD PATTERN*