



## DESCRIPTION

The AD6C311 is a bi-directional, single-pole, single-throw, normally open multipurpose solid-state relay. 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 5A of inrush current, making the relay ideal for switching lamps and highly inductive loads.

## FEATURES

- Low input control power consumption (2.0mA TYP)
- 200mA maximum continuous load current
- 10 ohms maximum on-resistance
- High input-to-output isolation (3.75kV TYP, 5kV -H option)
- Long life/high reliability

## APPLICATIONS

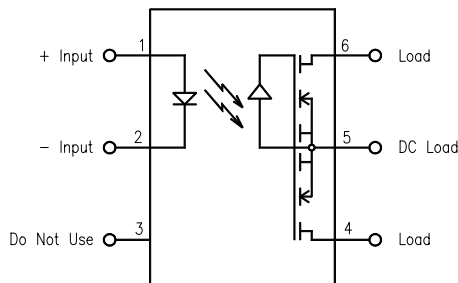
- Multiplexers
- Meter reading systems
- Data Acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

## OPTIONS/SUFFIXES\*

- -H High Input / Output Isolation (5kVrms)
- -S Surface Mount Leadform Option (50 pcs / tube)
- -TR Tape and Reel Packing Option (1,000 pcs / reel)

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

## SCHEMATIC DIAGRAM



## ABSOLUTE MAXIMUM RATINGS\*

PARAMETER	UNIT	MIN	TYP	MAX
Storage Temperature	°C	-55		125
Operating Temperature	°C	-55		105
Continuous Input Current	mA			50
Transient Input Current	mA			400
Reverse Input Control Voltage	V	6		
Output Power Dissipation	mW			800
Solder Temperature - Wave (10s)	°C			260
Solder Temperature - IR Reflow (10s)	°C			260

\*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.

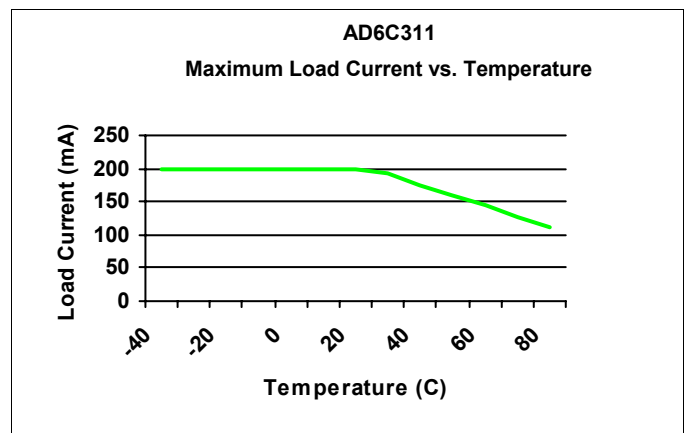
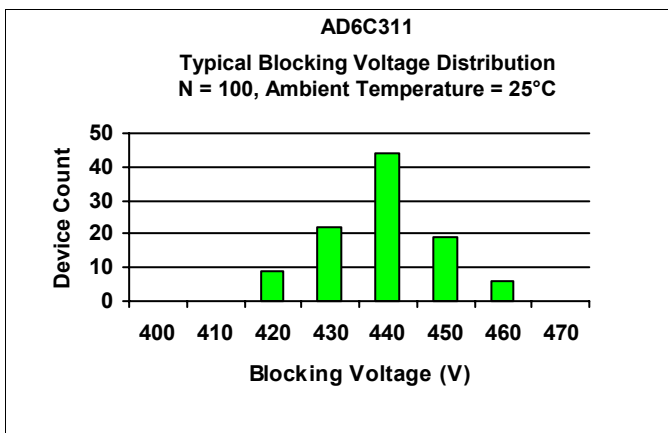
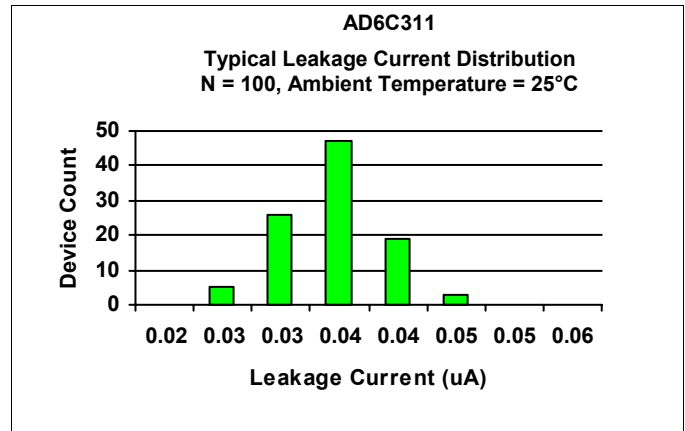
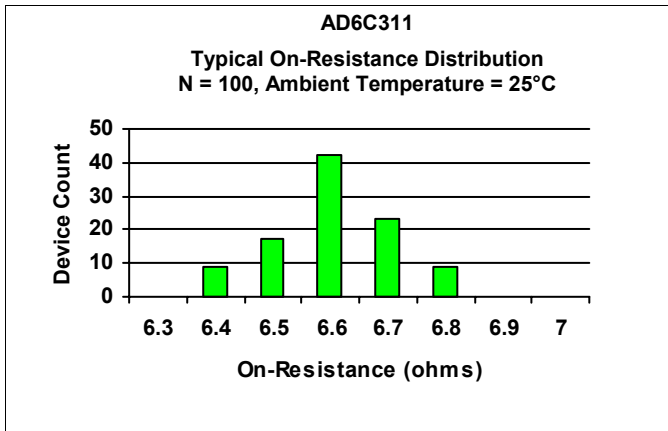
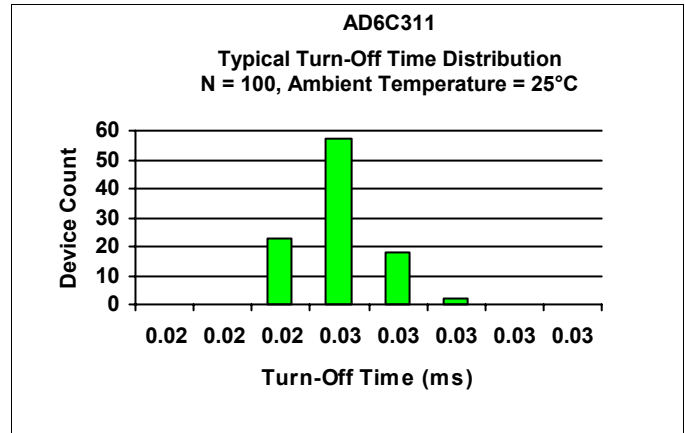
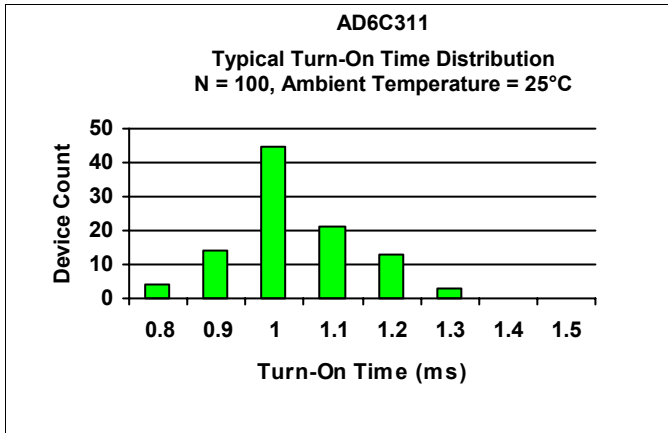
## APPROVALS

- UL / C-UL Approved: File # E201932
- CSA Approved: Certificate #LR111581-1

**ELECTRICAL CHARACTERISTICS - 25°C**

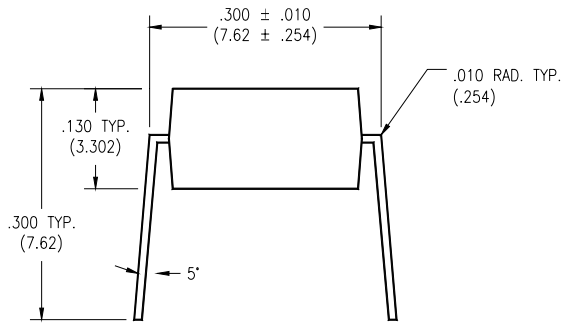
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
<b>INPUT SPECIFICATIONS</b>					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current	m A		2.5	5	Io = 200mA
Turn-Off Current	m A		1		Io = 200mA
<b>OUTPUT SPECIFICATIONS</b>					
Blocking Voltage	V	400			Io = 1uA
Continuous Load Current	m A			200	If = 5mA
On-Resistance	Ω		6.5	10	Io = 200mA
Leakage Current	μ A		0.05	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	3750			T = 1 minute
-H Suffix	V	5000			T = 1 minute
Turn-On Time	m s		1.5	5	If = 5mA, Io = 200mA
Turn-Off Time	m s		0.05	1	If = 0mA, Io = 200mA
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		2		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V

**PERFORMANCE DATA**

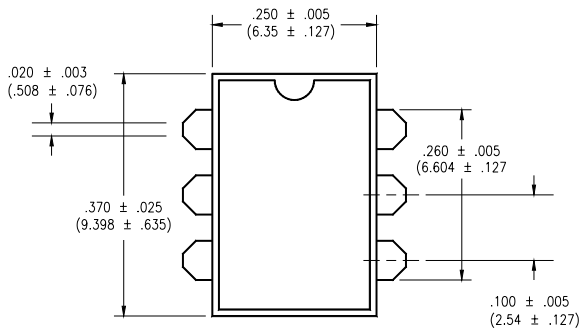


**MECHANICAL DIMENSIONS**

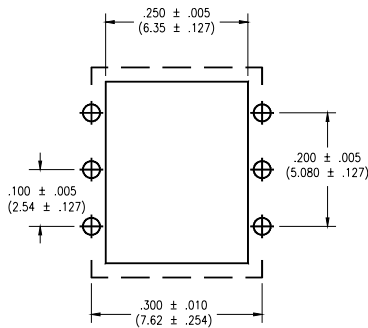
**6 PIN DUAL IN-LINE PACKAGE**



**END VIEW**

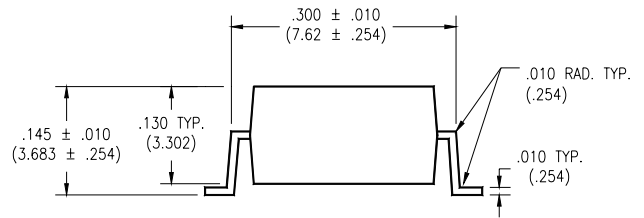


**TOP VIEW**

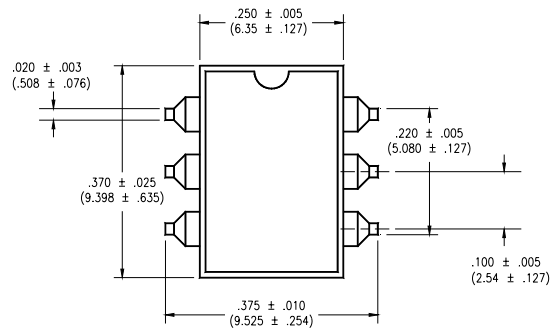


**BOTTOM VIEW/  
BOARD PATTERN**

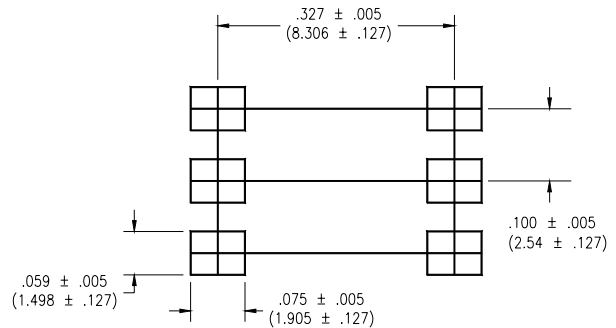
**6 PIN SURFACE MOUNT DEVICE**



**END VIEW**



**TOP VIEW**



**BOTTOM VIEW/  
BOARD PATTERN**

## **DISCLAIMER**

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