



1 Form A/1 Form B  
Solid State Relay

## DESCRIPTION

The AD4C113 is composed of two isolated relays; one normally open and one normally closed. Each relay has a bi-directional, single-pole, single-throw contact. Completely independent of its counterpart, each consists of an LED driver that activates an integrated circuit, which in turn drives a pair of DMOS transistors. These 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

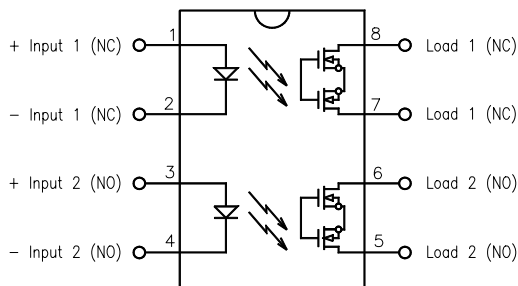
- 1 Form A / 1 Form B integrated in 1 package
- Low input control power consumption (2.5mA TYP)
- 120mA maximum continuous load current
- 35 ohms maximum on-resistance (Form A)
- 35 ohms maximum on-resistance (Form B)
- High Input - Output Isolation
- Long life/high reliability

## OPTIONS/SUFFIXES\*

- -S Surface Mount Option
- -TR Tape and Reel Option

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

## SCHEMATIC DIAGRAM



## APPLICATIONS

- Reed relay replacement
- Meter reading systems
- Medical equipment
- Battery monitoring
- Multiplexers

## ABSOLUTE 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			800

\*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.

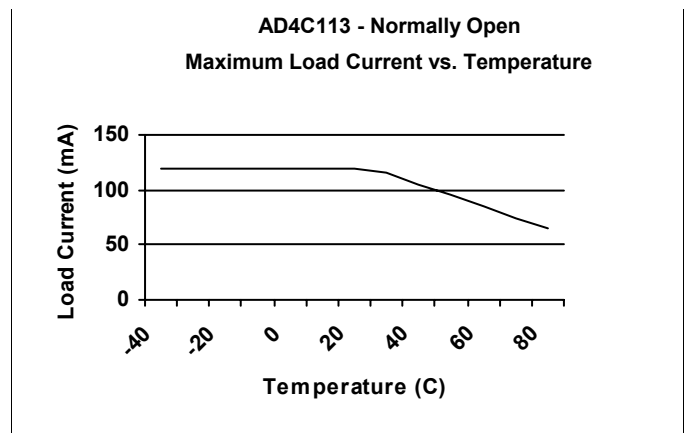
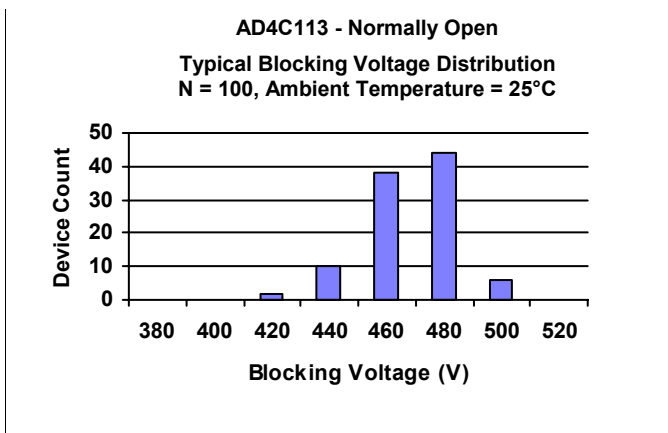
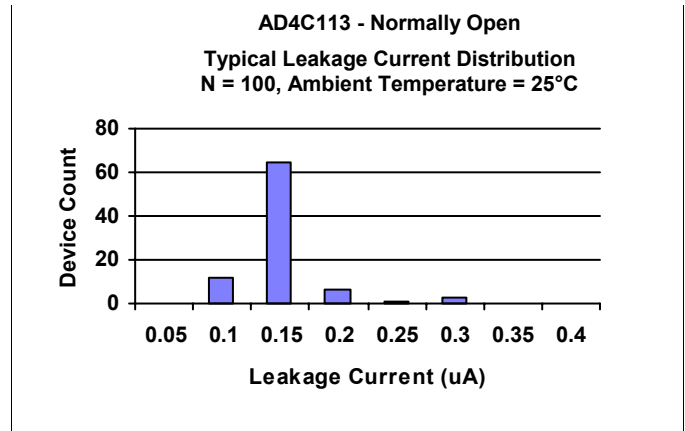
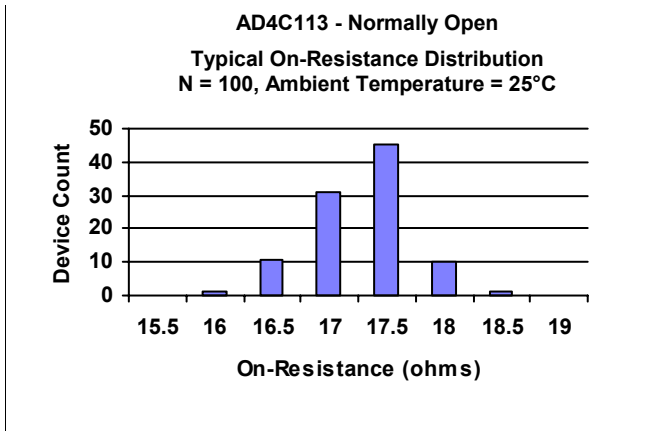
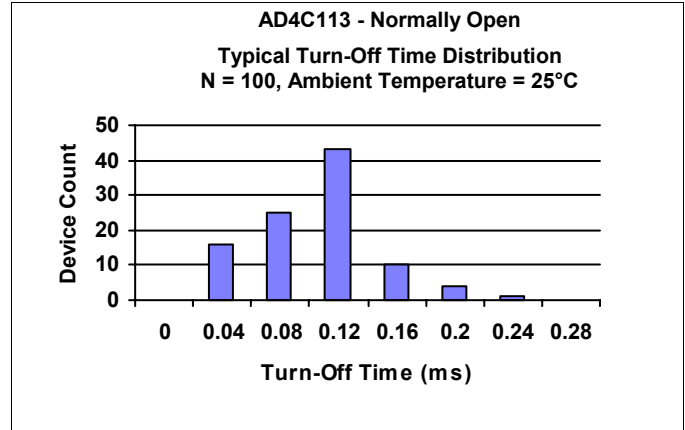
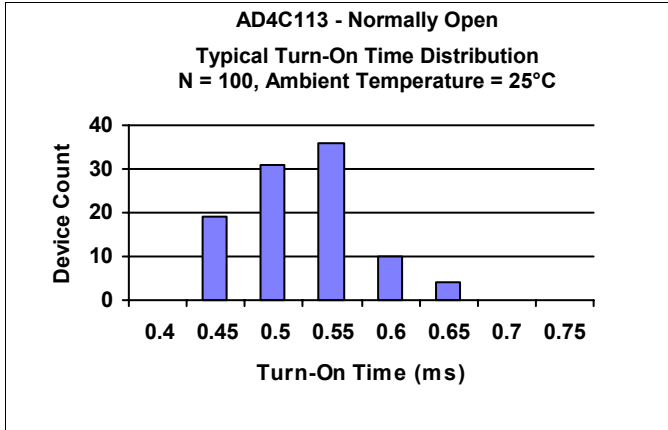
## APPROVALS

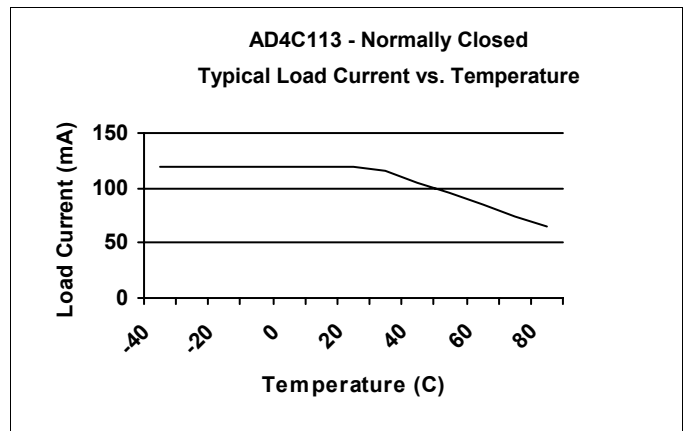
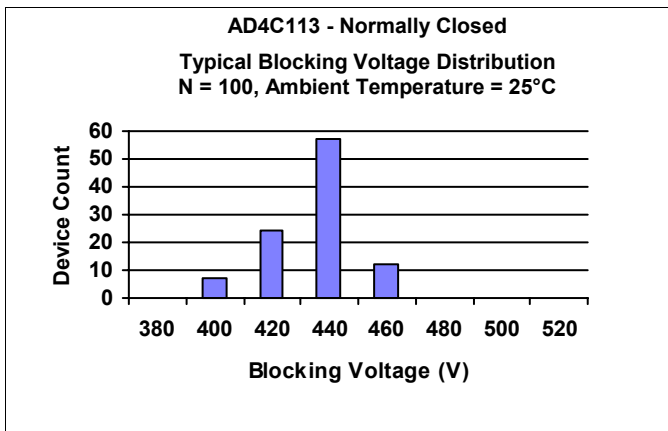
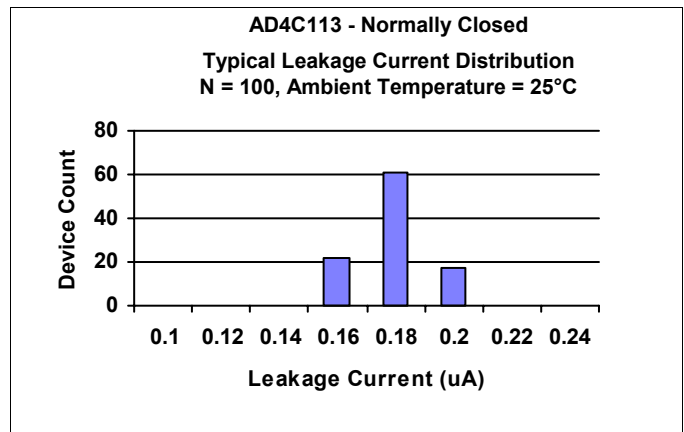
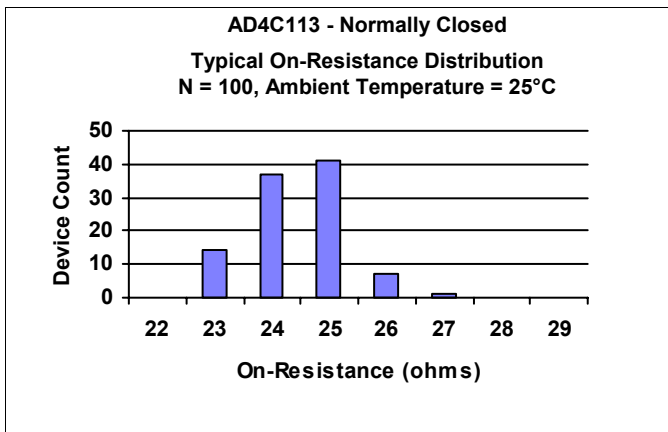
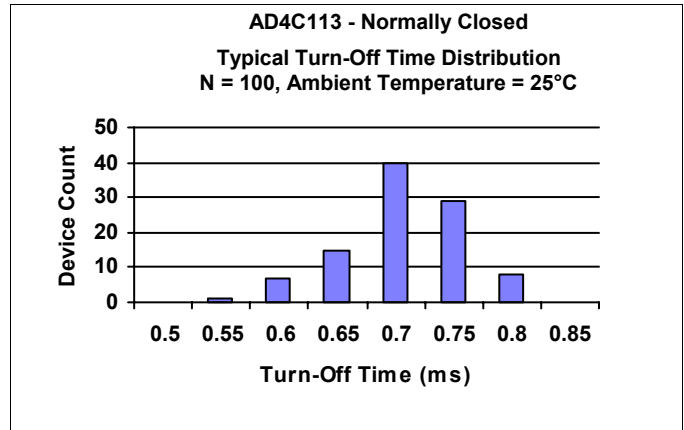
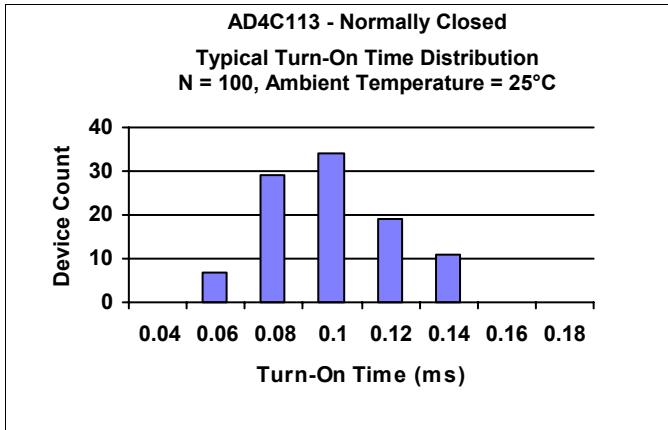
- BAPT CERTIFICATE #607836:  
BS EN 60950, BS EN 41003, BS EN 60065
- CSA CERTIFICATE #LR111581-1
- UL FILE #E90096

**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 (Form A)	m A		2.5	5	Io = 120mA
Turn-On Current (Form B)	m A		0.5		Io = 120mA
Turn-Off Current (Form A)	m A		0.5		
Turn-Off Current (Form B)	m A	5	2.5		
<b>OUTPUT SPECS (NORMALLY OPEN)</b>					
Blocking Voltage	V	400			Io = 1uA
Continuous Load Current	m A			120	If = 5mA
On-Resistance	Ω		25	35	
Leakage Current	μ A		0.2	1	Vo = 400V
Output Capacitance	p F		25	35	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	If = 5mA
Turn-On Time	m s		1	5	If = 5mA, Io = 120mA
Turn-Off Time	m s		1	5	If = 5mA, Io = 120mA
<b>OUTPUT SPECS (NORMALLY CLOSED)</b>					
Blocking Voltage	V	400			Io = 1uA, If = 5mA
Continuous Load Current	m A			120	If = 0mA
On-Resistance	Ω		25	35	Io = 120mA
Leakage Current	μ A		0.2	1	Vo = 400V, If = 5mA
Output Capacitance	p F		15	20	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	
Turn-On Time	m s		1	5	If = 0mA, Io = 120mA
Turn-Off Time	m s		1	5	If = 0mA, Io = 120mA
<b>COUPLED SPECIFICATIONS</b>					
Isolation Voltage	V	2500			T = 1 minute
-H Suffix	V	3750			T = 1 minute
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F			2	
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V

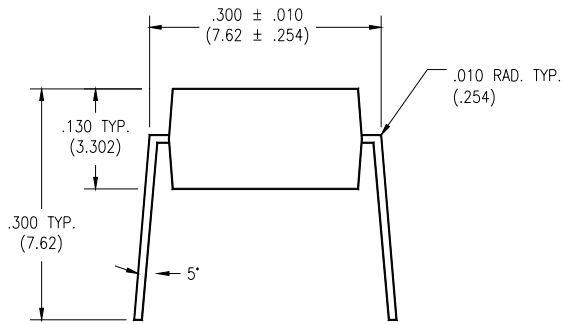
**PERFORMANCE DATA**



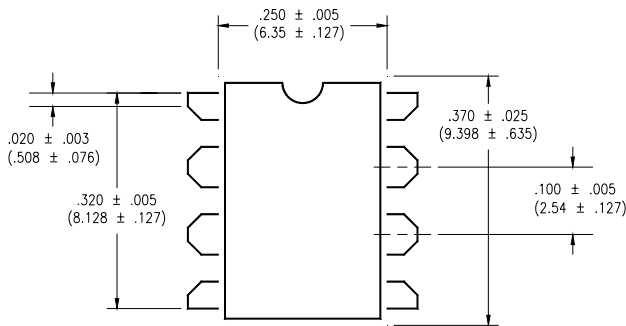


**MECHANICAL DIMENSIONS**

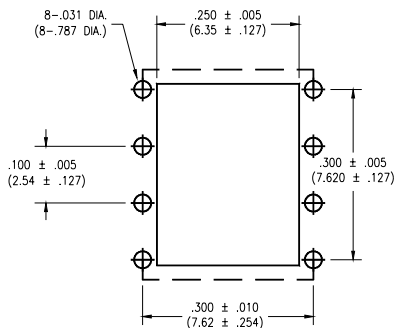
**8 PIN DUAL IN-LINE PACKAGE**



**END VIEW**

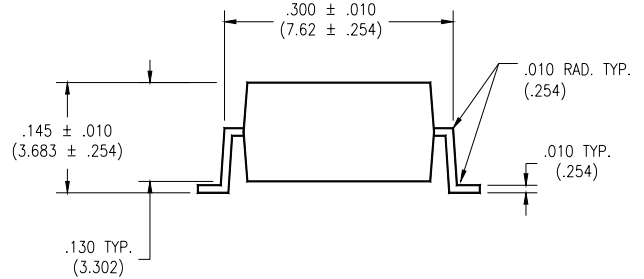


**TOP VIEW**

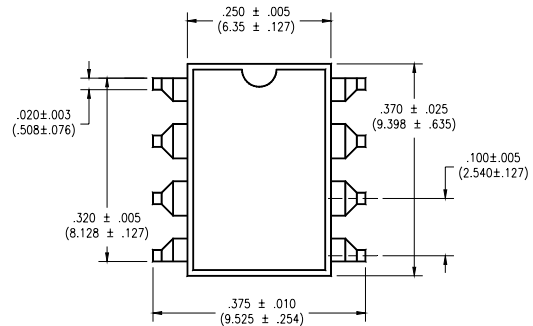


**BOTTOM VIEW/  
BOARD PATTERN**

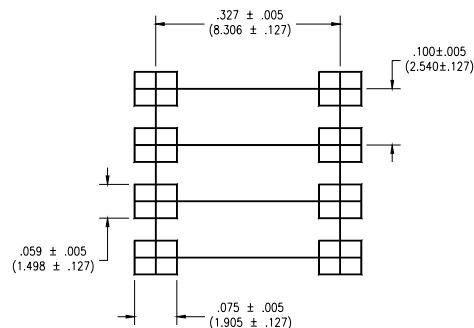
**8 PIN SURFACE MOUNT DEVICE**



**END VIEW**



**TOP VIEW**



**BOTTOM VIEW/  
BOARD PATTERN**

## **DISCLAIMER**

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