SOLID STATE OPTRONICS

AD4C541

www.DataSheet4U.com

Dual 1 Form A
Solid State Relay

DESCRIPTION

The AD4C541 is a bi-directional, double-pole, single-throw, normally open solid-state relay. This device consists of two discrete relays in a compact 8 pin package. Each relay is composed of a AlGaAs LED optically coupled to an IC--driving a pair of source-to-source enhancement type DMOS transistors. Low on-resistance allows for a high load current rating--making the AD4C541 ideal in applications where packaging density and high load current requirements present unique design challenges.

FEATURES

- Low On-Resistance (1 ohm MAX)
- Low input control power consumption (2.5mA TYP)
- High load current rating (700mA MAX, single pole)
- High input-to-output isolation (2500V MIN)
- Long life/high reliability

APPLICATIONS

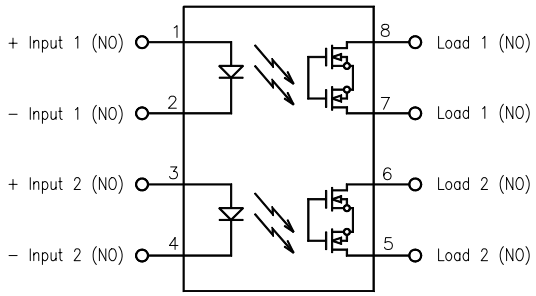
- Reed relay replacement
- Meter reading systems
- Medical equipment
- Battery monitoring
- Multiplexers

OPTIONS/SUFFIXES*

- -H High Output Isolation
- -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



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

- UL File # E209132

© 2004 Solid State Optronics • San José, CA

www.DataSheet4U.com

www.DataSheet4U.com

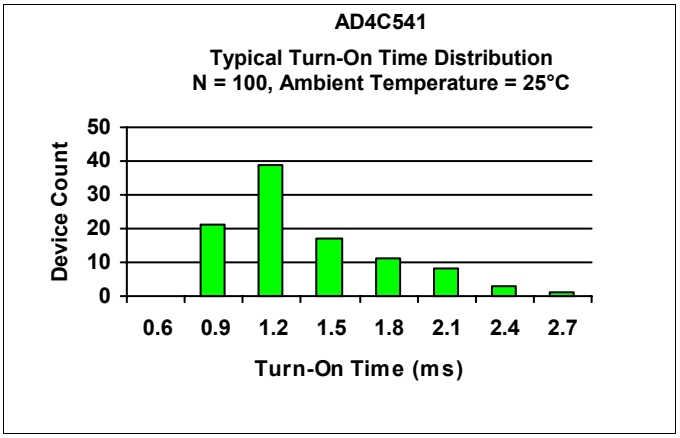
ELECTRICAL CHARACTERISTICS - 25°C

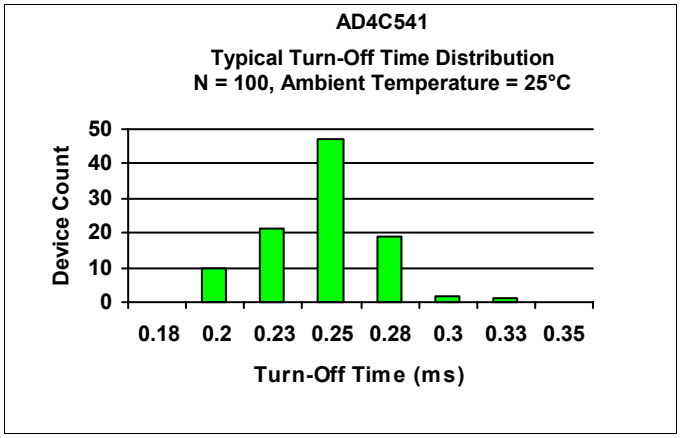
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current	m A		2.5	5	Io = 700mA
Turn-Off Current	m A		0.5		
OUTPUT SPECIFICATIONS					
Blocking Voltage	V	60			Io = 1uA
Continuous Load Current	m A			700	If = 5mA, (Single Pole)
On-Resistance	Ω		0.75	1	Io = 700mA
Leakage Current	μ A		0.2	1	Vo = 60V
Output Capacitance	p F		125	200	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	If = 5mA
COUPLED SPECIFICATIONS					
Isolation Voltage	V	2500			T = 1 minute
-H Suffix	V	3750			T = 1 minute
Turn-On Time	m s		1.25	5	If = 5mA, Io = 700mA
Turn-Off Time	m s		0.25	2	If = 5mA, Io = 700mA
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		2		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V

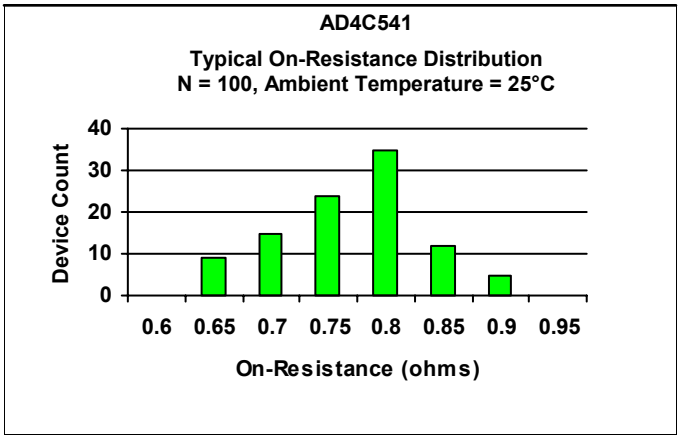
www.DataSheet4U.com

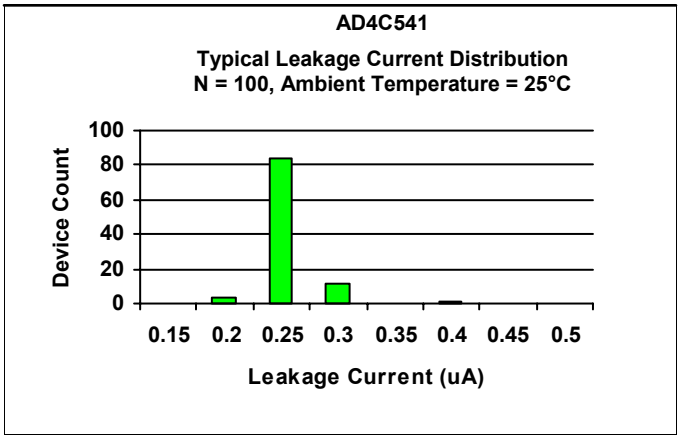
www.DataSheet4U.com

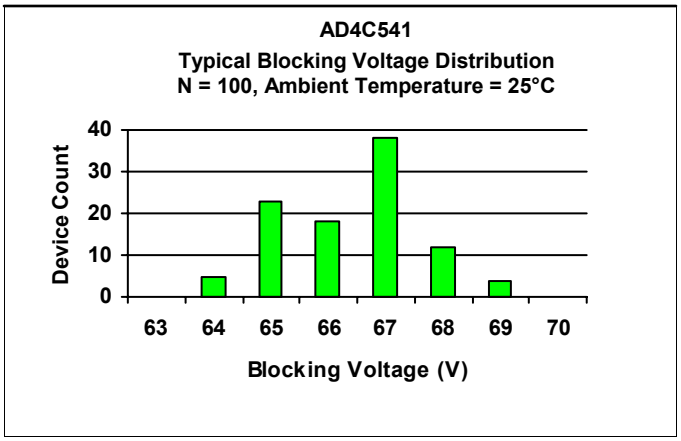
PERFORMANCE DATA

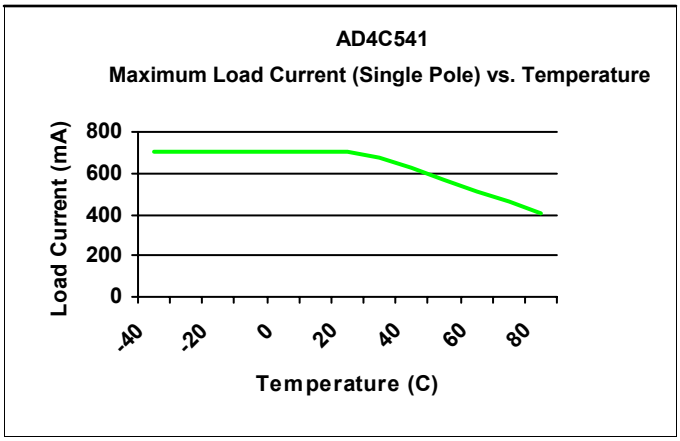












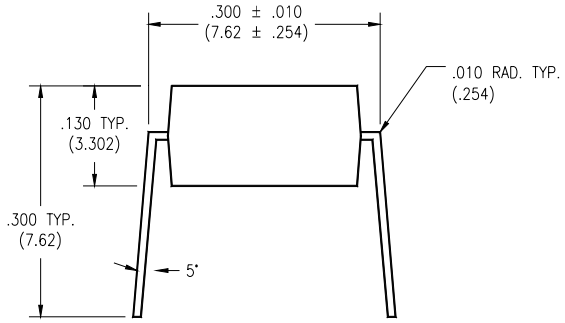
www.DataSheet4U.com

www.DataSheet4U.com

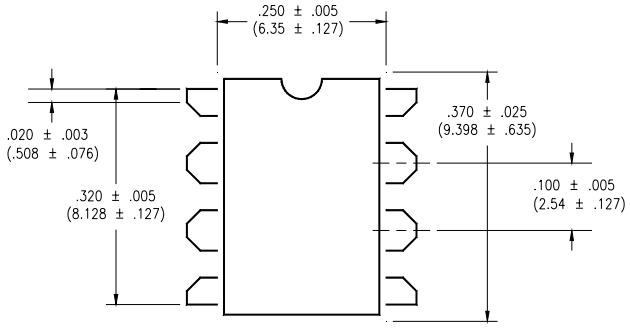
Dual 1 Form A
Solid State Relay

MECHANICAL DIMENSIONS

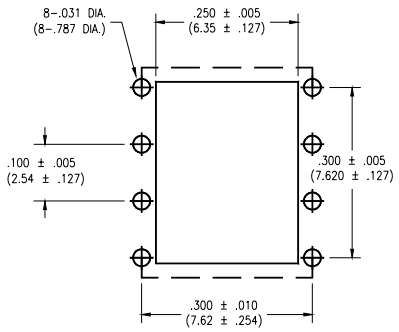
8 PIN DUAL IN-LINE PACKAGE



END VIEW

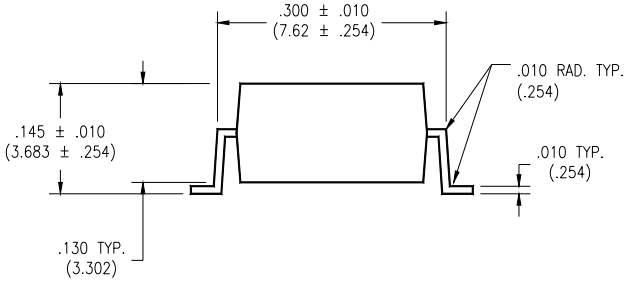


TOP VIEW

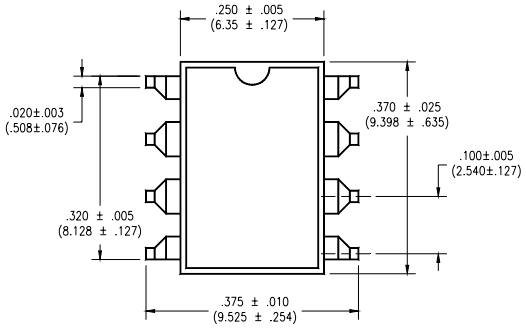


BOTTOM VIEW/
BOARD PATTERN

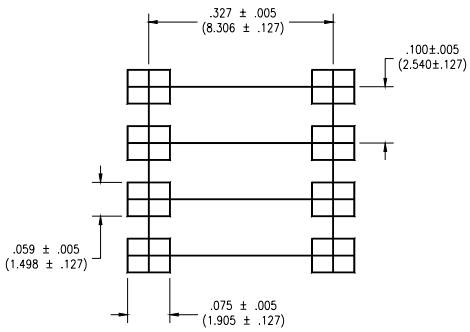
8 PIN SURFACE MOUNT DEVICE



END VIEW



TOP VIEW



BOTTOM VIEW/
BOARD PATTERN

www.DataSheet4U.com

www.DataSheet4U.com

Dual 1 Form A
Solid State Relay

DISCLAIMER

Solid State Optronics (SSO) makes no warranties or representations with regards to the completeness and accuracy of this document. SSO reserves the right to make changes to product description, specifications at any time without further notice.
SSO shall not assume any liability arising out of the application or use of any product or circuit described herein. Neither circuit patent licenses nor indemnity are expressed or implied.
Except as specified in SSO's Standard Terms & Conditions, SSO disclaims liability for consequential or other damage, and we make no other warranty, expressed or implied, including merchantability and fitness for particular use.

LIFE SUPPORT POLICY

SSO does not authorize use of its devices in life support applications wherein failure or malfunction of a device may lead to personal injury or death. Users of SSO devices in life support applications assume all risks of such use and agree to indemnify SSO against any and all damages resulting from such use. Life support devices are defined as devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when used properly in accordance with instructions for use can be reasonably expected to result in significant injury to the user, or (d) a critical component in any component of a life support device or system whose failure can be reasonably expected to cause failure of the life support device or system, or to affect its safety or effectiveness.

www.DataSheet4U.com