



## DESCRIPTION

The AD6C250 is a bi-directional, single-pole, single-throw, normally open multipurpose solid-state relay. It is designed to replace electromechanical and reed relays in special applications that call for very fast switching rates. The relay consists of an integrated circuit that drives two special source-to-source enhancement type DMOS transistors with extremely low output capacitance and leakage current. The IC is optically coupled to a light emitting diode which controls its switching. The design of the circuit makes it ideal for switching high frequency signals.

## FEATURES

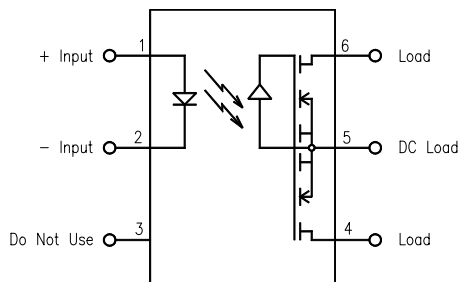
- Fast switching speed ( $T_{on} = 50 \mu s$  TYP)
- Low output capacitance (3pF MAX)
- Low input control current (5mA MAX)
- High input-to-output isolation (2.5kV MIN)
- Long life/high reliability

## 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.

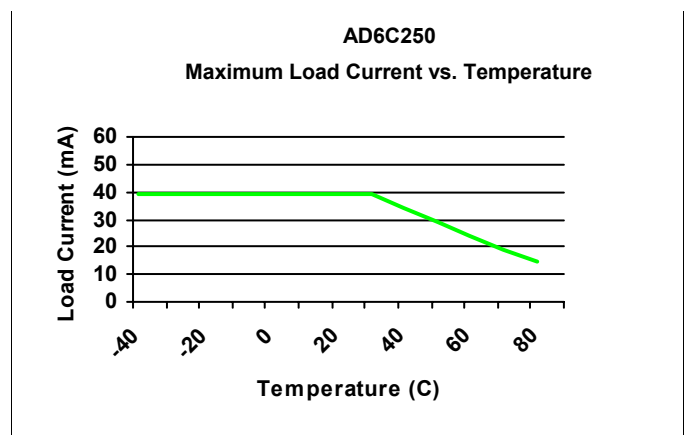
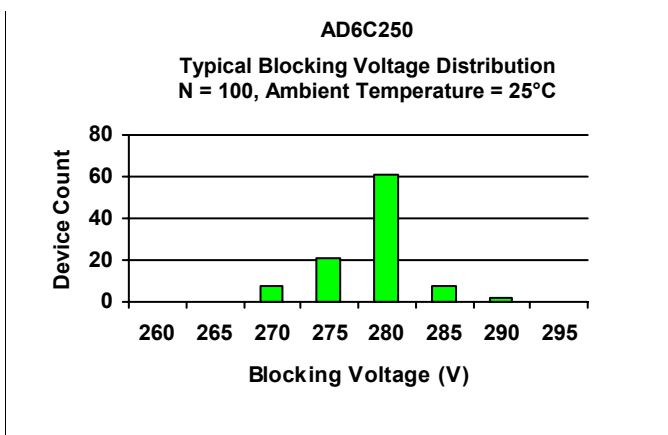
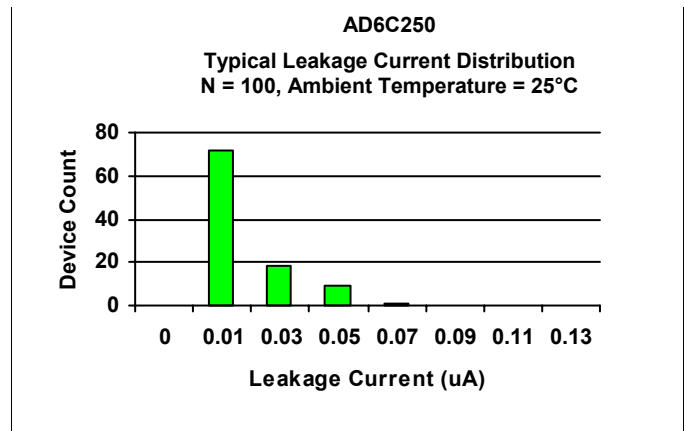
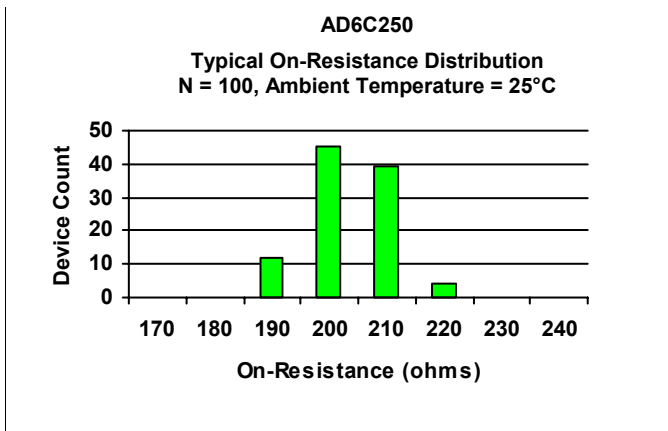
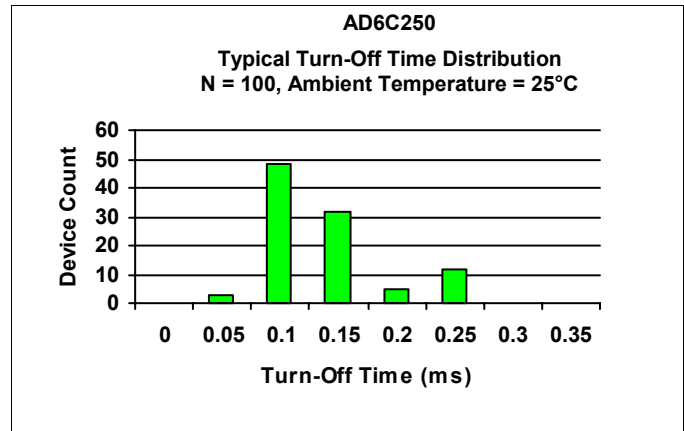
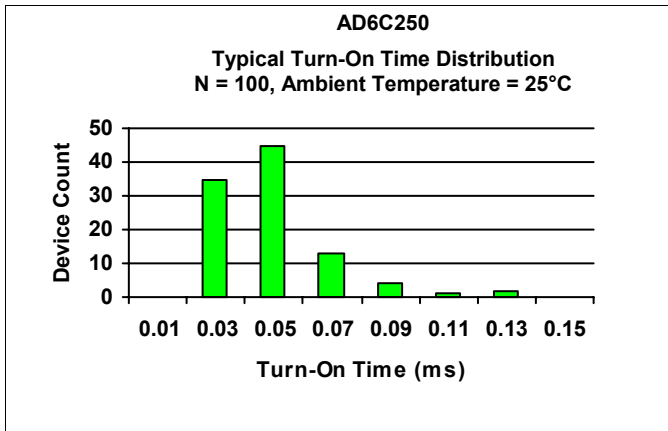
## APPROVALS

- BABT CERTIFICATE #607836:
- CSA CERTIFICATE #LR111581-1
- UL FILE #E90096

**ELECTRICAL CHARACTERISTICS - 25°C**

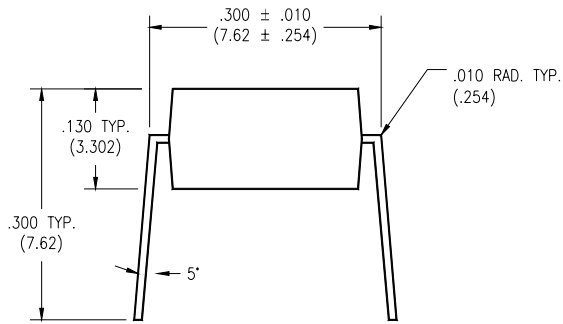
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
<b>INPUT SPECIFICATIONS</b>					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current	m A		2.5	5	Io = 40mA
Turn-Off Current	m A		0.5		
<b>OUTPUT SPECIFICATIONS</b>					
Blocking Voltage	V	250			Io = 1uA
Continuous Load Current	m A			40	If = 5mA
On-Resistance	Ω		225	300	Io = 40mA
Leakage Current	n A		10	100	Vo = 250V
Output Capacitance	p F		1.5	3	Vo = 25V, f = 1.0MHz
Offset Voltage	m V			0.2	If = 5mA
<b>COUPLED SPECIFICATIONS</b>					
Isolation Voltage	V	2500			T = 1 minute
-H Suffix	V	3750			T = 1 minute
Turn-On Time	μ s		50	500	If = 5mA, Io = 40mA
Turn-Off Time	μ s		150	500	If = 5mA, Io = 40mA
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		3		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V

**PERFORMANCE DATA**

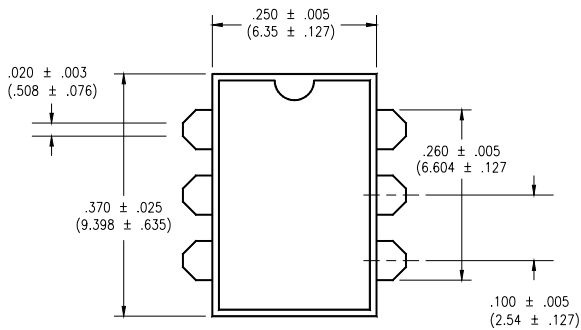


**MECHANICAL DIMENSIONS**

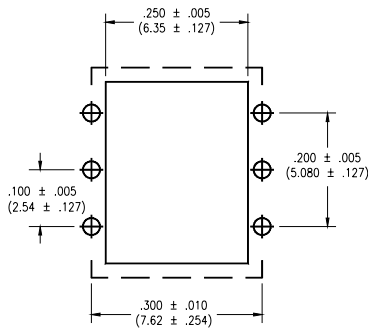
**6 PIN DUAL IN-LINE PACKAGE**



**END VIEW**

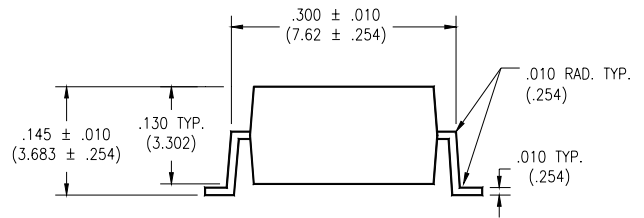


**TOP VIEW**

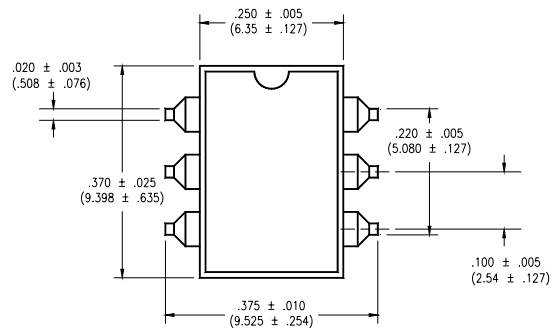


**BOTTOM VIEW/  
BOARD PATTERN**

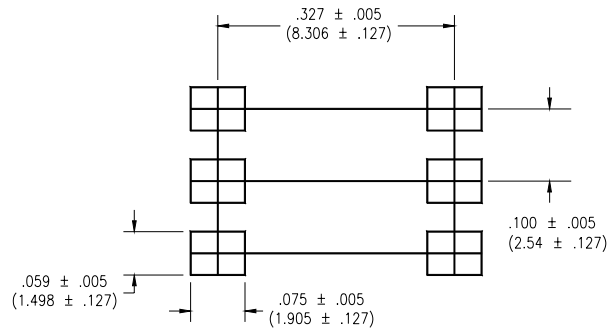
**6 PIN SURFACE MOUNT DEVICE**



**END VIEW**



**TOP VIEW**



**BOTTOM VIEW/  
BOARD PATTERN**

## **DISCLAIMER**

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