



## DESCRIPTION

The AD6C223 is composed of two distinct relays; one normally open and one normally closed sharing a common input, making this a true 1 Form C device. Each relay has a bi-directional, single-throw contact controlled simultaneously by an LED driver. The driver activates an integrated circuit, which in turn drives each 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

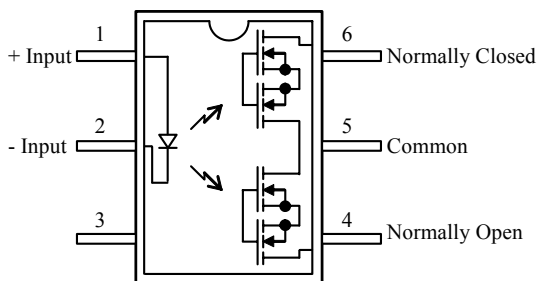
- True 1 Form C device
- Low input control power consumption (5mA MAX)
- 150mA maximum continuous load current
- 25 ohms maximum on-resistance (Form A)
- 25 ohms maximum on-resistance (Form B)
- High input-to-output isolation
- Long life/high reliability

## OPTIONS/SUFFIXES\*

- -S Surface Mount Leadform 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   |     |     | 50  |
| Transient Input Current       | mA   |     |     | 400 |
| Reverse Input Control Voltage | V    | 6   |     |     |
| Output Power Dissipation      | mW   |     |     | 600 |

\*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.

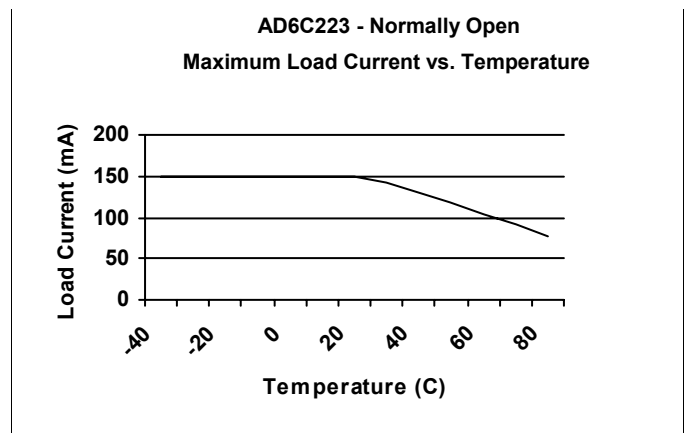
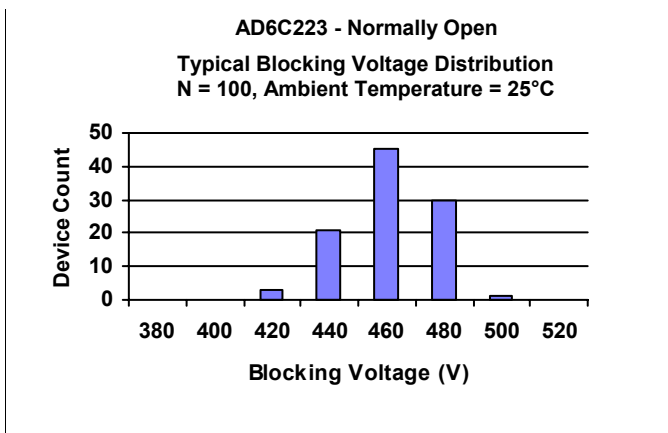
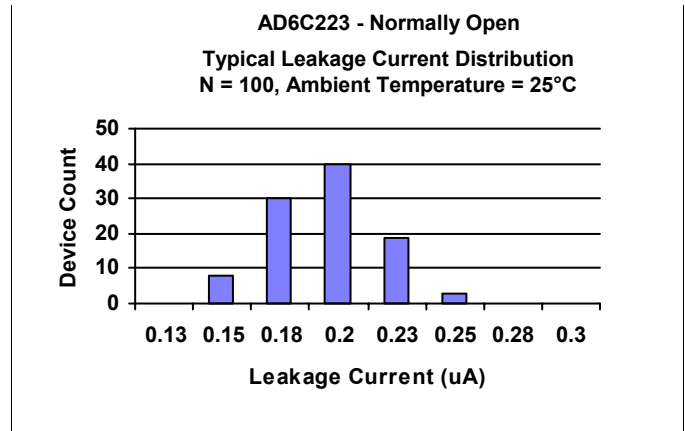
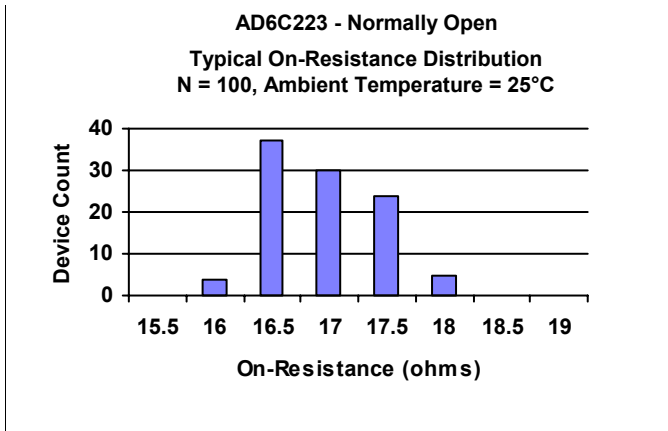
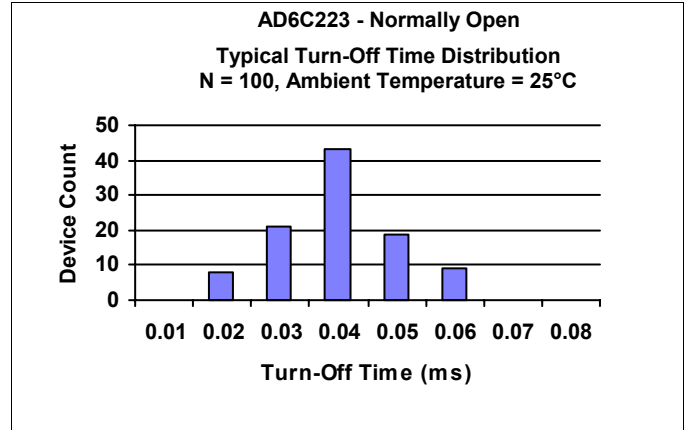
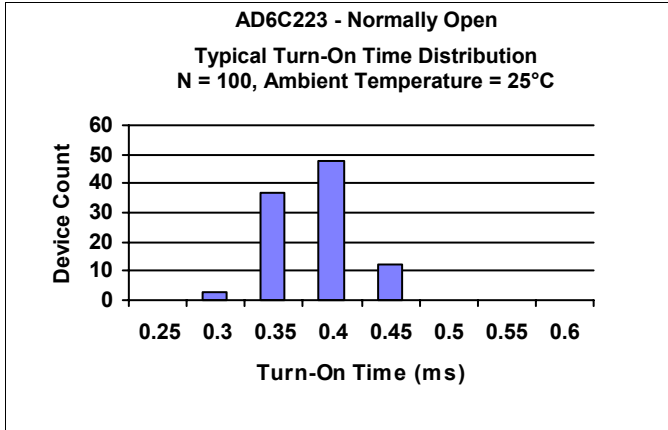
## APPROVALS

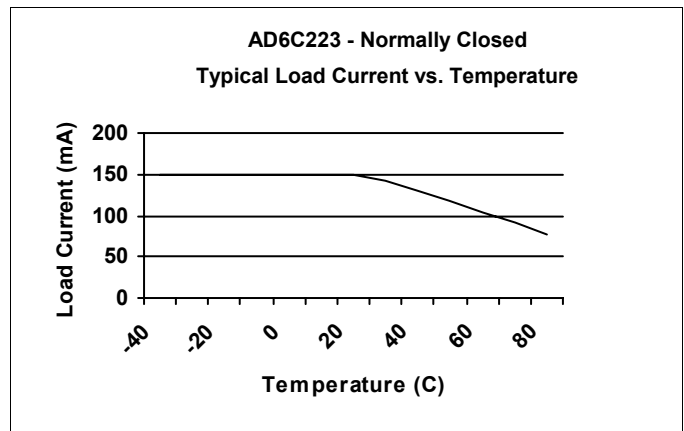
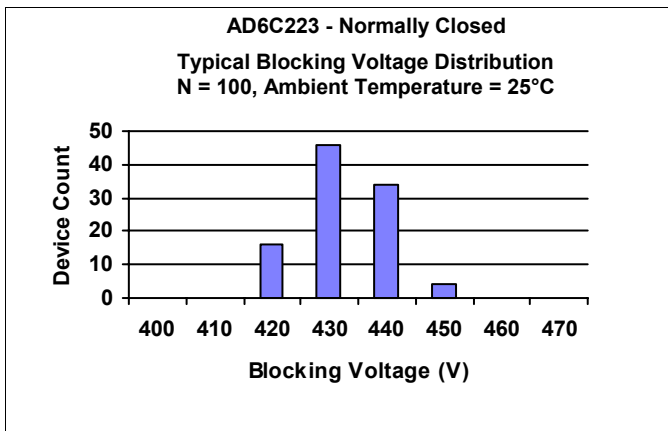
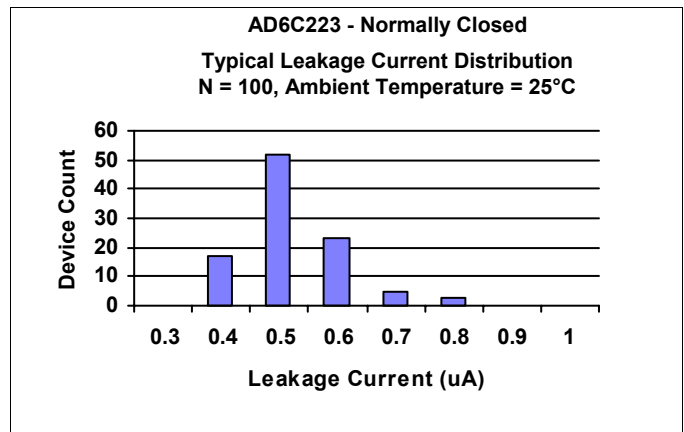
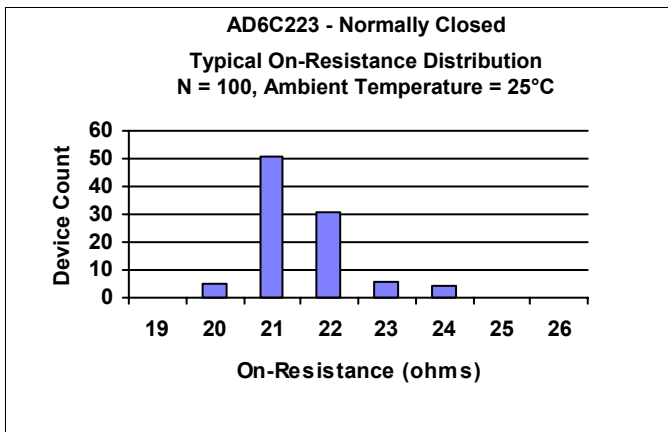
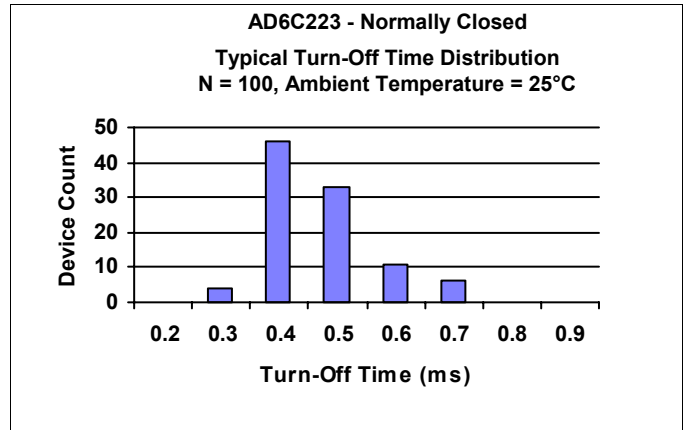
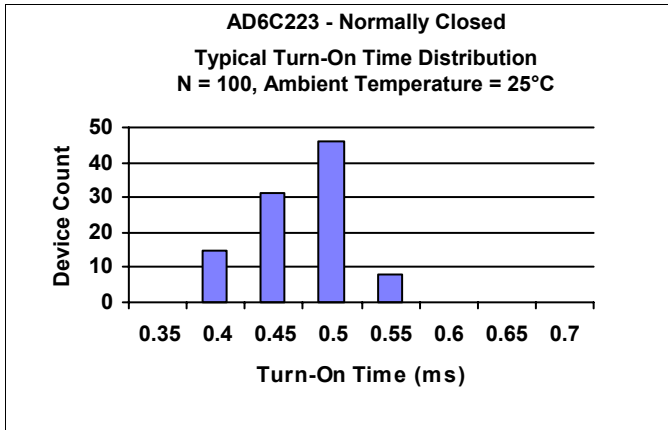
- BAPT CERTIFICATE #607836:  
BS EN 60950, BS EN 41003, BS EN 60065
- CSA CERTIFICATE #LR111581-1
- UL FILE #E90096

**ELECTRICAL CHARACTERISTICS - 25°C**

| PARAMETER                                      | UNIT    | MIN  | TYP  | MAX | TEST CONDITIONS      |
|--|---------|------|------|-----|----------------------|
| <b>INPUT SPECIFICATIONS</b>                    |         |      |      |     |                      |
| LED Forward Voltage                            | V       |      | 1.2  | 1.5 | If = 5mA             |
| LED Reverse Voltage                            | V       | 6    | 12   |     | Ir = 10uA            |
| Turn-On Current (Form A)                       | m A     |      | 2    | 5   | Io = 150mA           |
| Turn-On Current (Form B)                       | m A     |      | 0.5  |     |                      |
| Turn-Off Current (Form A)                      | m A     |      | 0.5  |     |                      |
| Turn-Off Current (Form B)                      | m A     |      | 2    | 5   | Io = 150mA           |
| <b>OUTPUT SPECIFICATIONS (NORMALLY OPEN)</b>   |         |      |      |     |                      |
| Blocking Voltage                               | V       | 400  |      |     | Io = 1uA             |
| Continuous Load Current                        | m A     |      |      | 150 | If = 5mA             |
| On-Resistance                                  | Ω       |      | 17   | 25  | Io = 150mA           |
| Leakage Current                                | μ A     |      | 0.2  | 1   | Vo = 400V            |
| Output Capacitance                             | p F     |      | 25   | 50  | Vo = 25V, f = 1.0MHz |
| Offset Voltage                                 | m V     |      |      | 0.2 | If = 5mA             |
| Turn-On Time                                   | m s     |      | 0.5  | 5   | If = 5mA, Io = 150mA |
| Turn-Off Time                                  | m s     |      | 0.05 | 5   | If = 0mA, Io = 150mA |
| <b>OUTPUT SPECIFICATIONS (NORMALLY CLOSED)</b> |         |      |      |     |                      |
| Blocking Voltage                               | V       | 400  |      |     | Io = 1uA             |
| Continuous Load Current                        | m A     |      |      | 150 | If = 0mA             |
| On-Resistance                                  | Ω       |      | 22   | 25  | Io = 150mA           |
| Leakage Current                                | μ A     |      | 0.2  | 1   | Vo = 400V            |
| Output Capacitance                             | p F     |      | 15   | 20  | Vo = 25V, f = 1.0MHz |
| Offset Voltage                                 | m V     |      |      | 0.2 |                      |
| Turn-On Time                                   | m s     |      | 0.5  | 5   | If = 0mA, Io = 150mA |
| Turn-Off Time                                  | m s     |      | 0.5  | 5   | If = 5mA, Io = 150mA |
| <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             |

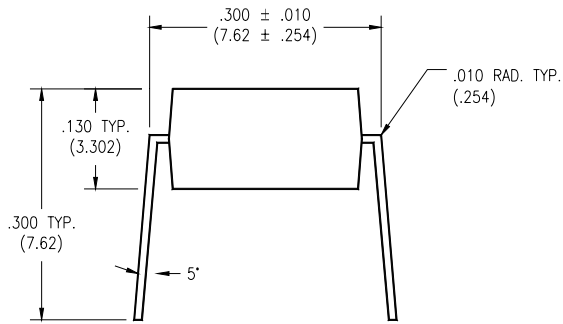
**PERFORMANCE DATA**



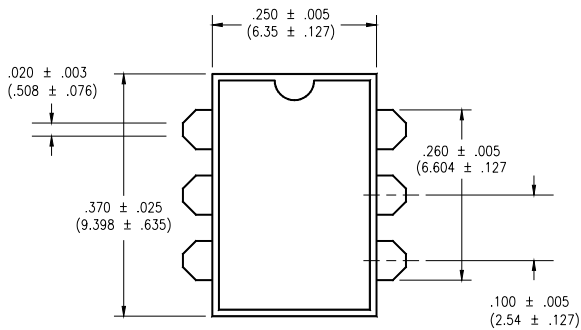


**MECHANICAL DIMENSIONS**

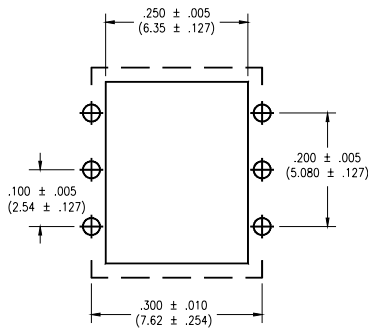
**6 PIN DUAL IN-LINE PACKAGE**



**END VIEW**

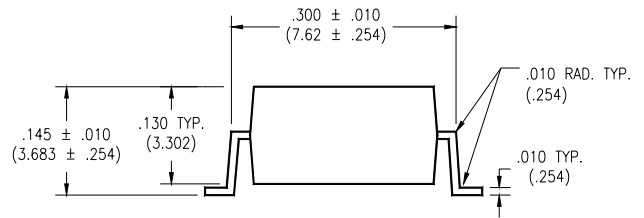


**TOP VIEW**

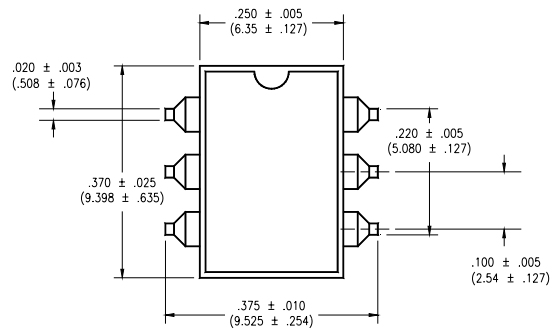


**BOTTOM VIEW/  
BOARD PATTERN**

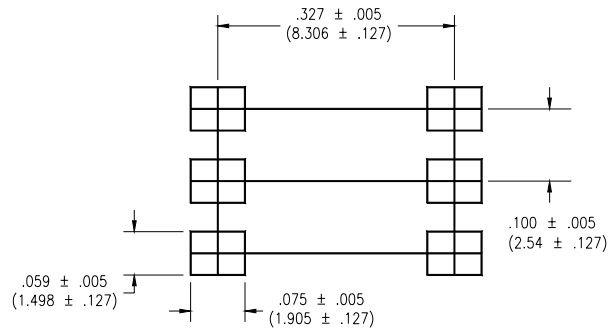
**6 PIN SURFACE MOUNT DEVICE**



**END VIEW**



**TOP VIEW**



**BOTTOM VIEW/  
BOARD PATTERN**

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