



## DESCRIPTION

The AD6C111-E 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 1.5A of inrush current, making the relay ideal for switching lamps and highly inductive loads.

## FEATURES

- High input-to-output isolation
- Low input control power consumption
- 110mA maximum continuous load current
- 40 ohms maximum on-resistance
- Long life/high reliability

## APPLICATIONS

- Telecom switching
- Tip/Ring control
- PCMCIA modules
- Multiplexers
- Meter reading systems
- Data acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

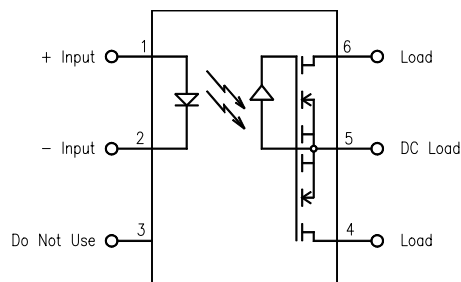
## OPTIONS/SUFFIXES

- -H High Output Isolation
- -S Surface Mount Option
- -TR Tape and Reel

## 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   |     |     | 500 |

## SCHEMATIC DIAGRAM



## APPROVALS

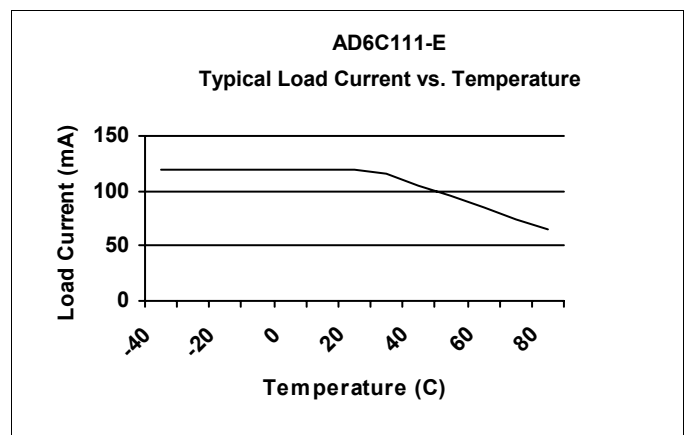
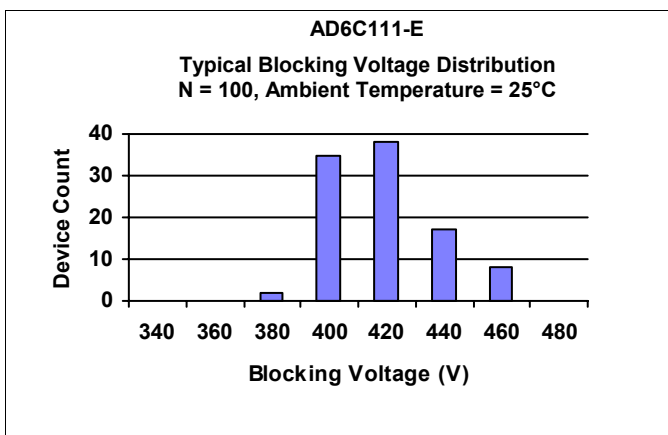
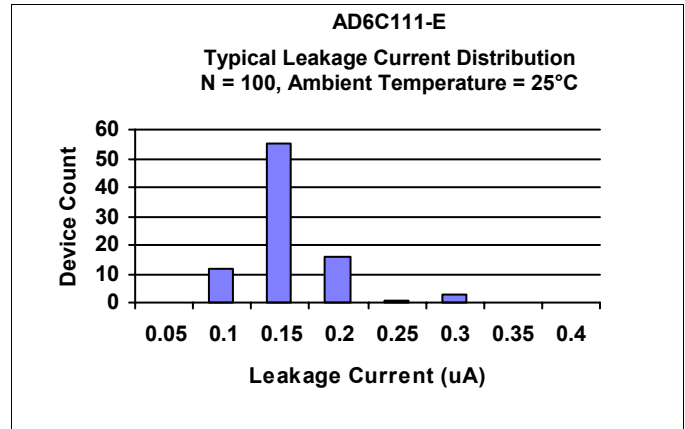
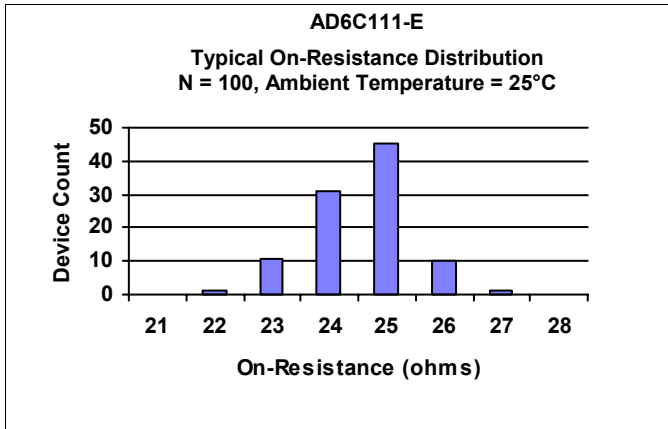
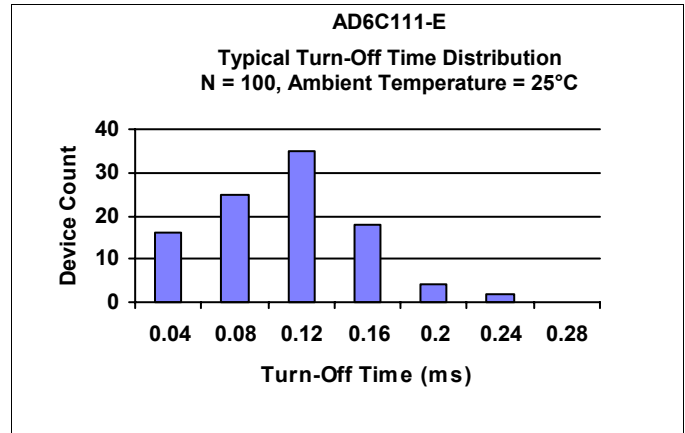
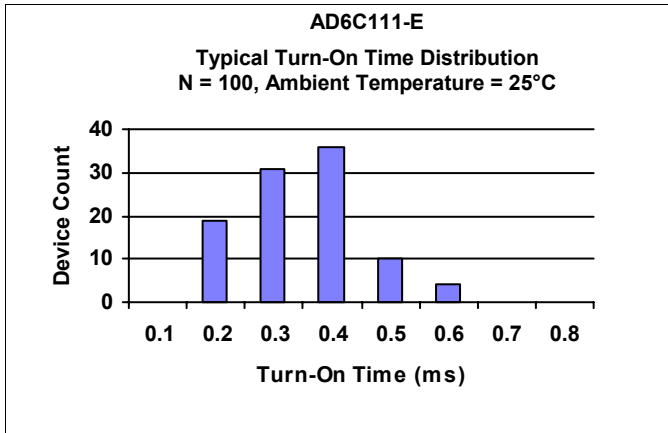
- BAPT CERTIFICATE #607836:  
BS EN 60950, BS EN 41003, BS EN 60065
- CSA CERTIFICATE #LR111581-1
- UL FILE #E90096


**ELECTRICAL CHARACTERISTICS - 25°**

| 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     | 5    | 2.5  |     | Io = 110mA           |
| Turn-Off Current              | m A     |      | 0.5  |     |                      |
| <b>OUTPUT SPECIFICATIONS</b>  |         |      |      |     |                      |
| Blocking Voltage              | V       | 350  |      |     | Io = 10uA            |
| Continuous Load Current       | m A     |      |      | 110 | If = 5mA             |
| On-Resistance                 | Ω       |      | 35   | 40  | Io = 110mA           |
| Leakage Current               | μ A     |      | 0.2  | 10  | Vo = 350V            |
| 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       | 2500 |      |     | T = 1 minute         |
| -H Suffix                     | V       | 3750 |      |     | T = 1 minute         |
| Turn-On Time                  | m s     |      | 1    | 3   | If = 5mA, Io = 110mA |
| Turn-Off Time                 | m s     |      | 0.5  | 3   | If = 5mA, Io = 110mA |
| Isolation Resistance          | G Ω     | 100  |      |     |                      |
| Coupled Capacitance           | p F     |      | 3    |     |                      |
| Contact Transient Ratio       | V / μ s | 2000 | 7000 |     | dV = 50V             |



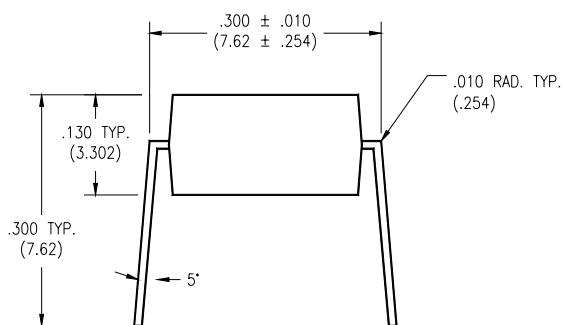
PERFORMANCE DATA



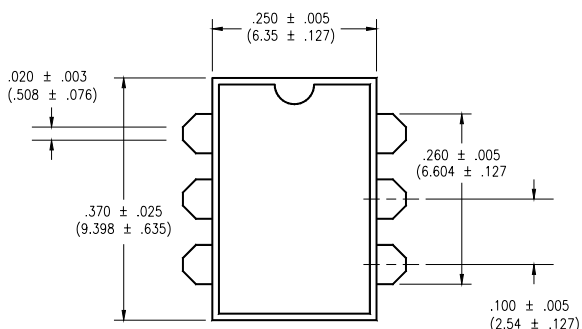


**MECHANICAL DIMENSIONS**

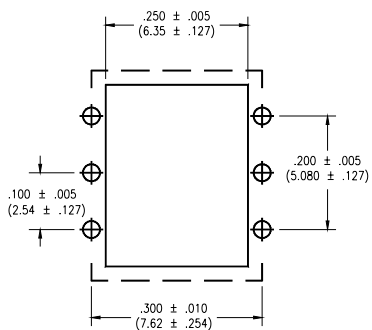
**6 PIN DUAL IN-LINE PACKAGE**



**END VIEW**

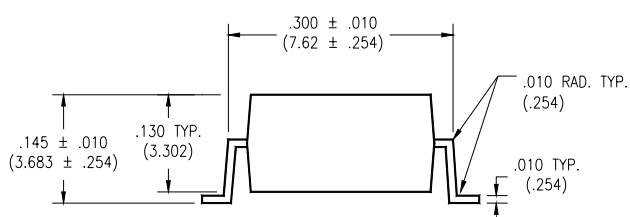


**TOP VIEW**

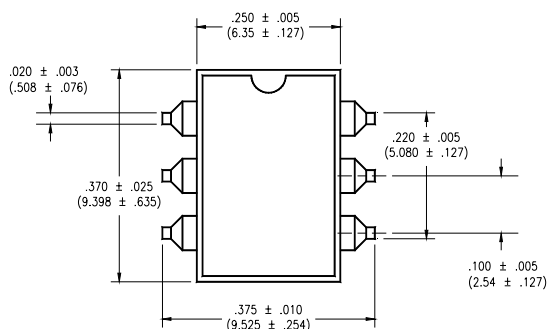


**BOTTOM VIEW/  
BOARD PATTERN**

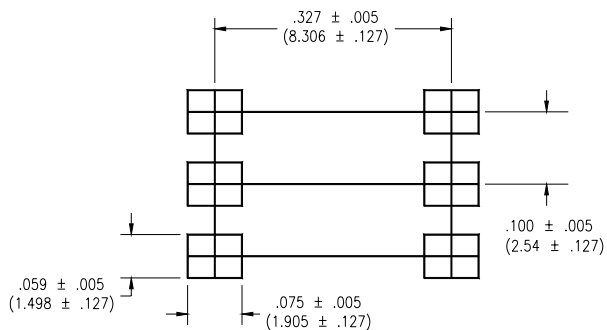
**6 PIN SURFACE MOUNT DEVICE**



**END VIEW**



**TOP VIEW**



**BOTTOM VIEW/  
BOARD PATTERN**