SOLID STATE OPTRONICS

AD8C111




1 Form A
Solid State Relay

DESCRIPTION

The AD8C111 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

- Low input control power consumption (2.5mA TYP)
- 120mA maximum continuous load current
- 35 ohms maximum on-resistance
- High input-to-output isolation
- Long life/high reliability

APPLICATIONS

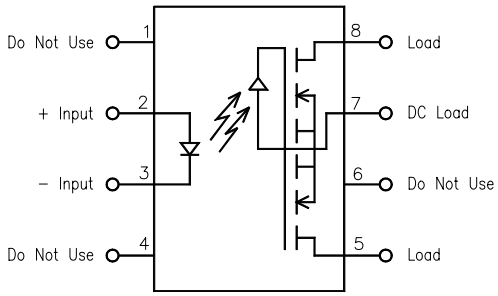
- Multiplexers
- Meter reading systems
- Data Acquisition
- Medical equipment
- Battery monitoring
- Home/Safety security systems

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



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 #608204:
  BS EN 60950, BS EN 41003, BS EN 60065
- CSA CERTIFICATE #LR111581-1
- UL / C-UL, FILE #E201932

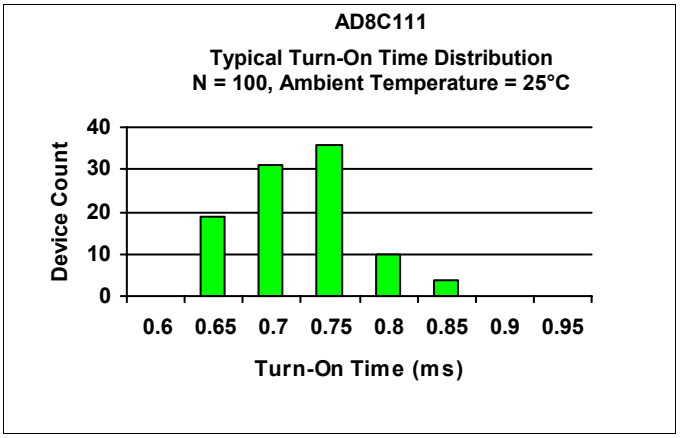
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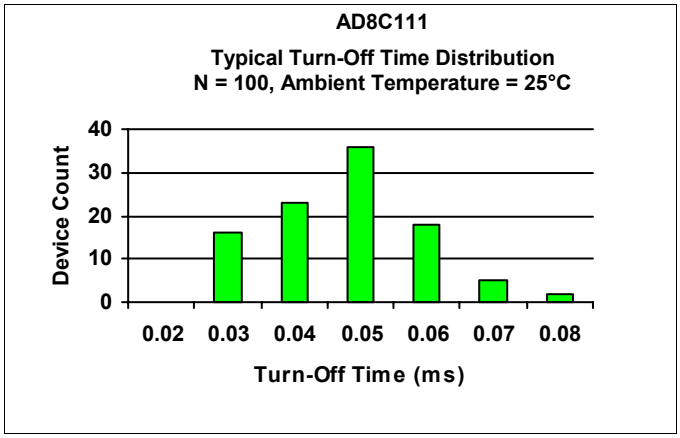
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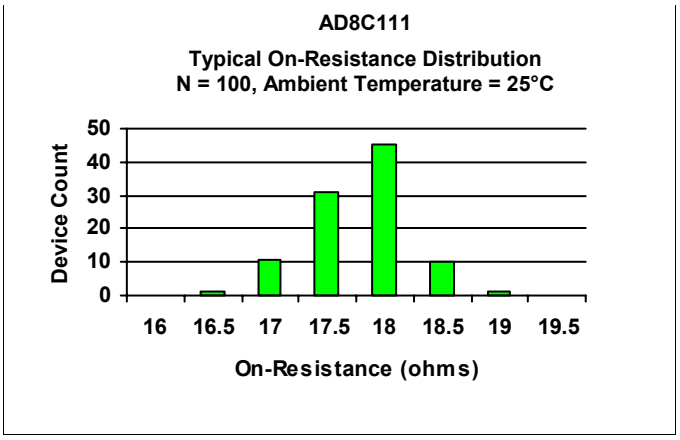
ELECTRICAL CHARACTERISTICS - 25°C

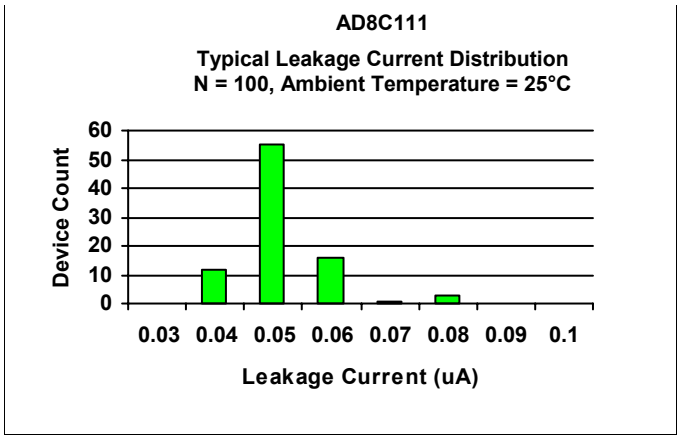
PARAMETER	UNIT	MIN	TYP	MAX	TEST CONDITIONS
INPUT SPECIFICATIONS					
LED Forward Voltage	V		1.2	1.5	If = 10mA
LED Reverse Voltage	V	6	12		Ir = 10uA
Turn-On Current	m A		2.5	5	Io = 120mA
Turn-Off Current	m A		0.5		
OUTPUT SPECIFICATIONS					
Blocking Voltage	V	400			Io = 1uA
Continuous Load Current	m A			120	If = 5mA
On-Resistance	Ω		25	35	Io = 120mA
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
COUPLED SPECIFICATIONS					
Isolation Voltage	V	2500			T = 1 minute
-H Suffix	V	3750			T = 1 minute
Turn-On Time	m s		1	2	If = 5mA, Io = 120mA
Turn-Off Time	m s		0.5	1	If = 5mA, Io = 120mA
Isolation Resistance	G Ω	100			
Coupled Capacitance	p F		3		
Contact Transient Ratio	V / μ s	2000	7000		dV = 50V

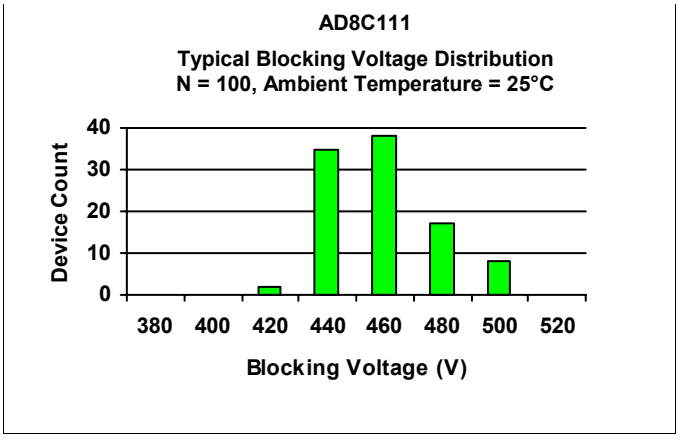
PERFORMANCE DATA

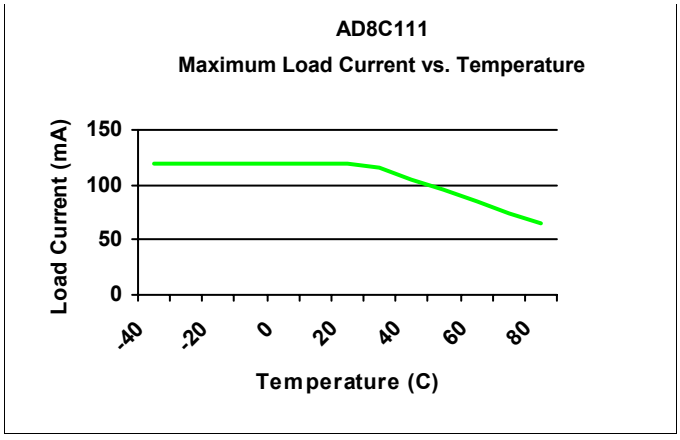






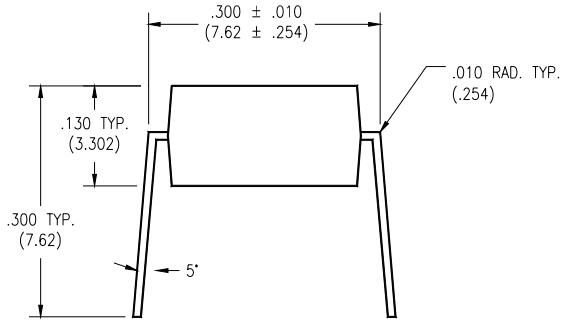




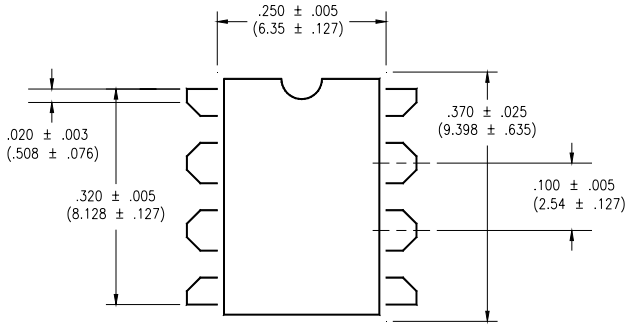


MECHANICAL DIMENSIONS

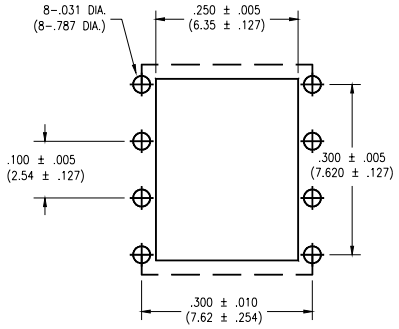
8 PIN DUAL IN-LINE PACKAGE



END VIEW

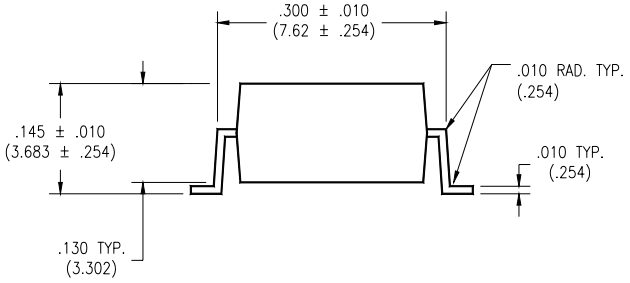


TOP VIEW

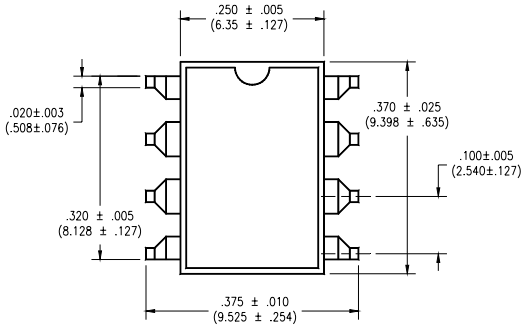


BOTTOM VIEW/
BOARD PATTERN

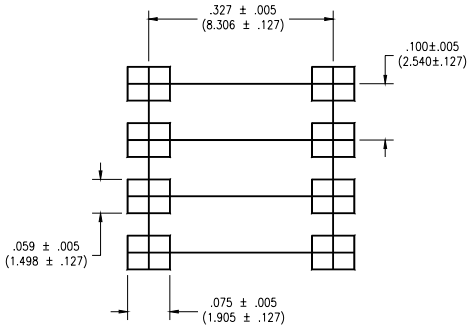
8 PIN SURFACE MOUNT DEVICE



END VIEW



TOP VIEW



BOTTOM VIEW/
BOARD PATTERN

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