



| Parameter | Rating | Units |
|-----------------------|--------|----------------------|
| Blocking Voltage | 60 | V_P |
| Load Current | 600 | mA_{rms} / mA_{DC} |
| Input Control Current | 2 | mA |
| On-Resistance (max) | 1 | Ω |

Features

- Low Input Control Current: 2mA
- 3750V_{rms} Input/Output Isolation
- TTL/CMOS Compatible
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- No EMI/RFI Generation
- Small 8-Pin Package
- Machine Insertable, Wave Solderable
- Surface Mount Tape & Reel Version Available

Applications

- Instrumentation
 - Multiplexers
 - Data Acquisition
 - Electronic Switching
 - I/O Subsystems
- Meters (Watt-Hour, Water, Gas)
- Medical Equipment—Patient/Equipment Isolation
- Security
- Aerospace
- Industrial Controls
- Automotive

Description

The PAA132 Solid State Relay has two independent, single-pole, normally open (1-Form-A), relays in a single 8-pin package. It employs optically coupled MOSFET technology to provide 3750V_{rms} of input to output isolation.

Its optically coupled outputs, which use the patented OptoMOS architecture, are controlled by a highly efficient GaAlAs infrared LED.

By incorporating two independent, single-pole relays into a single 8-pin package, the PAA132 saves board space by providing a more compact design solution than two discrete single-pole relays in a variety of applications.

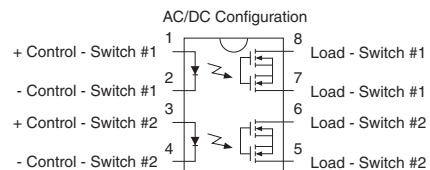
Approvals

- UL Recognized Component: File E76270
- CSA Certified Component: Certificate 1175739
- EN/IEC 60950-1 Certified Component: TUV Certificate B 09 07 49410 004

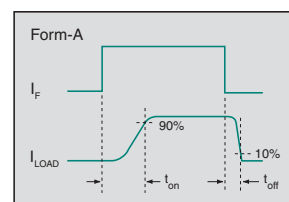
Ordering Information

| Part # | Description |
|-----------|----------------------------------|
| PAA132 | 8-Pin DIP (50/Tube) |
| PAA132S | 8-Pin Surface Mount (50/Tube) |
| PAA132STR | 8-Pin Surface Mount (1,000/Reel) |

Pin Configuration



Switching Characteristics of Normally Open Devices



Absolute Maximum Ratings @ 25°C

| Parameter | Ratings | Units |
|--------------------------------------|-------------|------------------|
| Blocking Voltage | 60 | V _P |
| Reverse Input Voltage | 5 | V |
| Input Control Current Peak (10ms) | 50 | mA |
| | 1 | A |
| Input Power Dissipation ¹ | 150 | mW |
| Total Power Dissipation ² | 800 | mW |
| Isolation Voltage, Input to Output | 3750 | V _{rms} |
| Operational Temperature | -40 to +85 | °C |
| Storage Temperature | -40 to +125 | °C |

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

¹ Derate linearly 1.33 mW / °C

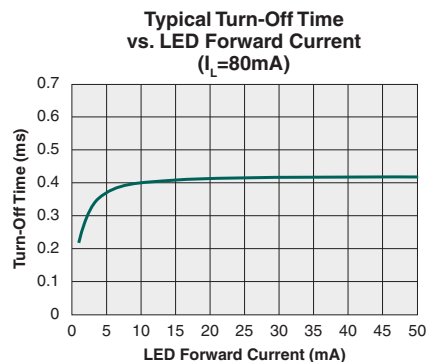
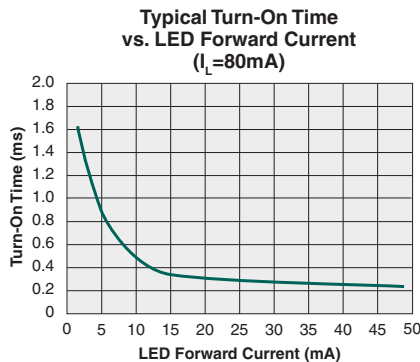
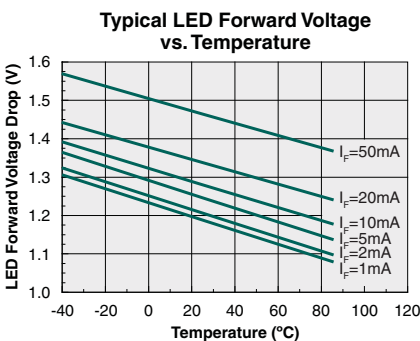
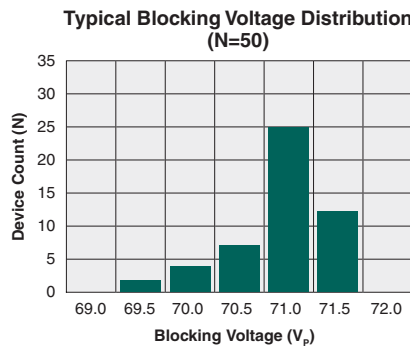
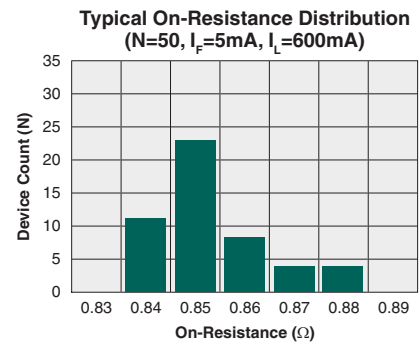
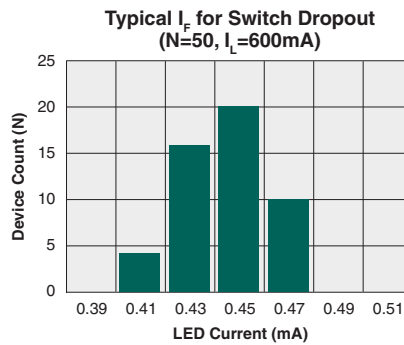
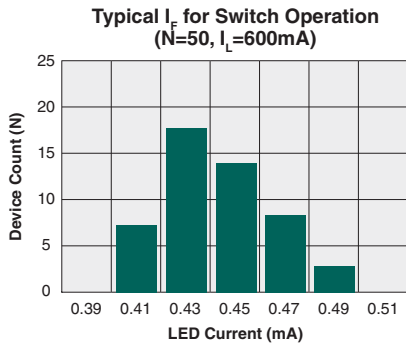
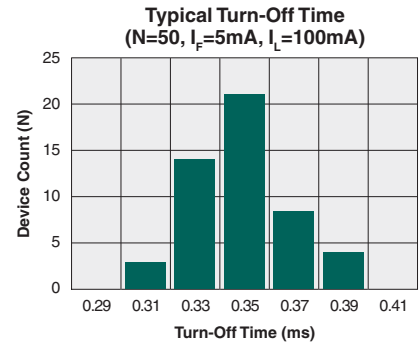
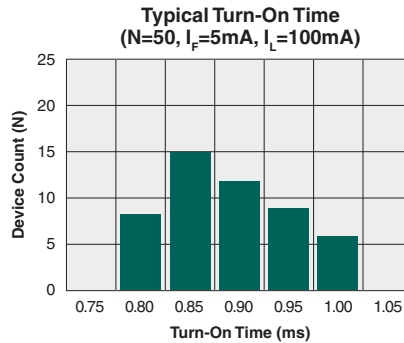
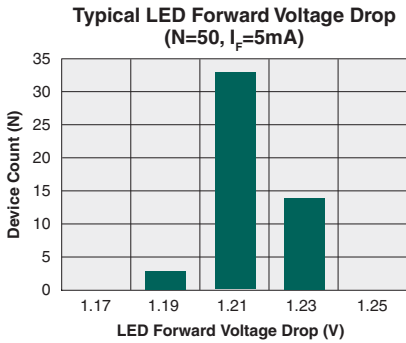
² Derate linearly 6.67 mW / °C

Electrical Characteristics @ 25°C

| Parameter | Conditions | Symbol | Min | Typ | Max | Units |
|-------------------------------------|--|-------------------|-----|------|-----|--------------------------------------|
| Output Characteristics | | | | | | |
| Load Current | - | I _L | - | - | 600 | mA _{rms} / mA _{DC} |
| | | | | | | |
| Peak | t ≤ 10ms | I _{LPK} | - | - | ±2 | A _P |
| On-Resistance | I _L = 600mA | R _{ON} | - | 0.85 | 1 | Ω |
| Off-State Leakage Current | V _L = 60V _P | I _{LEAK} | - | - | 1 | μA |
| Switching Speeds | | | | | | |
| Turn-On | I _F = 5mA, V _L = 10V | t _{on} | - | - | 5 | ms |
| Turn-Off | | t _{off} | - | - | 2 | ms |
| Output Capacitance | V _L = 50V, f = 1MHz | C _{OUT} | - | 25 | - | pF |
| Input Characteristics | | | | | | |
| Input Control Current to Activate | I _L = 600mA | I _F | - | - | 2 | mA |
| Input Control Current to Deactivate | - | I _F | 0.2 | - | - | mA |
| Input Voltage Drop | I _F = 10mA | V _F | 0.9 | 1.2 | 1.4 | V |
| Reverse Input Current | V _R = 5V | I _R | - | - | 10 | μA |
| Common Characteristics | | | | | | |
| Capacitance Input to Output | - | C _{I/O} | - | 3 | - | pF |

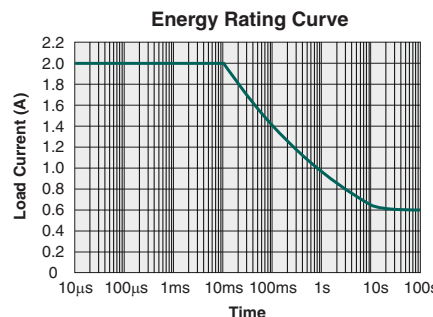
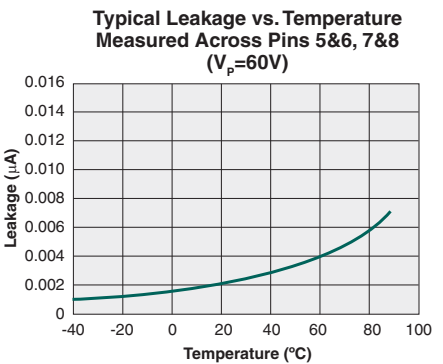
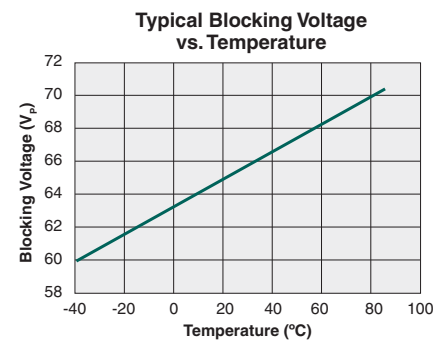
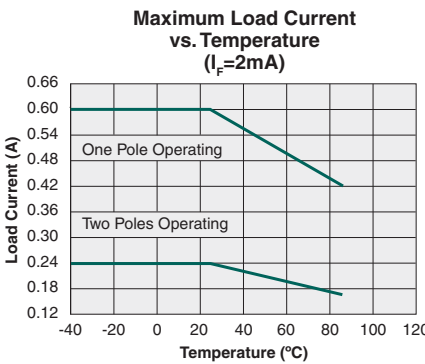
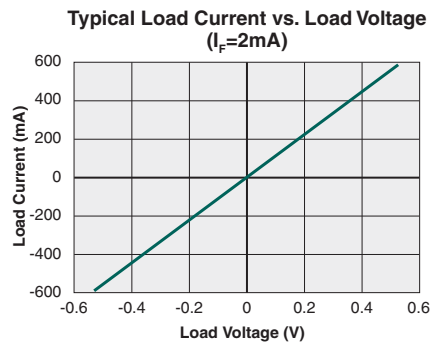
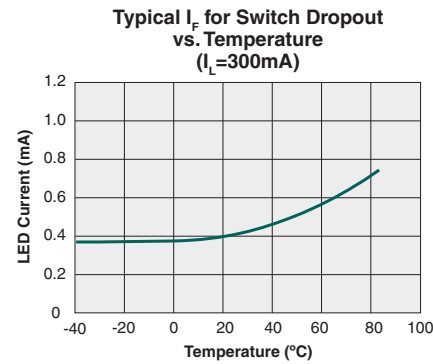
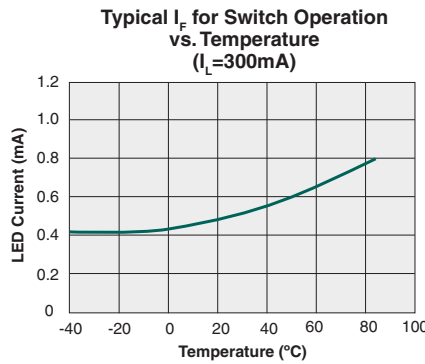
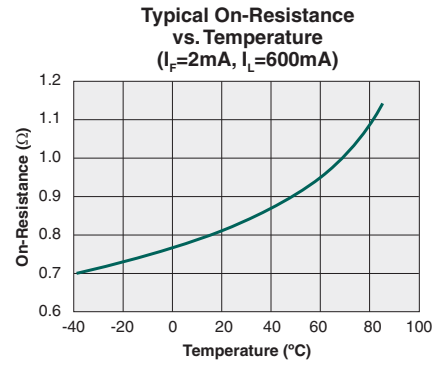
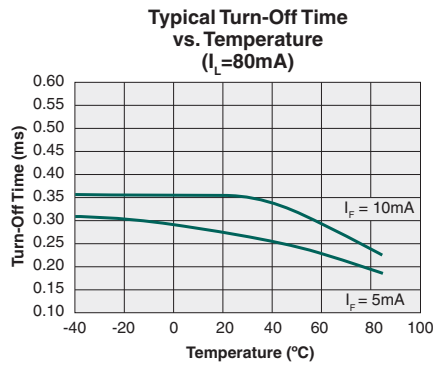
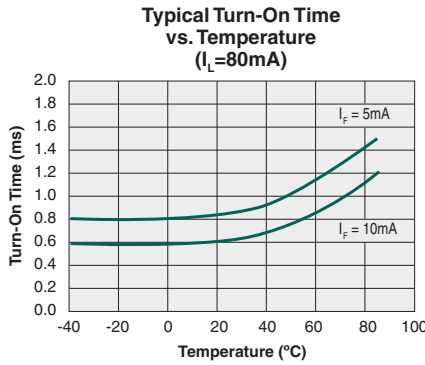
¹ If both poles operate, then the load current must be derated so that the package power dissipation value is not exceeded.

PERFORMANCE DATA @25°C (Unless Otherwise Noted)*



*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

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Manufacturing Information

Moisture Sensitivity



All plastic encapsulated semiconductor packages are susceptible to moisture ingress. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

| Device | Moisture Sensitivity Level (MSL) Rating |
|------------------|---|
| PAA132 / PAA132S | MSL 1 |

ESD Sensitivity



This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

Reflow Profile

This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

| Device | Maximum Temperature x Time |
|------------------|----------------------------|
| PAA132 / PAA132S | 250°C for 30 seconds |

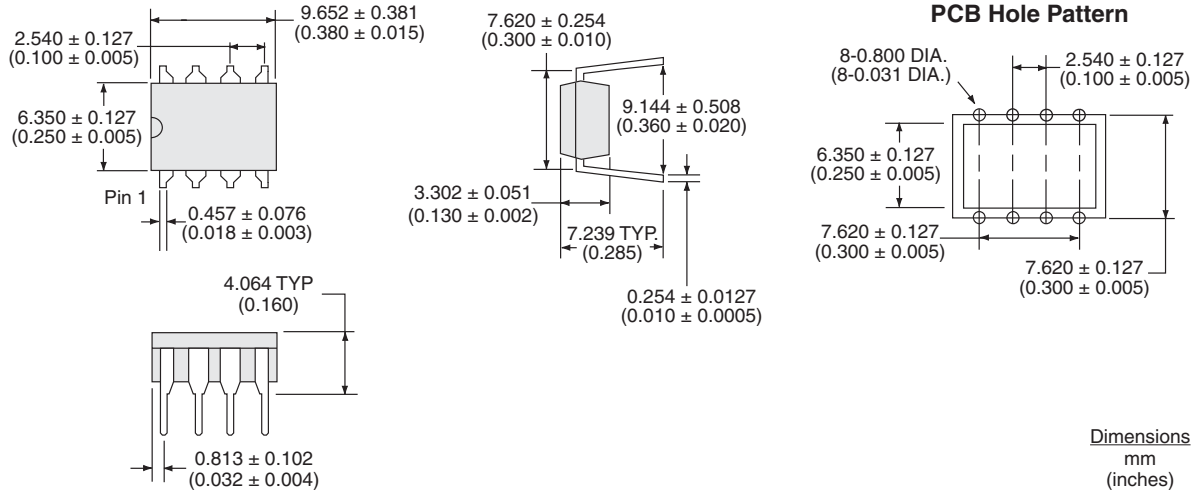
Board Wash

IXYS Integrated Circuits Division recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable. Since IXYS Integrated Circuits Division employs the use of silicone coating as an optical waveguide in many of its optically isolated products, the use of a short drying bake could be necessary if a wash is used after solder reflow processes. Chlorine- or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.

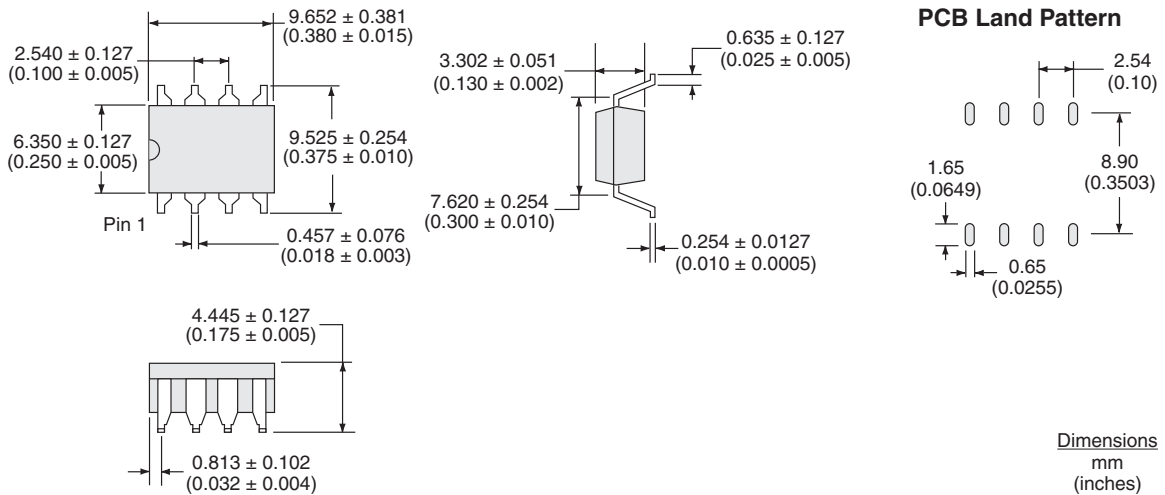


Mechanical Dimensions

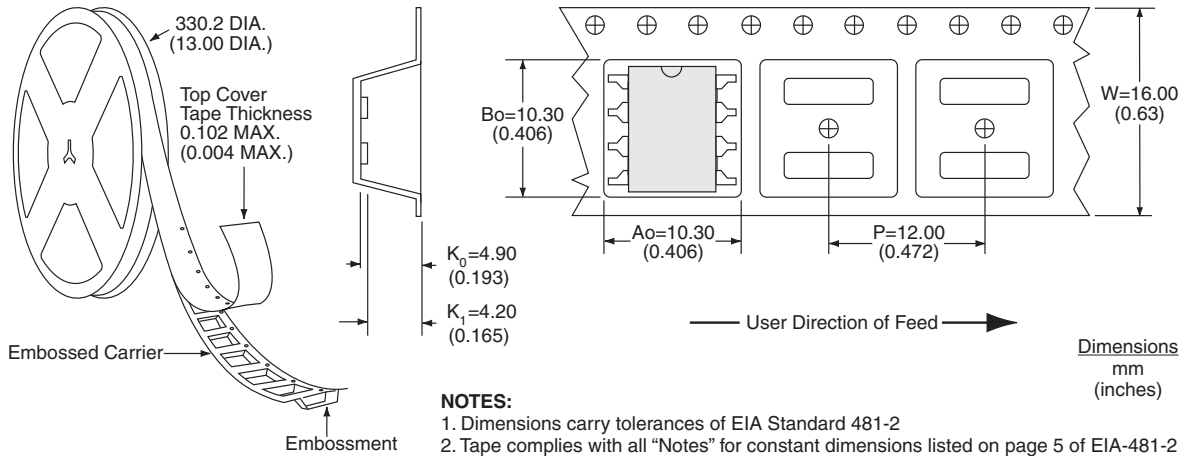
PAA132



PAA132S



PAA132STR Tape & Reel



For additional information please visit our website at: www.ixysic.com

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Specification: DS-PAA132-R04
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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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