



Parameters	Ratings	Units
Blocking Voltage	400	V _P
Load Current	250	mA _{rms} / mA _{DC}
On-Resistance (max)	8	Ω

Features

- 5000V_{rms} Input/Output Isolation
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Small 6-Pin Package
- Machine Insertable, Wave Solderable

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
- Modem Switching (Laptop, Notebooks, Pocket Size)
- Hook Switch
- Dial Pulsing
- Ground Start
- Ringing Injection
- Instrumentation
 - Multiplexers
 - Data Acquisition
 - Electronic Switching
 - I/O Subsystems
- Meters (Watt-Hour, Water, Gas)
- Medical Equipment—Patient/Equipment Isolation
- Security
- Aerospace
- Industrial Controls

Description

PLA191 is a single-pole, normally open (1-Form-A) solid state relay that uses optically coupled MOSFET technology to provide 5000V_{rms} of enhanced input to output isolation.

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

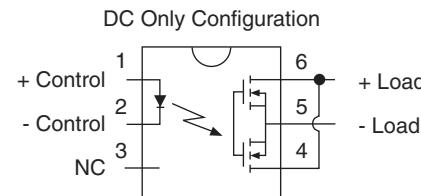
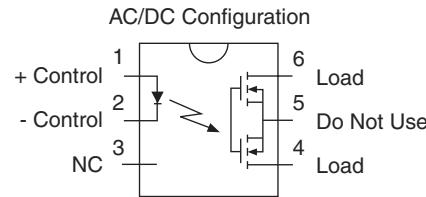
Approvals

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

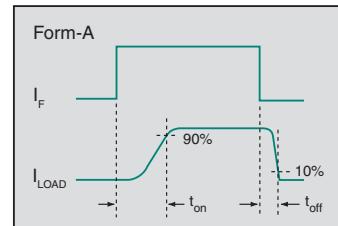
Ordering Information

Part #	Description
PLA191	6-Pin DIP (50/Tube)
PLA191S	6-Pin Surface Mount (50/Tube)
PLA191STR	6-Pin Surface Mount (1000/Reel)

Pin Configuration



Switching Characteristics of Normally Open Devices



Absolute Maximum Ratings @ 25°C

Parameter	Ratings	Units
Blocking Voltage	400	V _P
Reverse Input Voltage	5	V
Input Control Current Peak (10ms)	50	mA
	1	A
Input Power Dissipation ¹	150	mW
Total Package Dissipation ²	800	mW
Isolation Voltage, Input to Output	5000	V _{rms}
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

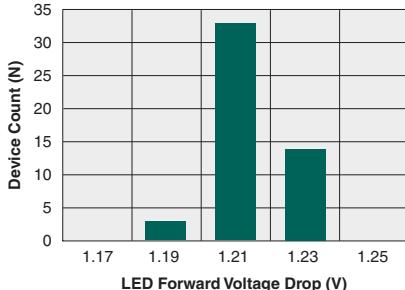
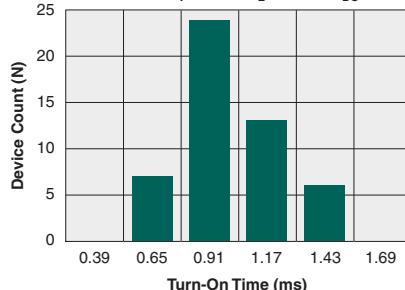
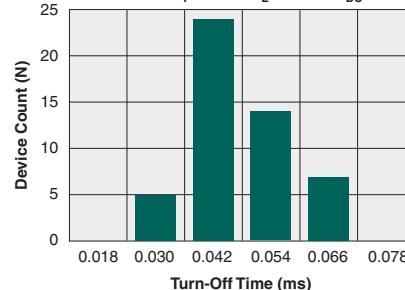
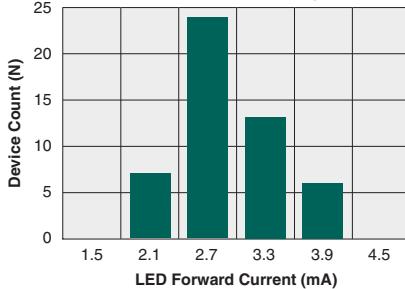
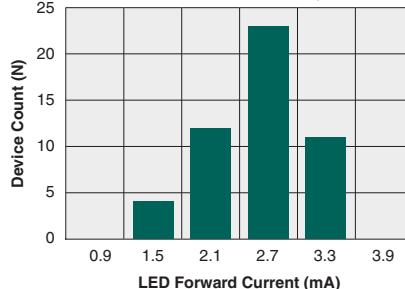
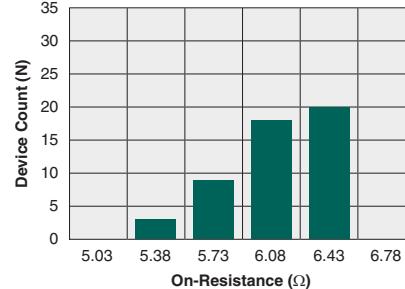
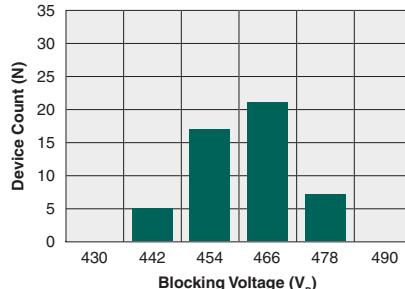
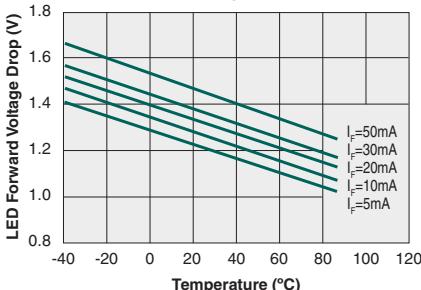
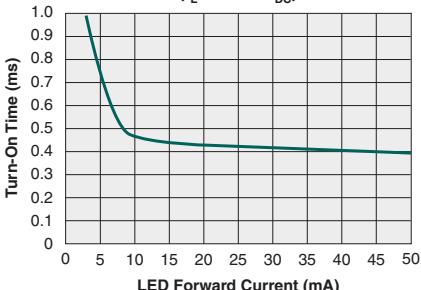
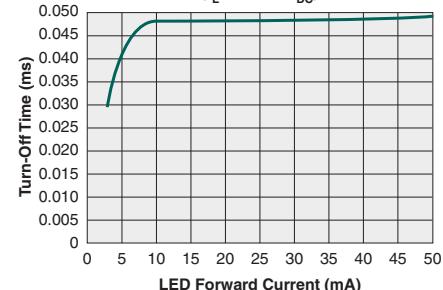
¹ Derate linearly 1.33 mW / °C² Derate linearly 6.67 mW / °C

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.

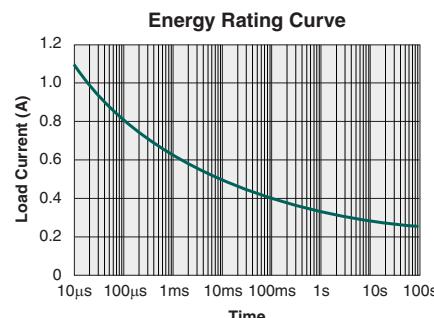
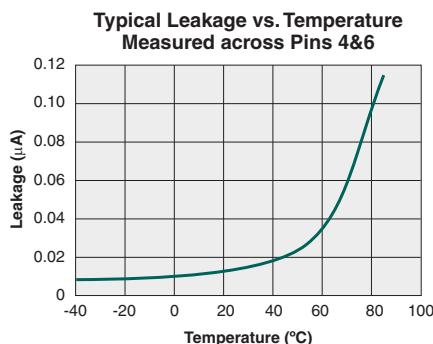
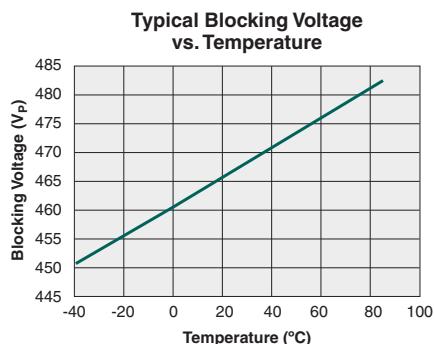
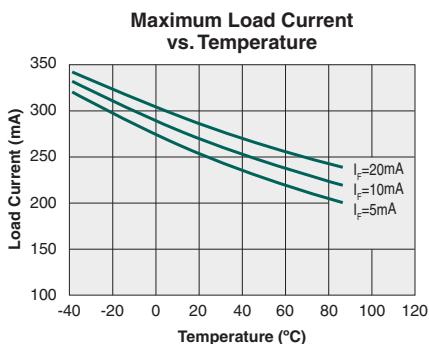
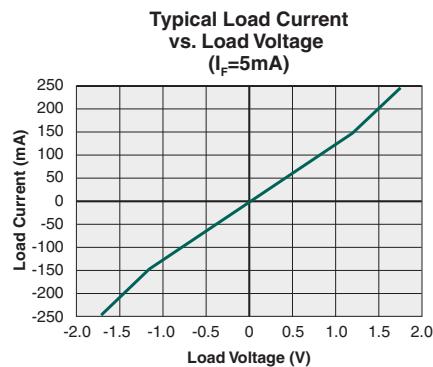
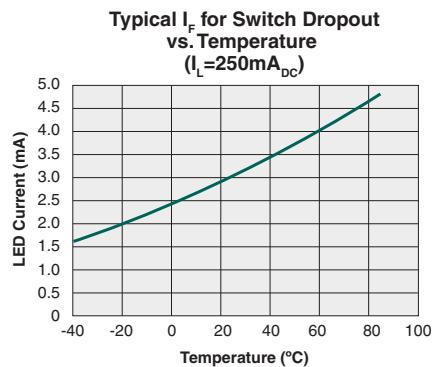
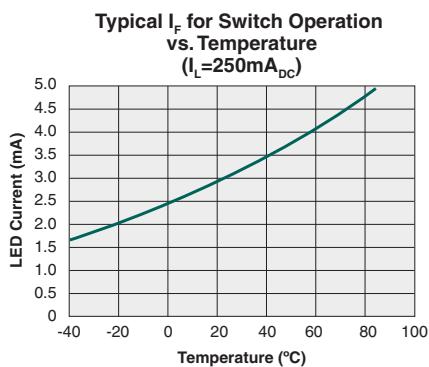
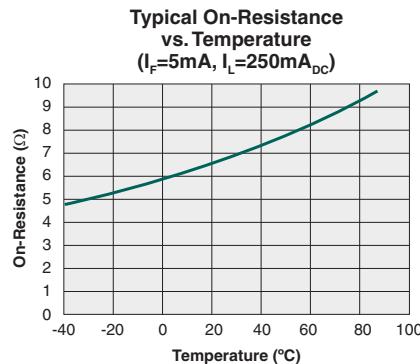
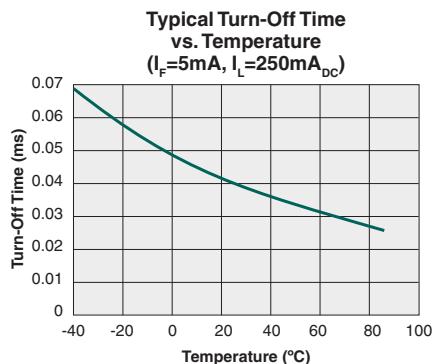
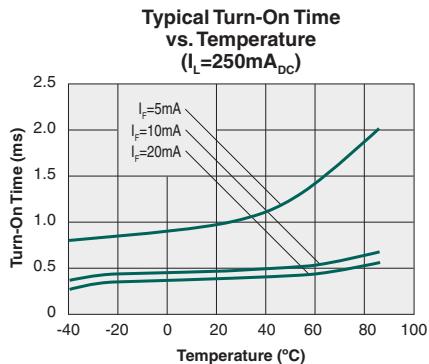
Electrical Characteristics @ 25°C

Parameters	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics						
Load Current, Continuous		I _L	-	-	250	mA _{rms} / mA _{DC}
AC/DC Configuration	-		-	-	350	mA _{DC}
DC Configuration	-		-	-	±500	mA _P
Peak Load Current	t=10ms	I _{LPK}	-	-	8	Ω
On-Resistance ¹		R _{ON}	-	-	3	
AC/DC Configuration	I _L =150mA		-	-	1	μA
DC Configuration	I _L =250mA		-	-	1	ms
Off-State Leakage Current	V _L =400V _P	I _{LEAK}	-	-	3	ms
Switching Speeds		t _{on}	-	-	1	ms
Turn-On	I _F =5mA, V _L =10V	t _{off}	-	-	65	pF
Turn-Off		C _{OUT}	-	-	-	
Output Capacitance	V _L =50V, f=1MHz		-	-	-	
Input Characteristics						
Input Control Current to Activate	I _L =150mA	I _F	-	-	5	mA
Input Control Current to Deactivate	-	I _F	0.4	0.7	-	mA
Input Voltage Drop	I _F =5mA	V _F	0.9	1.2	1.4	V
Reverse Input Current	V _R =5V	I _R	-	-	10	μA
Common Characteristics						
Input to Output Capacitance	-	C _{I/O}	-	3	-	pF

¹ Measurement taken within 1 second of on-time.

PERFORMANCE DATA @ 25°C (Unless Otherwise Noted) *
**Typical LED Forward Voltage Drop
(N=50, $I_F=5\text{mA}$)**

**Typical Turn-On Time
(N=50, $I_F=5\text{mA}$, $I_L=250\text{mA}_{DC}$)**

**Typical Turn-Off Time
(N=50, $I_F=5\text{mA}$, $I_L=250\text{mA}_{DC}$)**

**Typical I_F for Switch Operation
(N=50, $I_L=250\text{mA}_{DC}$)**

**Typical I_F for Switch Dropout
(N=50, $I_L=250\text{mA}_{DC}$)**

**Typical On-Resistance Distribution
(N=50, $I_F=5\text{mA}$, $I_L=250\text{mA}_{DC}$)**

**Typical Blocking Voltage Distribution
(N=50)**

**Typical LED Forward Voltage Drop
vs. Temperature**

**Typical Turn-On Time
vs. LED Forward Current
($I_L=250\text{mA}_{DC}$)**

**Typical Turn-Off Time
vs. LED Forward Current
($I_L=250\text{mA}_{DC}$)**


*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.

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.

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
PLA191 / PLA191S	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
PLA191 / PLA191S	250°C for 30 seconds

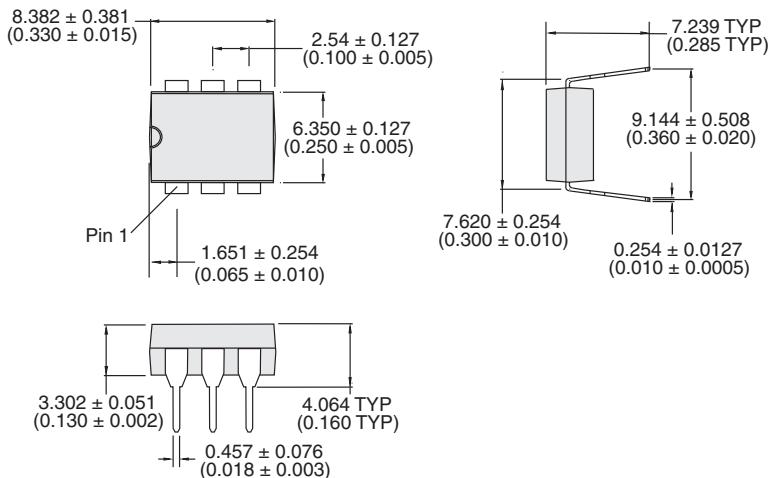
Board Wash

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.

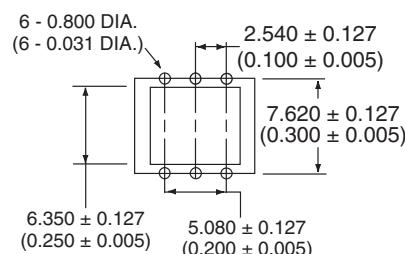


Mechanical Dimensions

PLA191

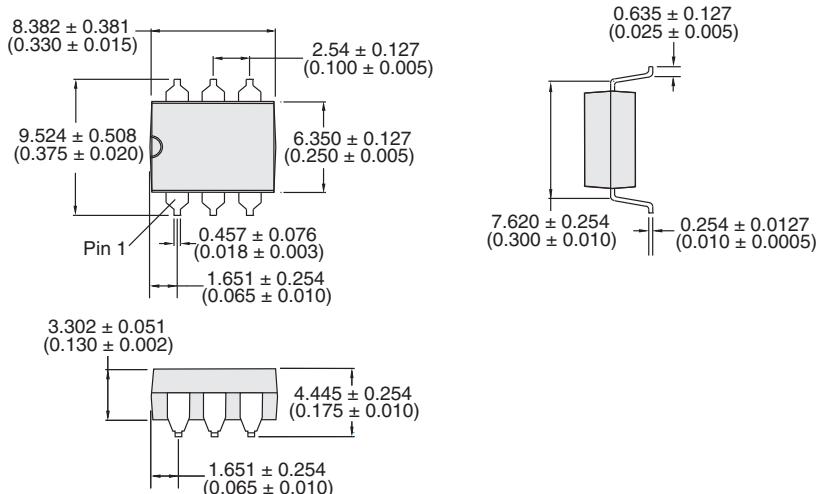


PCB Hole Pattern

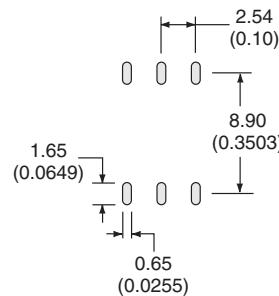


Dimensions
mm
(inches)

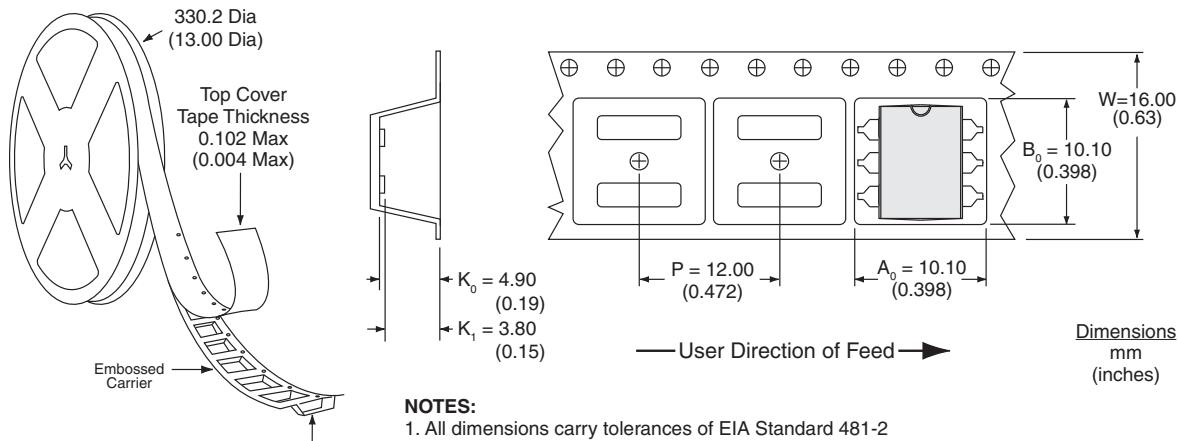
PLA191S



PCB Land Pattern



Dimensions
mm
(inches)

PLA191STR Tape & Reel


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

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The products described in this document are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or where malfunction of IXYS Integrated Circuits Division's product may result in direct physical harm, injury, or death to a person or severe property or environmental damage. IXYS Integrated Circuits Division reserves the right to discontinue or make changes to its products at any time without notice.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помошь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помошь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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