



| | PLA193 | Units |
|---------------------|--------|-------|
| Load Voltage | 600 | V |
| Load Current | 100 | mA |
| Max R _{ON} | 50 | Ω |

Features

- 5000V_{RMS} Input/Output Isolation
- Small 6 Pin DIP Package
- 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
- Machine Insertable, Wave Solderable
- 600 volt blocking

Applications

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

Description

The PLA193 is a 1-Form-A solid state relay that uses optically coupled relay technology to provide an enhanced 5000V isolation barrier between the input and output of the relay. The efficient MOSFET switches use Clares patented OptoMOS architecture. The optically coupled input is controlled by a highly efficient GaAlAs infrared LED.

Approvals

- UL Approved to UL1577
- CSA Certified
- Complies with EN60950

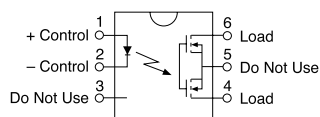
Ordering Information

| Part # | Description |
|-----------|---------------------------------|
| PLA193 | 6 Pin Dip (50/Tube) |
| PLA193S | 6 Pin Surface Mount (50/Tube) |
| PLA193STR | 6 Pin Surface Mount (1000/Reel) |

Pin Configuration

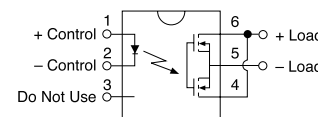
PLA193 Pinout

AC/DC Configuration

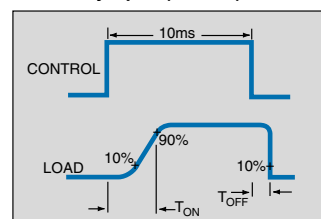


PLA193 Pinout

DC Only Configuration



Switching Characteristics of Normally Open (Form A) Devices



Absolute Maximum Ratings (@ 25° C)

| Parameter | Min | Typ | Max | Units |
|--|------|-----|------------------|------------------|
| Input Power Dissipation | - | - | 150 ¹ | mW |
| Input Control Current | - | - | 50 | mA |
| Peak (10ms) | - | - | 1 | A |
| Reverse Input Voltage | - | - | 5 | V |
| Total Power Dissipation | - | - | 800 ² | mW |
| Isolation Voltage Input to Output | 5000 | - | - | V _{RMS} |
| Operational Temperature | -40 | - | +85 | °C |
| Storage Temperature | -40 | - | +125 | °C |
| Soldering Temperature | | | | |
| DIP Package | - | - | +260 | °C |
| Surface Mount Package (10 Seconds Max.) | - | - | +220 | °C |

¹ Derate Linearly 1.33 mw/°C

² Derate Linearly 6.67 mw/°C

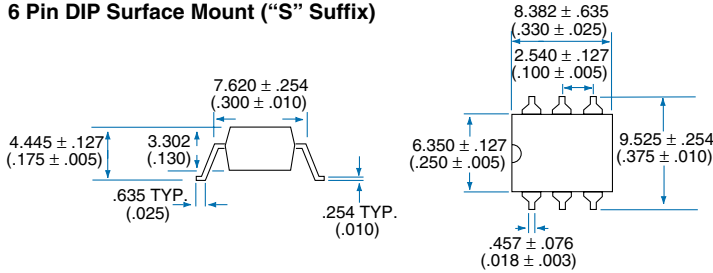
Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.

Electrical Characteristics

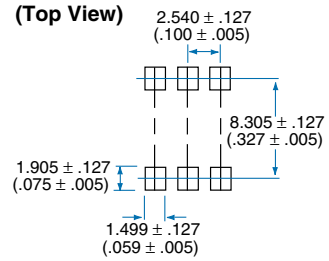
| Parameter | Conditions | Symbol | Min | Typ | Max | Units |
|--------------------------------------|--|-------------------|------|-----|-----|------------------|
| Output Characteristics @ 25°C | | | | | | |
| Load Voltage (Peak) | - | V _L | - | - | 600 | V |
| Load Current (Continuous) | | | | | | |
| AC/DC Configuration | - | I _L | - | - | 100 | mA |
| DC Configuration | - | I _L | - | - | 170 | mA |
| Peak Load Current | 10ms | I _{LPK} | - | - | 350 | mA |
| On-Resistance | | | | | | |
| AC/DC Configuration | I _L =100mA | R _{ON} | - | - | 50 | Ω |
| DC Configuration | I _L =170mA | | - | - | 14 | Ω |
| Off-State Leakage Current | V _L =600V | I _{LEAK} | - | - | 10 | μA |
| Switching Speeds | | | | | | |
| Turn-On | I _F =5mA, V _L =10V | T _{ON} | - | - | 5 | ms |
| Turn-Off | I _F =5mA, V _L =10V | T _{OFF} | - | - | 5 | ms |
| Output Capacitance | 50V; f=1MHz | C _{OUT} | - | 50 | - | pF |
| Input Characteristics @ 25°C | | | | | | |
| Input Control Current | I _L =100mA | I _F | 5 | - | 50 | mA |
| Input Dropout Current | - | I _F | 0.4 | 0.7 | - | mA |
| Input Voltage Drop | I _F =5mA | V _F | 0.9 | 1.2 | 1.4 | V |
| Reverse Input Voltage | - | V _R | - | - | 5 | V |
| Reverse Input Current | V _R =5V | I _R | - | - | 10 | μA |
| Common Characteristics @ 25°C | | | | | | |
| Input to Output Capacitance | - | C _{I/O} | - | 3 | - | pF |
| Input to Output Isolation | (60 seconds) | V _{I/O} | 5000 | - | - | V _{RMS} |

Mechanical Dimensions

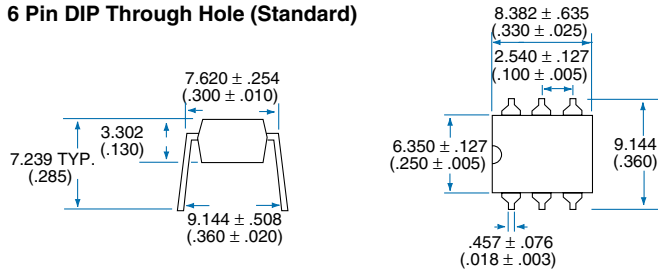
6 Pin DIP Surface Mount ("S" Suffix)



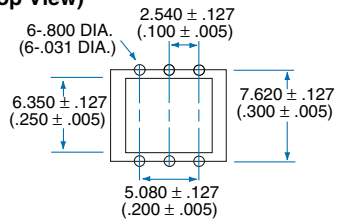
PC Board Pattern (Top View)



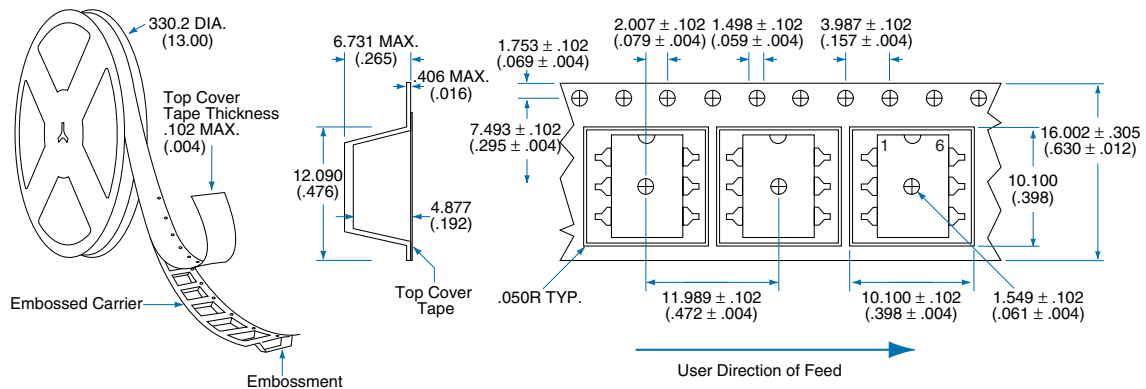
6 Pin DIP Through Hole (Standard)



PC Board Pattern (Top View)



Tape and Reel Packaging for 6 Pin Surface Mount Package



Dimensions
 mm
 (inches)



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