

Single Pole OptoMOS® Relay



	PLA190	Units
Load Voltage	400	V
Load Current	150	mA
Max R _{ON}	22	Ω

Features

- 5000VRMS 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

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, Pocket Size)
 - Hookswitch
 - Dial Pulsing
 - Ground Start
 - Ringer 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

The PLA190 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

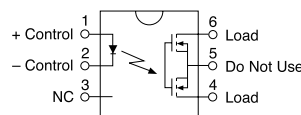
Ordering Information

Part #	Description
PLA190	6 Pin Dip (50/Tube)
PLA190S	6 Pin Surface Mount (50/Tube)
PLA190STR	6 Pin Surface Mount (1000/Reel)

Pin Configuration

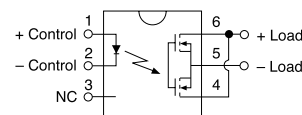
PLA190 Pinout

AC/DC Configuration

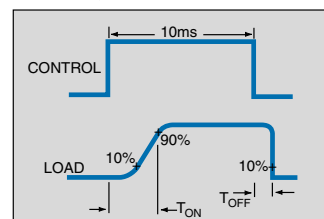


PLA190 Pinout

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

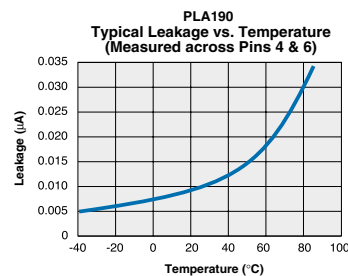
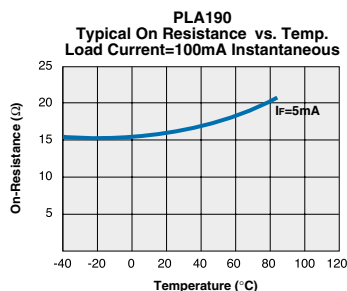
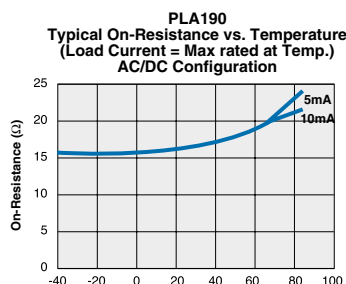
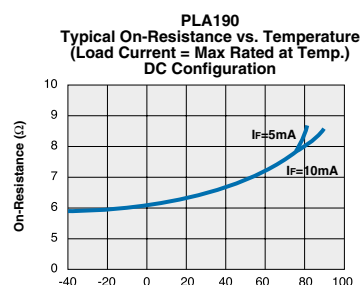
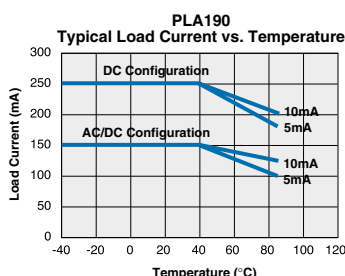
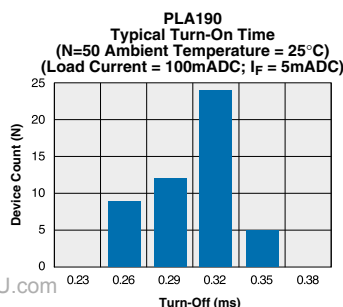
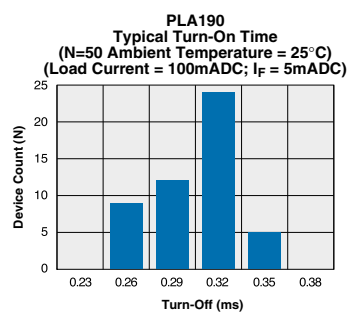
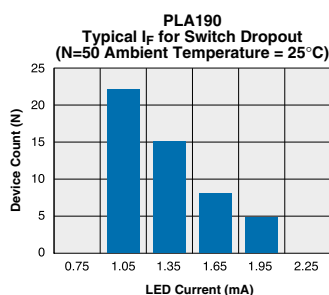
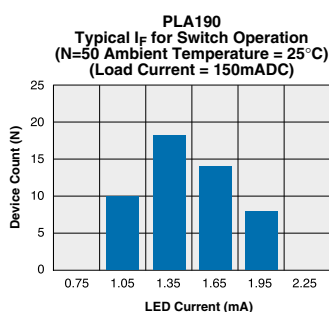
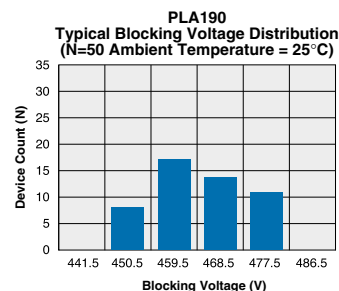
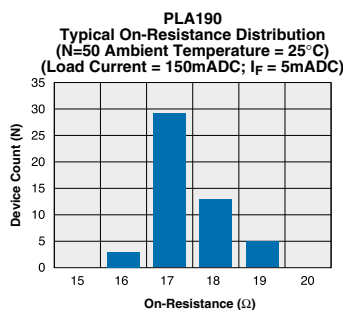
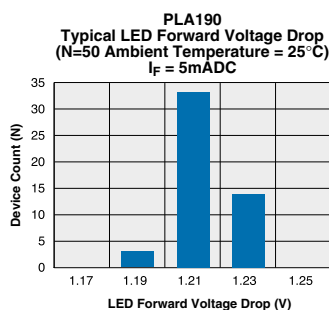
¹ Derate Linearly 1.33 mw/°C² Derate Linearly 6.67 mw/°C

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 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

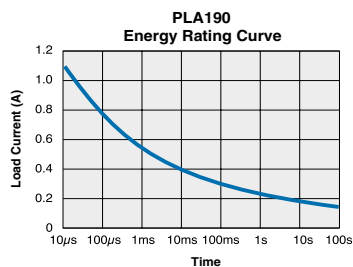
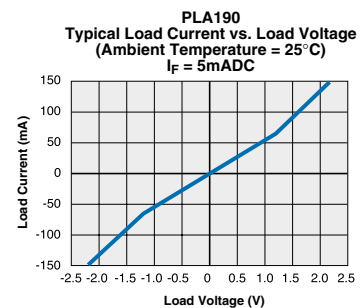
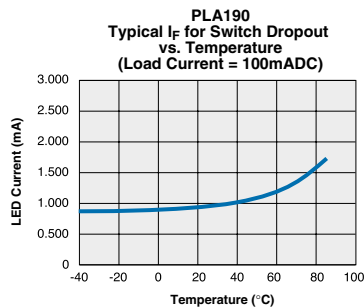
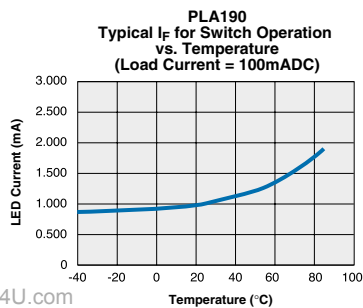
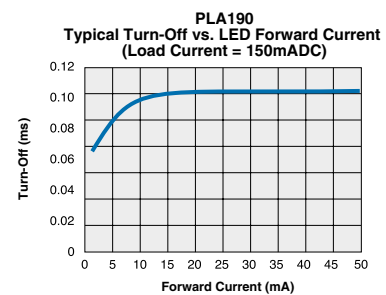
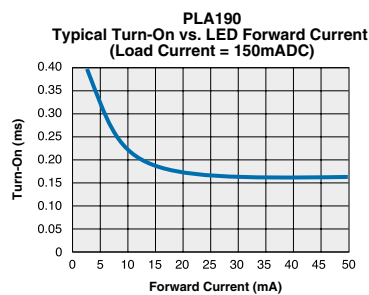
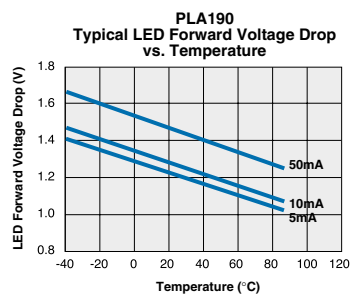
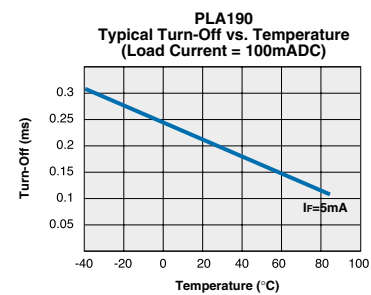
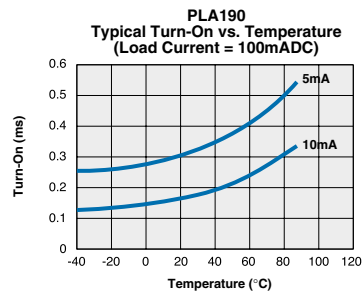
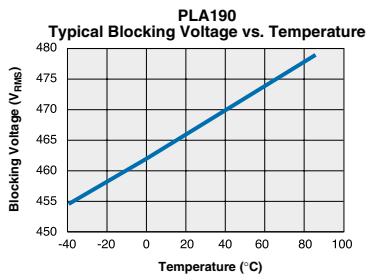
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Voltage (Peak)	-	V _L	-	-	400	V
Load Current (Continuous)	-	I _L	-	-	150	mA
AC/DC Configuration	-	I _L	-	-	250	mA
DC Configuration	-	I _L	-	-	400	mA
Peak Load Current	10ms	I _L	-	-	400	mA
On-Resistance						
AC/DC Configuration	I _L =150mA	R _{ON}	-	-	22	Ω
DC Configuration	I _L =250mA	R _{ON}	-	-	7	Ω
Off-State Leakage Current	V _L =400V	I _{LEAK}	-	-	1	μA
Switching Speeds						
Turn-On	I _F =5mA, V _L =10V	T _{ON}	-	-	1	ms
Turn-Off	I _F =5mA, V _L =10V	T _{OFF}	-	-	0.5	ms
Output Capacitance	50V; f=1MHz	C _{OUT}	-	25	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L =150mA	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	t=60 seconds	V _{I/O}	5000	-	-	V _{RMS}

PERFORMANCE DATA*



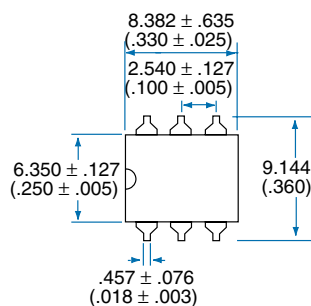
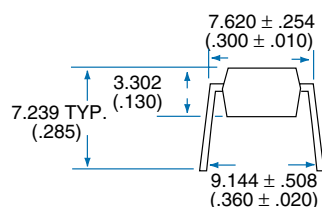
The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

PERFORMANCE DATA*



*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.

6 Pin DIP Through Hole (Standard)



6-.800 DIA.
(6-.031 DIA.)

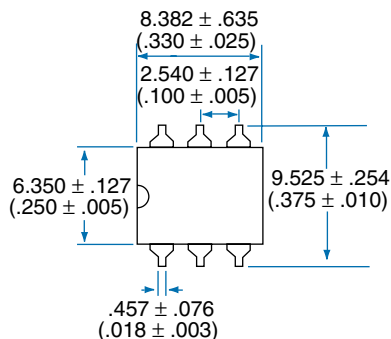
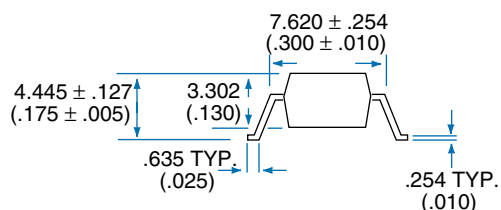
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(.100 ± .005)

6.350 ± .127
(.250 ± .005)

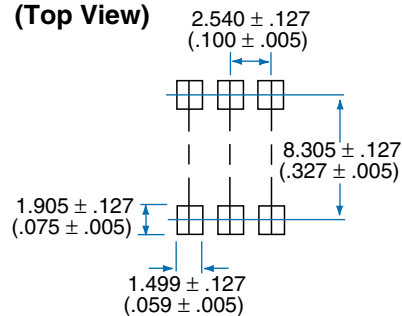
7.620 ± .127
(.300 ± .005)

5.080 ± .127
(.200 ± .005)

6 Pin DIP Surface Mount (“S” Suffix)

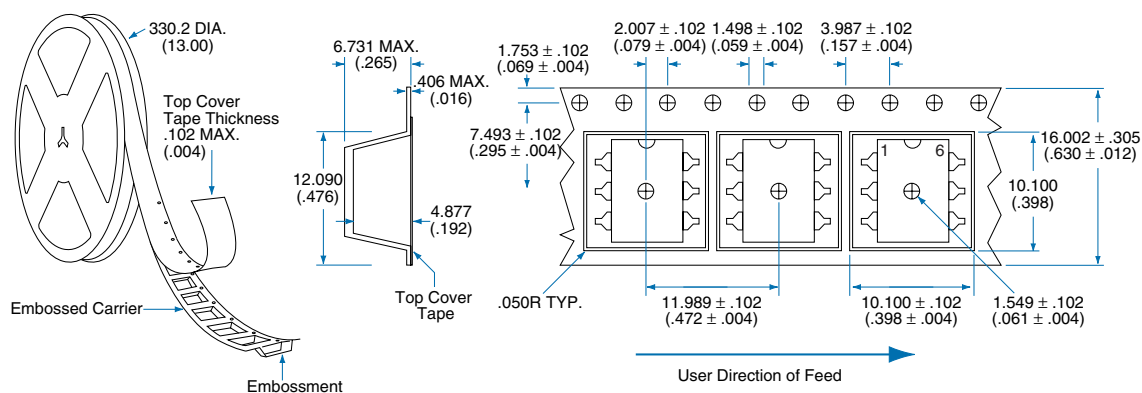


PC Board Pattern
(Top View) 2.540



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Tape and Reel Packaging for 6 Pin Surface Mount Package



Dimensions
mm
(inches)



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