



	PLA134	Units
Load Voltage	100	V
Load Current	350	mA
Max R _{ON}	3	Ω

Features

- Small 6 Pin DIP Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- No Moving Parts
- High Reliability
- Arc-Free With No Snubbing Circuits
- 3750V_{RMS} Input/Output Isolation
- FCC Compatible
- VDE Compatible
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape & Reel Versions 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

Description

The PLA134 is a 1-Form-A solid state relay which uses optically coupled MosFET technology to provide 3750V of input to output isolation. The efficient MosFET switches and photovoltaic die use Clare's patented OptoMOS® architecture. The optically-coupled input is controlled by a highly efficient GaAIAs infrared LED. The PLA134's combination of low on resistance and high load current handling makes it suitable for a variety of industrial applications. Because solid state relays have no moving parts, they can offer faster, bounce-free switching in a more compact surface mount or through hole package than traditional electromechanical relays.

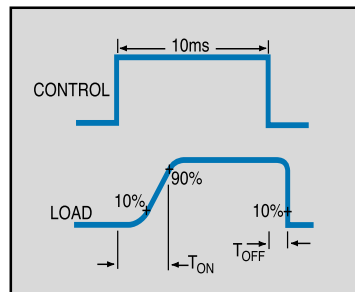
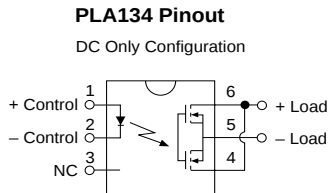
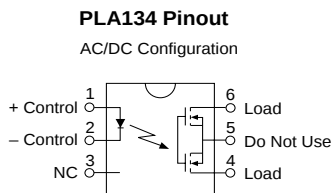
Approvals

- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- BSI Certified to:
 - BS EN 60950:1992 (BS7002:1992)
Certificate #: 7344
 - BS EN 41003:1993
Certificate #: 7344

Ordering Information

Part #	Description
PLA134	6 PIN DIP (50/Tube)
PLA134S	6 PIN Surface Mount (50/Tube)
PLA134STR	6 PIN Surface Mount (1,000/Reel)

Pin Configuration



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	3750	-	-	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

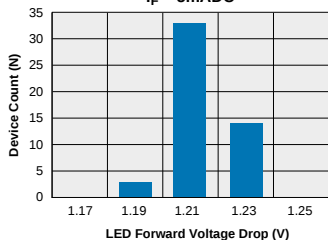
Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to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

Electrical Characteristics

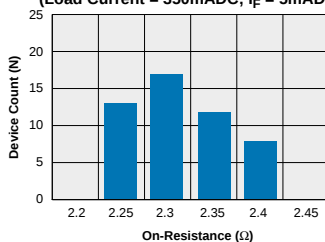
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Output Characteristics @ 25°C						
Load Voltage (Peak)	-	V _L	-	-	100	V
Load Current (Continuous)	-	I _L	-	-	350	mA
AC/DC Configuration	-	I _L	-	-	750	mA
DC Configuration	-	I _L	-	-	1.0	A
Peak Load Current	10ms	I _{LPK}	-	-	1.0	A
On-Resistance						
AC/DC Configuration	I _L =350mA	R _{ON}	-	-	3.0	Ω
DC Configuration	I _L =750mA	R _{ON}	-	-	0.8	Ω
Off-State Leakage Current	V _L =100V	I _{LEAK}	-	-	1	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	-	-	50	-	pF
Capacitance						
Input to Output	-	-	-	3	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L =350mA	I _F	5	-	50	mA
Input Dropout Current	-	I _F	0.4	0.7	-	mA
Input Voltage Drop	I _F =10mA	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
Input to Output Capacitance	-	C _{I/O}	-	3	-	pF
Input to Output Isolation	-	V _{I/O}	3750	-	-	V _{RMS}

Performance Data*

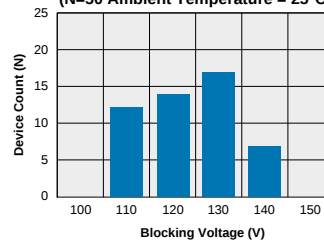
PLA134
Typical LED Forward Voltage Drop
(N=50 Ambient Temperature = 25°C)
 $I_F = 5\text{mADC}$



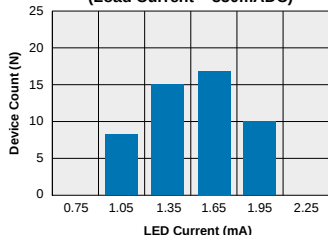
PLA134
Typical On-Resistance Distribution
(N=50 Ambient Temperature = 25°C)
(Load Current = 350mADC; $I_F = 5\text{mADC}$)



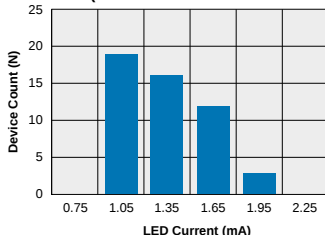
PLA134
Typical Blocking Voltage Distribution
(N=50 Ambient Temperature = 25°C)



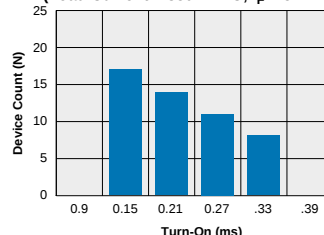
PLA134
Typical I_F for Switch Operation
(N=50 Ambient Temperature = 25°C)
(Load Current = 350mADC)



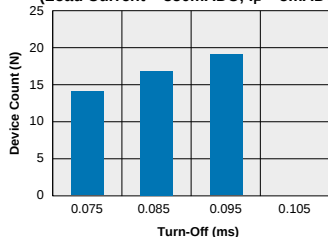
PLA134
Typical I_F for Switch Dropout
(N=50 Ambient Temperature = 25°C)
(Load Current = 350mADC)



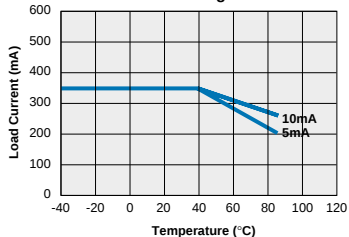
PLA134
Typical Turn-On Time
(N=50 Ambient Temperature = 25°C)
(Load Current = 350mADC; $I_F = 5\text{mADC}$)



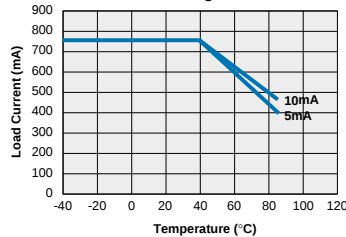
PLA134
Typical Turn-Off Time
(N=50 Ambient Temperature = 25°C)
(Load Current = 350mADC; $I_F = 5\text{mADC}$)



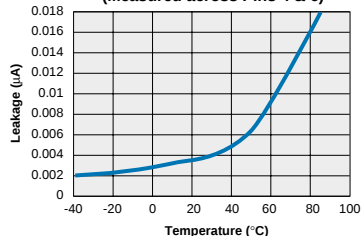
PLA134
Typical Load Current vs. Temperature
AC/DC Configuration



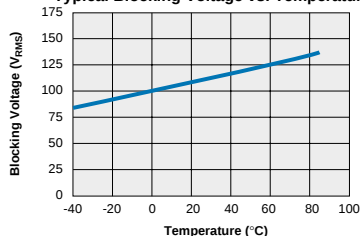
PLA134
Typical Load Current vs. Temperature
DC Configuration



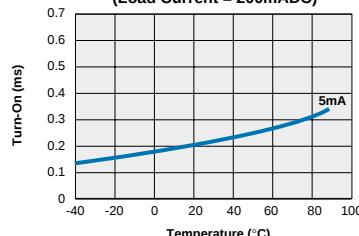
PLA134
Typical Leakage vs. Temperature
(Measured across Pins 4 & 6)



PLA134
Typical Blocking Voltage vs. Temperature

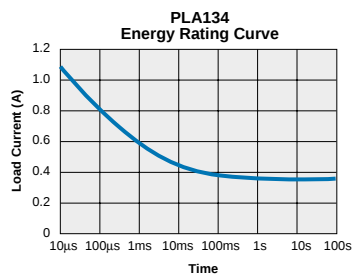
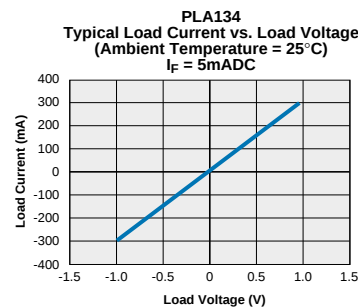
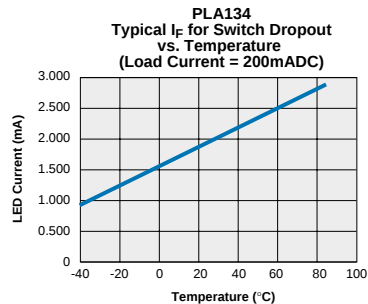
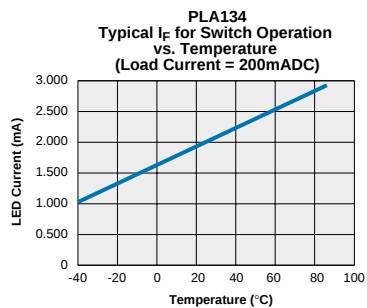
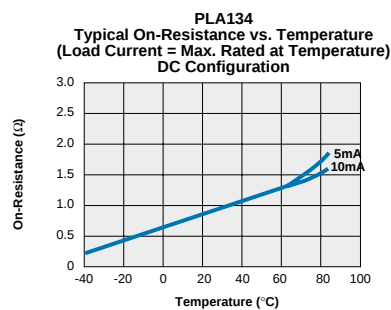
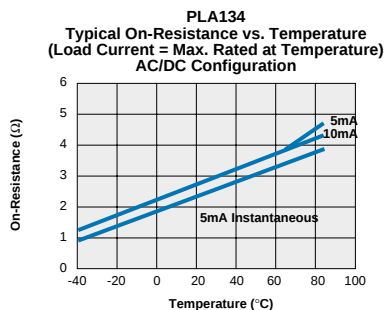
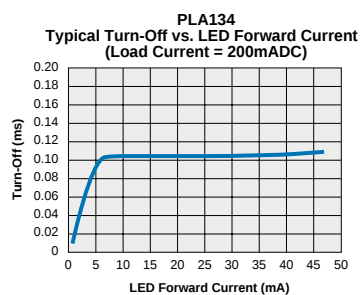
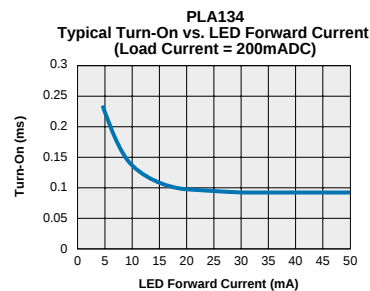
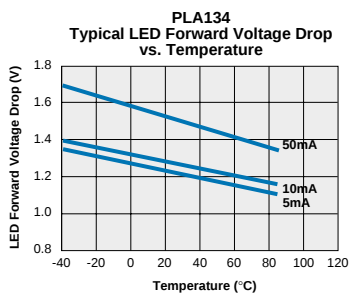
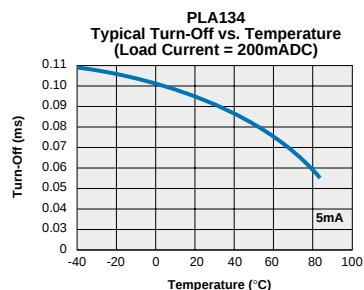


PLA134
Typical Turn-On vs. Temperature
(Load Current = 200mADC)



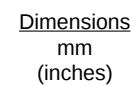
*The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

Performance Data*



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6 Pin DIP Through Hole (Standard)



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