

	CPC1219YA	Units
Blocking Voltage	350	V _p
Load Current	100	mA
Max R _{ON}	50	Ω

Features

- Small 8 Pin 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 Tape & Reel Version Available

Applications

- Telecommunications
 - Telecom Switching
 - Tip/Ring Circuits
 - Modem Switching (Laptop, Notebook, 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

The dual 1-Form-A XAA170 solid state relay has two independent, optically coupled, normally open single-pole relays in a single 8-pin package. Clare's patented OptoMOS architecture makes available the optically coupled technology necessary to activate the output's efficient MOSFET switches while providing a 3750V_{rms} input-to-output isolation barrier. Control of the isolated output is accomplished by means of a highly effective GaAlAs infrared LED at the input.

By incorporating two independent single-pole relays into a single 8-pin package, the XAA170 saves board space by providing a more compact design solution than two discrete single-pole relays in a variety of applications.

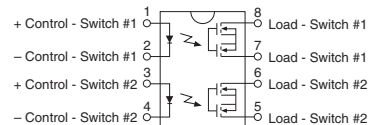
Approvals

- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- EN/IEC 60950-1 compliant

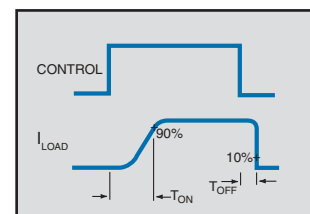
Ordering Information

Part #	Description
XAA170	8 Pin DIP (50/Tube)
XAA170P	8 Pin Flatpack (50/Tube)
XAA170PTR	8 Pin Flatpack T&R (1000/Reel)
XAA170S	8 Pin Surface Mount (50/Tube)
XAA170STR	8 Pin Surface Mount T&R (1000/Reel)

Pin Configuration



Switching Characteristics of Normally Open (Form A) Devices



Absolute Maximum Ratings (@ 25° C)

Parameter	Ratings	Units
Blocking Voltage	350	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

¹ Derate Linearly 1.33 mw / °C

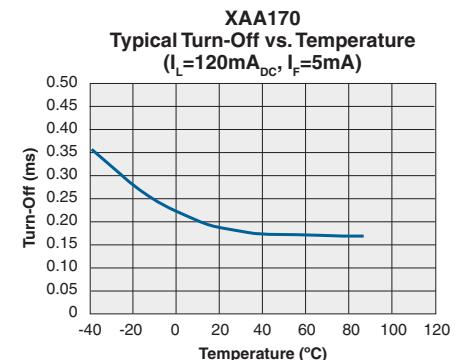
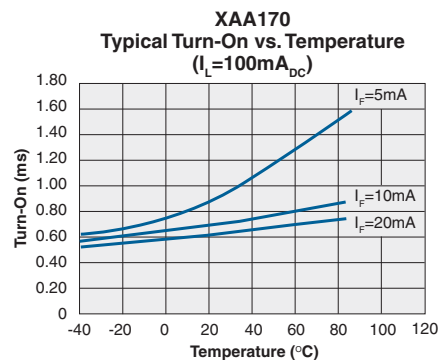
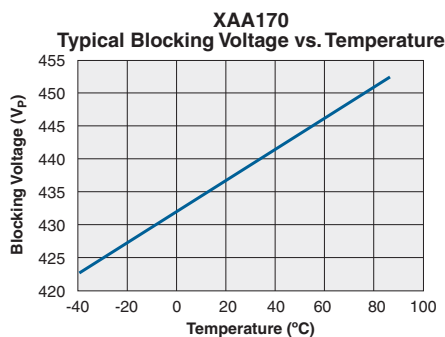
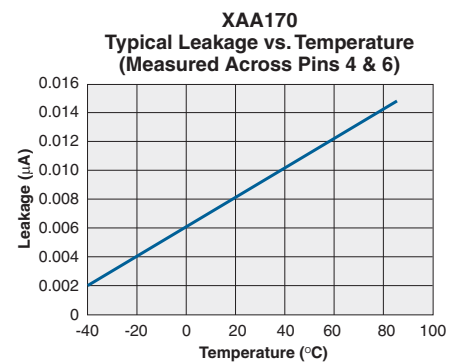
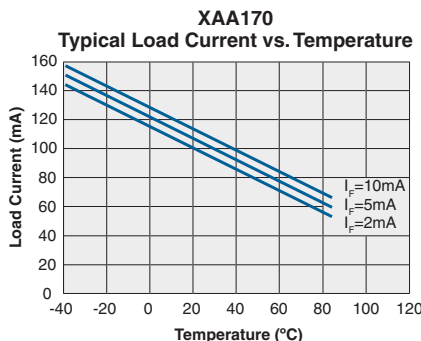
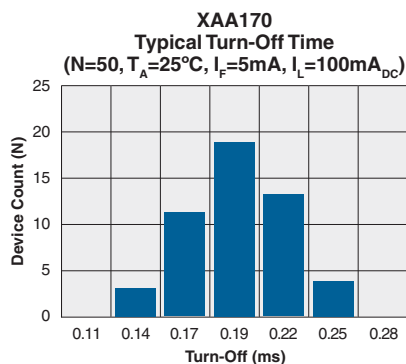
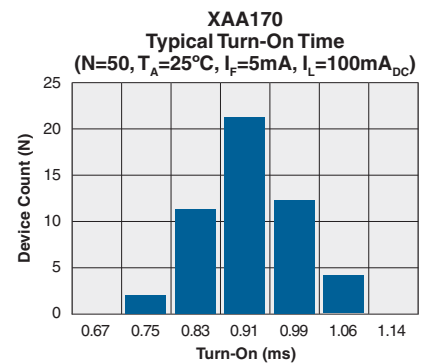
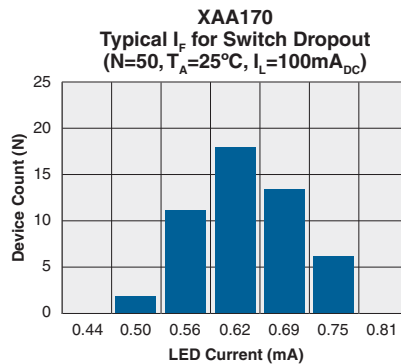
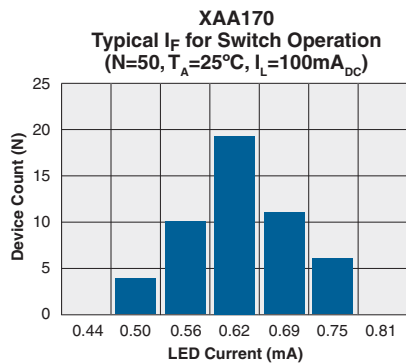
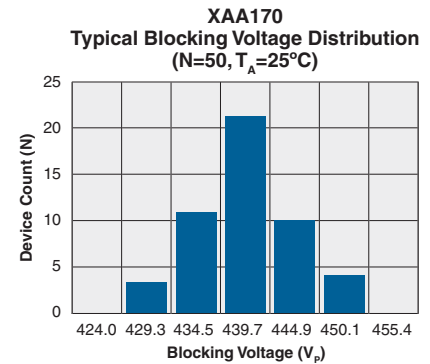
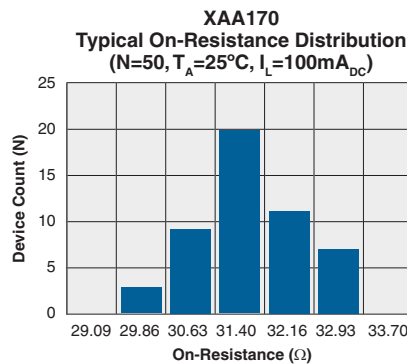
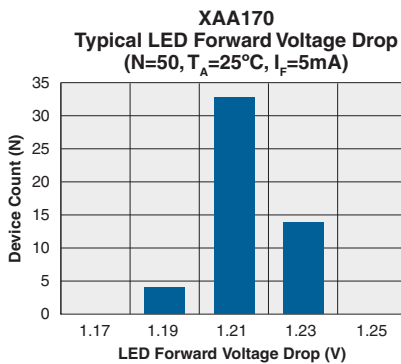
² Derate Linearly 6.67 mw / °C

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 conditions beyond those indicated in the operational sections of this data sheet is not implied.

Electrical Characteristics

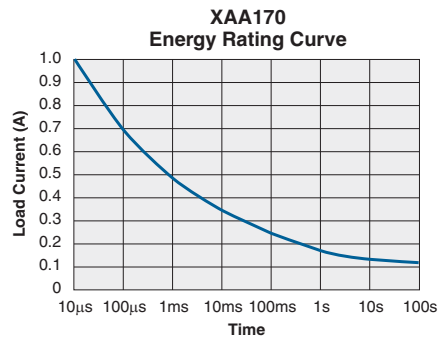
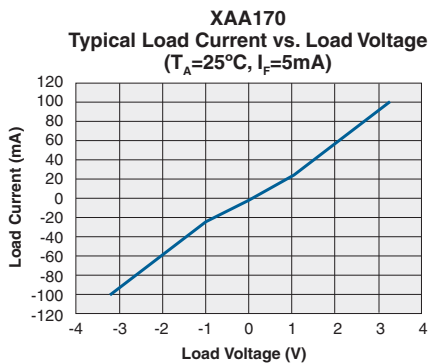
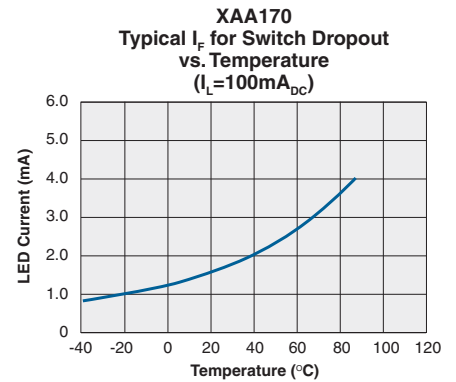
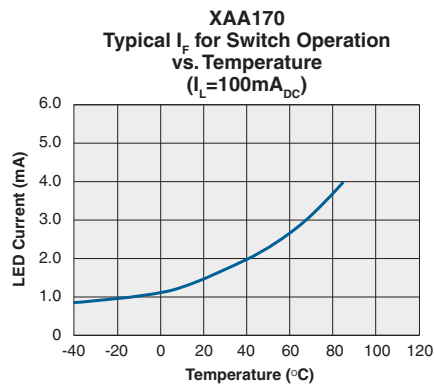
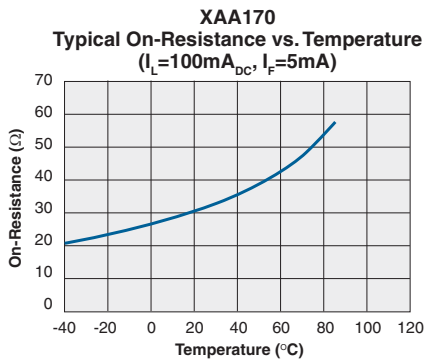
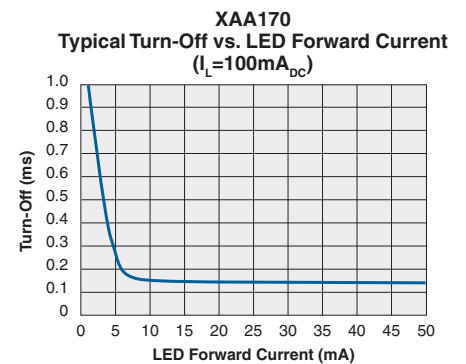
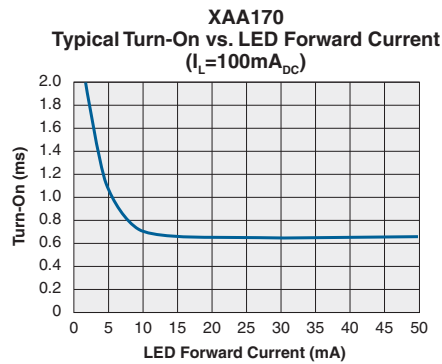
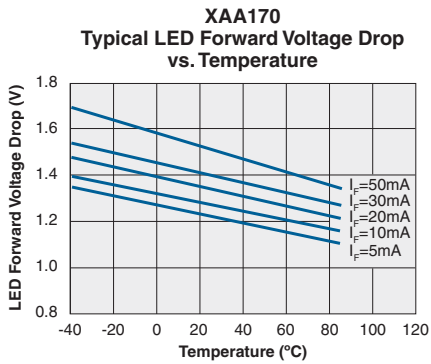
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Current, Continuous	-	I _L	-	-	100	mA
Peak Load Current	t=10ms	I _{LPK}	-	-	350	mA
On-Resistance	I _L =100mA	R _{ON}	-	33	50	Ω
Off-State Leakage Current	V _L =350V	I _{LEAK}	-	-	1	μA
Switching Speeds						
Turn-On	I _F = 5mA, V _L = 10V	T _{ON}	-	-	5	ms
Turn-Off		T _{OFF}	-	-	5	ms
Output Capacitance	V _L =50V, f=1MHz	C _{OUT}	-	25	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L = 100mA	I _F	-	-	5	mA
Input Dropout Current	-	-	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 @ 25°C						
Capacitance Input to Output	-	-	-	3	-	pF

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*



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MANUFACTURING INFORMATION

Soldering

For proper assembly, the component must be processed in accordance with the current revision of IPC/JEDEC standard J-STD-020. Failure to follow the recommended guidelines may cause permanent damage to the device resulting in impaired performance and/or a reduced lifetime expectancy.

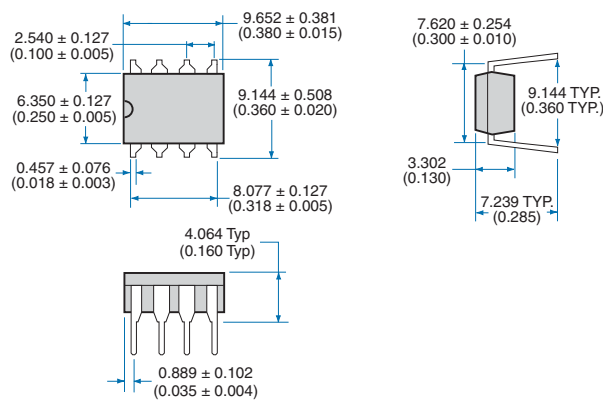
Washing

Clare does not recommend ultrasonic cleaning or the use of chlorinated solvents.

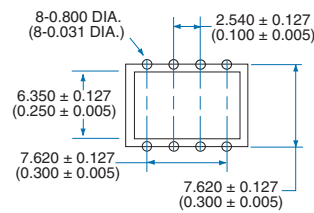


MECHANICAL DIMENSIONS

8-Pin DIP Through-Hole Package

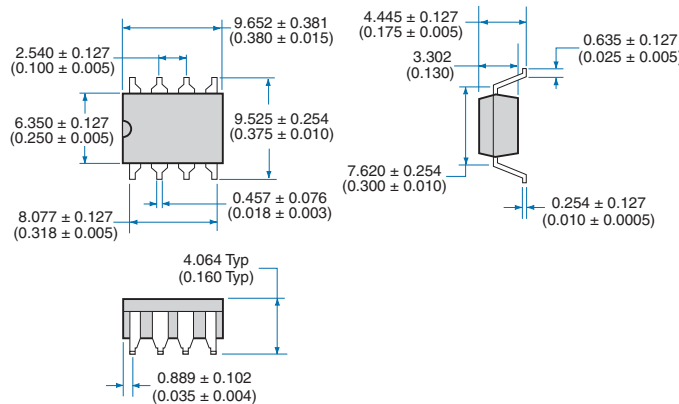


PC Board Pattern

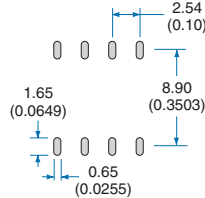


Dimensions
mm
(inches)

8-Pin Surface Mount Package

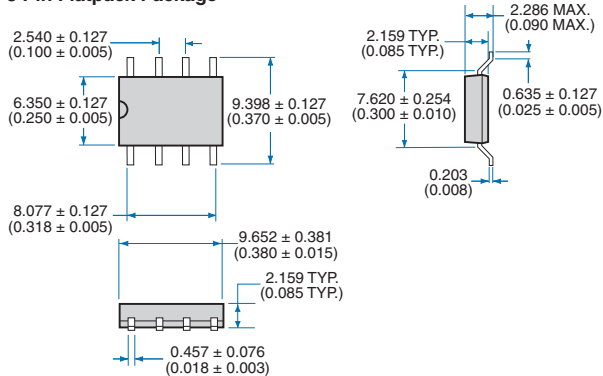


Recommended PCB Land Pattern

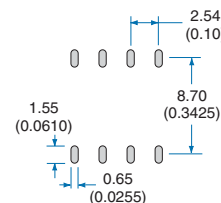


Dimensions
mm
(inches)

8 Pin Flatpack Package



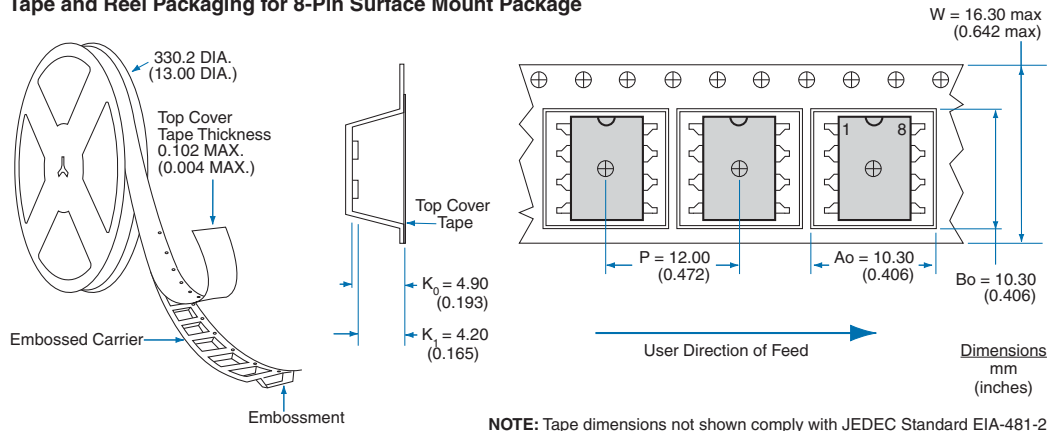
Recommended PCB Land Pattern



Dimensions
mm
(inches)

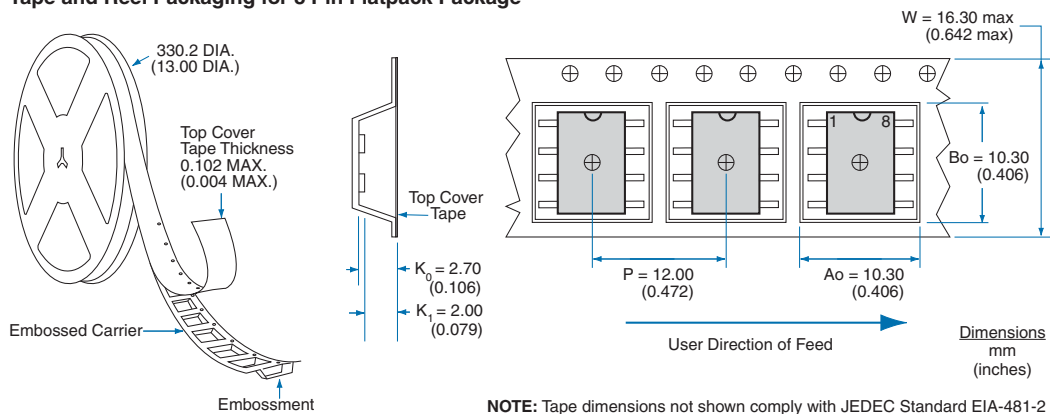
MECHANICAL DIMENSIONS

Tape and Reel Packaging for 8-Pin Surface Mount Package



NOTE: Tape dimensions not shown comply with JEDEC Standard EIA-481-2

Tape and Reel Packaging for 8 Pin Flatpack Package



NOTE: Tape dimensions not shown comply with JEDEC Standard EIA-481-2

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