

Parameters	Ratings	Units
Peak Blocking Voltage	350	V _P
Load Current	120	mA
Max On-resistance	30	Ω

Features

- 5000V_{rms} Input/Output Isolation
- 350V_P Blocking Voltage
- 100% Solid State
- Small 4-Pin Package
- Low Drive Power Requirements (TTL/CMOS Compatible)
- Arc-Free With No Snubbing Circuits
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable

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 CPC1330G is a single-pole normally-open (1-Form-A) Solid State Relay with an enhanced input to output isolation barrier of 5000V_{rms}. Clare's patented OptoMOS architecture makes available the optically coupled technology necessary to activate the output's efficient MOSFET switches. Control of the isolated output is accomplished by means of the highly effective GaAlAs infrared LED at the input.

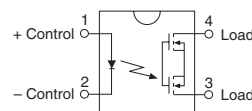
Approvals

- UL - File # E76270
- EN60950 - Pending

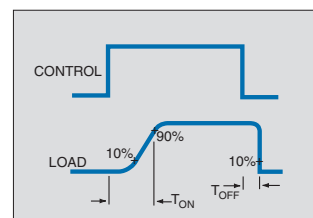
Ordering Information

Part Number	Description
CPC1330G	4-Pin DIP (100/Tube)
CPC1330GR	4-Pin Surface Mount (100/Tube)
CPC1330GRTR	4-Pin Surface Mount (1000/Reel)

Pin Configuration



Switching Characteristics of Normally Open (Form A) Devices



Absolute Maximum Ratings

Parameter	Ratings	Units
Peak Blocking Voltage	350	V _P
Reverse Input Voltage	5	V
Input Control Current	50	mA
Peak (10ms)	1	A
Input Power Dissipation ¹	100	mW
Total Package Dissipation ²	550	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/°C

² Derate Linearly 3.00 mW/°C

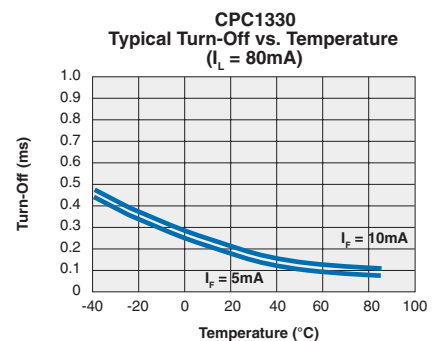
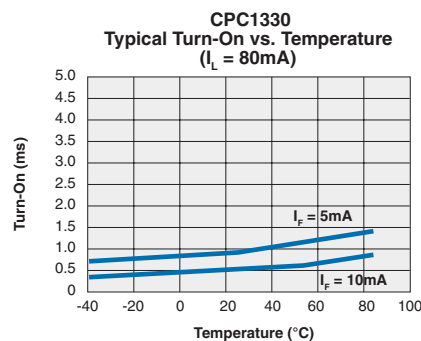
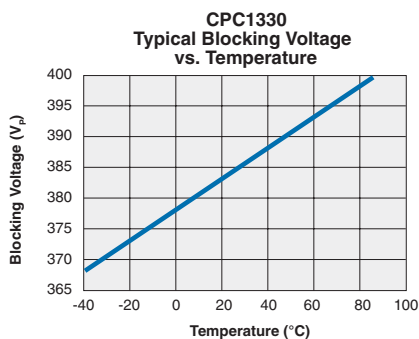
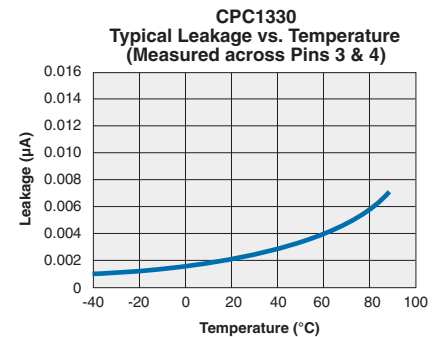
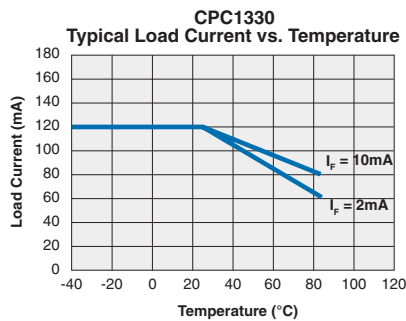
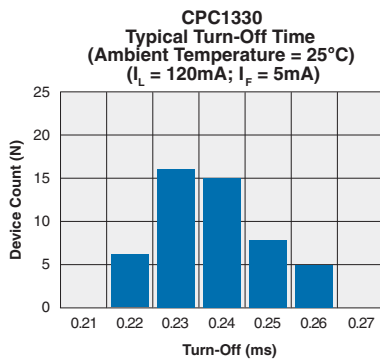
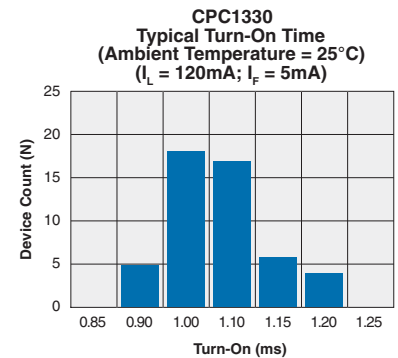
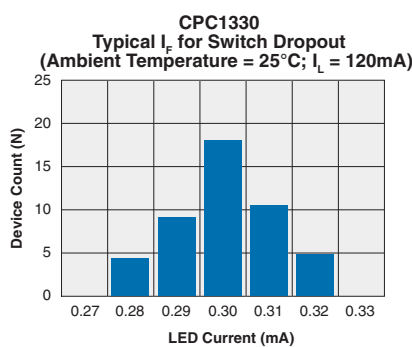
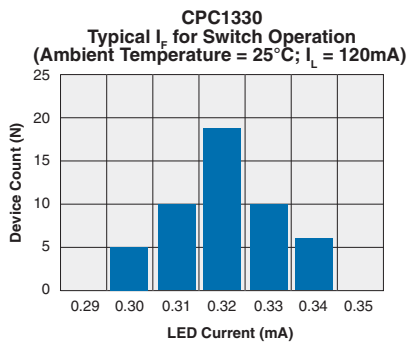
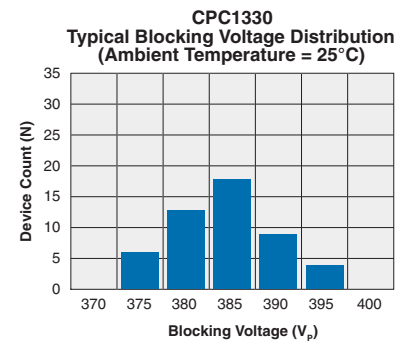
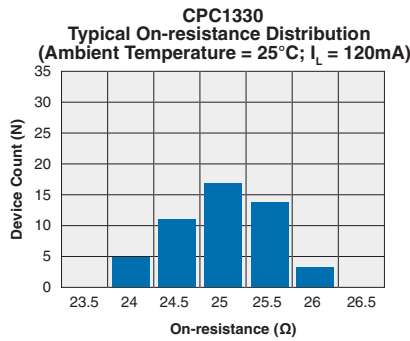
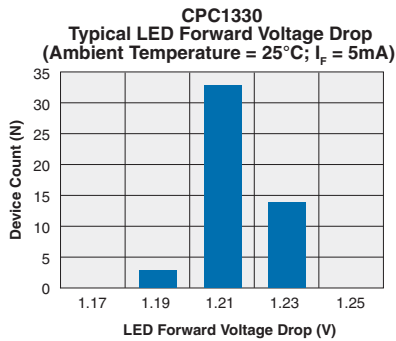
Electrical absolute maximum ratings are at 25°C

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

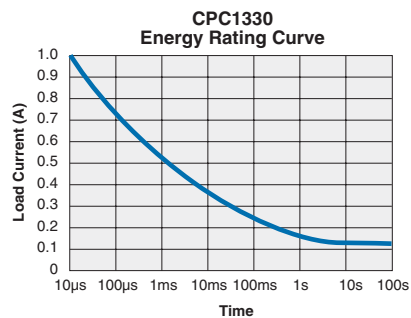
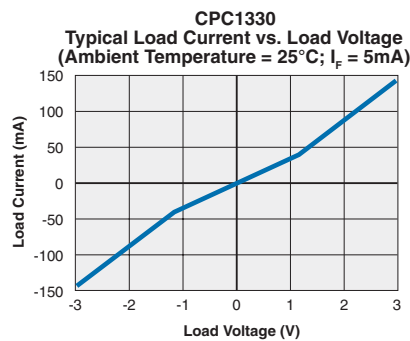
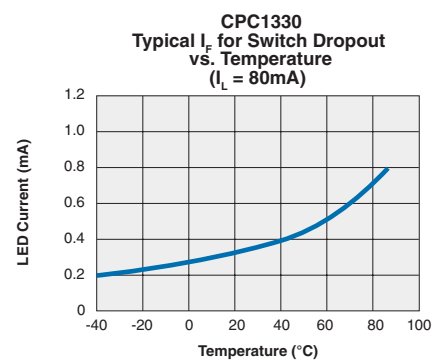
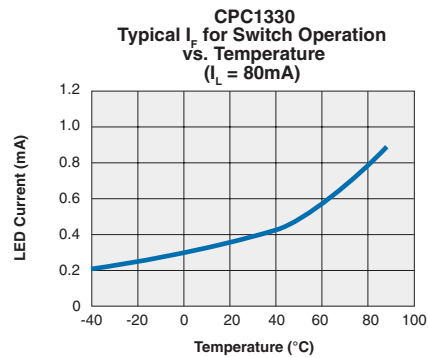
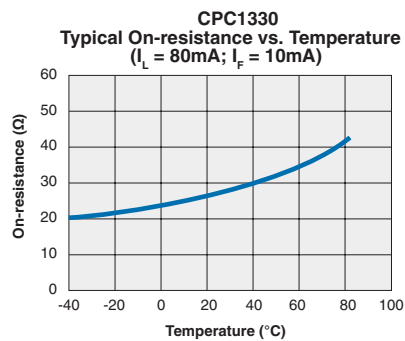
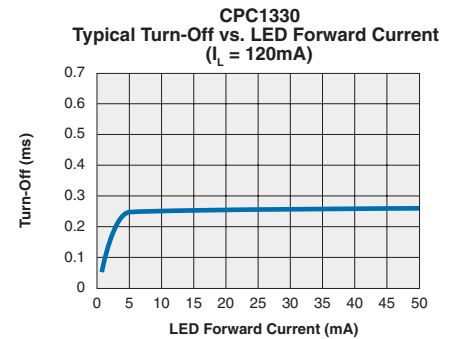
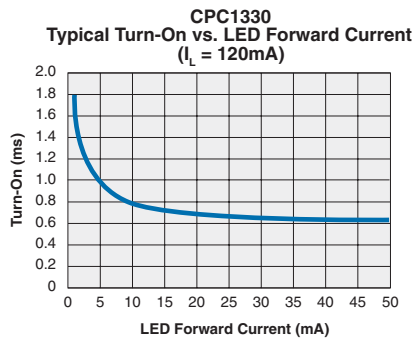
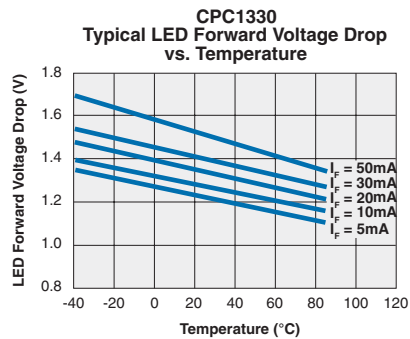
Parameters	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Load Current	-	I _L	-	-	120	mA
Continuous	-	I _L	-	-	120	
Peak	t≤10ms	I _{LPK}	-	-	350	
On-Resistance	I _L =120mA	R _{ON}	-	25	30	Ω
Off-State Leakage Current	V _L =350V	I _{LEAK}	-	-	1	μA
Switching Speeds	I _F =5mA, V _L =10V	T _{ON}	-	-	2	ms
Turn-On		T _{OFF}	-	-	1	
Turn-Off						
Output Capacitance	I _F =0mA, V _L =50V, f=1MHz	C _{OUT}	-	25	-	pF
Input Characteristics @ 25°C						
Input Control Current	I _L =120mA	I _F	-	0.33	2	mA
Input Dropout Current	-	I _F	0.2	0.3	-	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						
Input to Output Capacitance	-	C _{I/O}	-	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.

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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.

Recommended soldering processes are limited to 260°C component body temperature for 10 seconds.

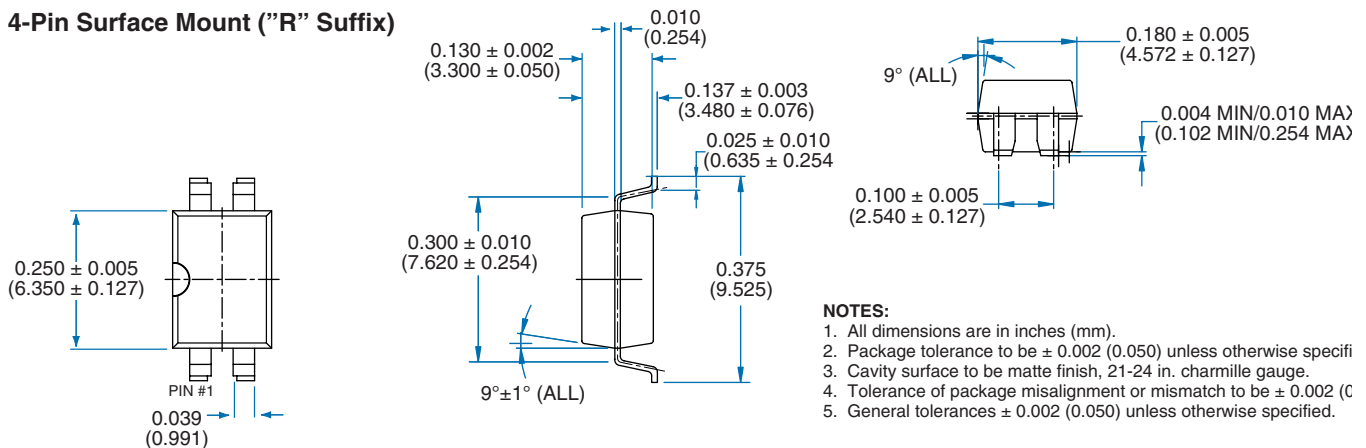
Washing

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

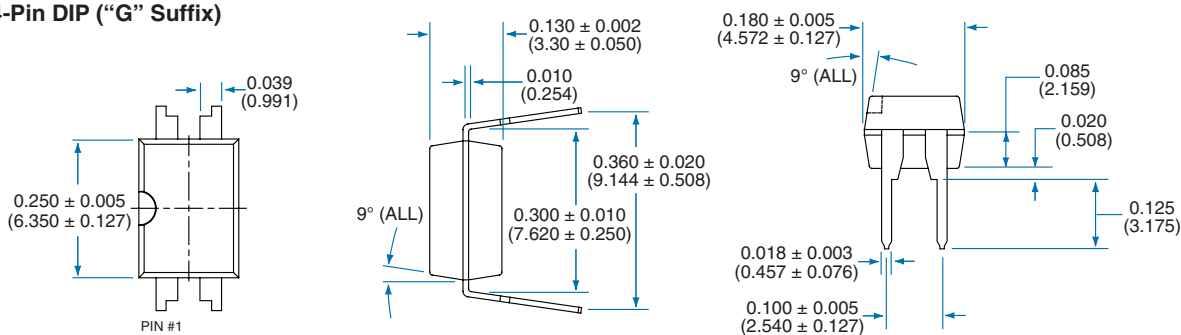


MECHANICAL DIMENSIONS

4-Pin Surface Mount ("R" Suffix)



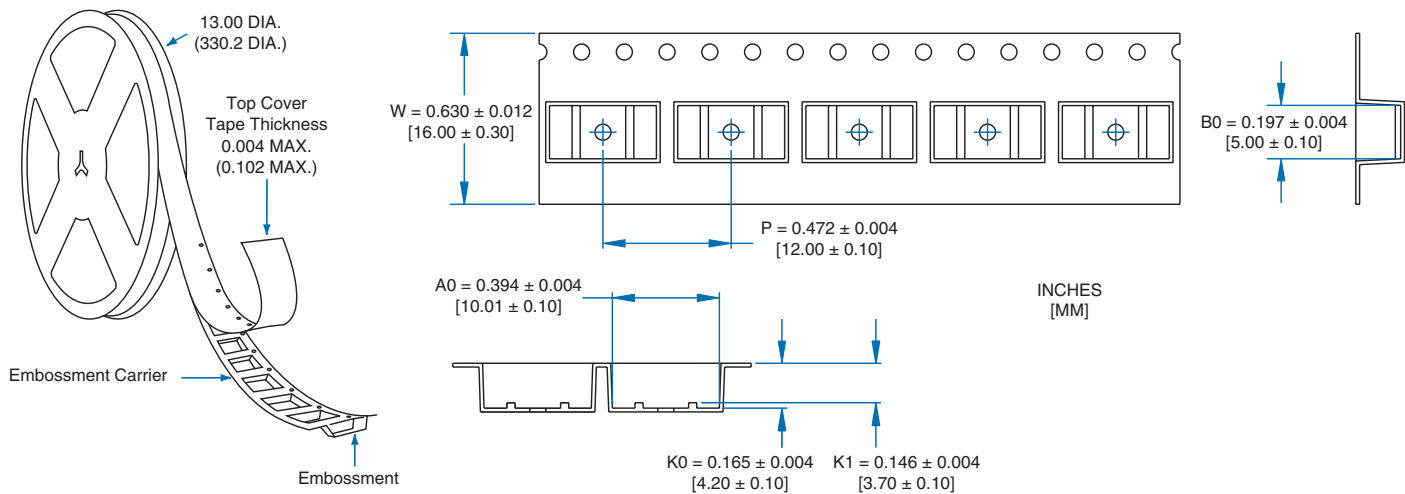
4-Pin DIP ("G" Suffix)



NOTES:

1. All dimensions are in inches (mm).
2. Package tolerance to be ± 0.002 (0.05) unless otherwise specified.
3. Cavity surface to be matte finish, 21 - 24 inches charmillie gauge.
4. Tolerance of package misalignment or mismatch to be ± 0.002 (0.05).
5. General tolerances ± 0.002 (0.05) unless otherwise specified.

Tape and Reel Packaging for Surface Mount Package



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