



Parameters	Ratings	Units
Blocking Voltage	350	V <sub>P</sub>
Load Current	100	mA
Max On-resistance	35	Ω
LED Current to Operate	1	mA

### Transient Protection Characteristics

Part Number	Peak Pulse Power	V <sub>WM</sub>
CPC1335P	600W	40.2V

### Features

- 100% Solid State
- Low Drive Power Requirements (TTL/CMOS Compatible)
- Arc-Free With No Snubbing Circuits
- 3750V<sub>rms</sub> Input/Output Isolation
- No EMI/RFI Generation
- Machine Insertable, Wave Solderable

### Applications

- Security
- Aerospace
- Industrial Controls

### Description

The CPC1335 is a 1-Form-A solid state relay with a non-dedicated bi-directional TVS diode which can be used for relay protection. Efficient MOSFET switches and photovoltaic die use Clare's patented OptoMOS® architecture to provide 3750 V<sub>rms</sub> of input to output isolation. The optically coupled output is controlled by a highly efficient GaAIAs infrared LED.

The bi-directional transient voltage suppressor is designed to meet the installation class 3 requirements of EN50130-4.

Available in an 8-pin space saving surface mount package, the CPC1335 is shipped in tubes or tape and reel.

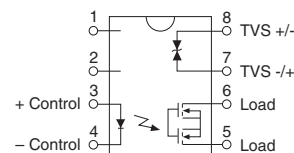
### Approvals

- UL Recognized Component: File #E76270
- EN/IEC 60950 Compliant
- CSA Certified Component: Certificate # 1172007

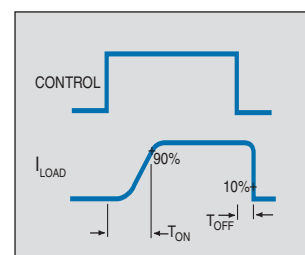
### Ordering Information

Part #	Description
CPC1335P	8-Pin Flatpack (50/Tube)
CPC1335PTR	8-Pin Flatpack (1000/Reel)

### Pin Configuration



### Switching Characteristics of Normally Open (Form A) Devices



## Absolute Maximum Ratings

Parameter	Ratings	Units
SSR Output Blocking Voltage	350	V <sub>p</sub>
TVS Working Voltage, Maximum (V <sub>WM</sub> )	40.2	V
Reverse Input Voltage	5	V
Input Control Current Peak (10ms)	50	mA
	1	A
Input Power Dissipation <sup>1</sup>	150	mW
SSR Output Power Dissipation <sup>2</sup>	400	mW
TVS Peak Pulse Power (P <sub>pp</sub> ) (I <sub>pp</sub> =9.3A, 10/1000μs pulse)	600	W
Isolation Voltage Input to Output	3750	V <sub>rms</sub>
Operating Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

<sup>1</sup> Derate Linearly 1.33 mw / °C

<sup>2</sup> Derate Linearly 6.67 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
<b>Output Characteristics @ 25°C</b>						
Load Current Continuous <sup>1</sup>	I <sub>F</sub> =2mA	I <sub>L</sub>	-	-	100	mA
	t=10ms	I <sub>LPK</sub>	-	-	350	
Peak						
On-resistance <sup>2</sup>	I <sub>L</sub> =100mA	R <sub>ON</sub>	-	25	35	Ω
Off-State Leakage Current	V <sub>L</sub> =350V	I <sub>LEAK</sub>	-	-	1	μA
Switching Speeds	I <sub>F</sub> =2mA, V <sub>L</sub> =10V	T <sub>ON</sub>	-	-	10	ms
		T <sub>OFF</sub>	-	-	10	
Output Capacitance	50V; f=1MHz	C <sub>OUT</sub>	-	40	-	pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current <sup>3</sup>	I <sub>L</sub> =100mA	I <sub>F</sub>	-	-	1	mA
Input Voltage Drop	I <sub>F</sub> =5mA	V <sub>F</sub>	0.9	1.2	1.4	V
Reverse Input Current	V <sub>R</sub> =5V	I <sub>R</sub>	-	-	10	μA
<b>Common Characteristics @ 25°C</b>						
Input to Output Capacitance	-	C <sub>I/O</sub>	-	3	-	pF

<sup>1</sup> Load current derates linearly from 100 mA @ 25°C to 70mA @ 85°C

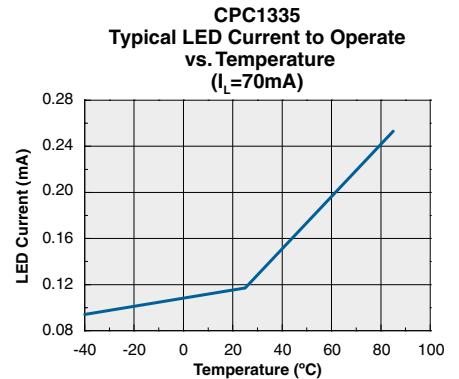
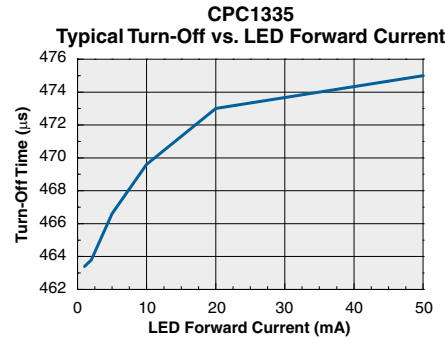
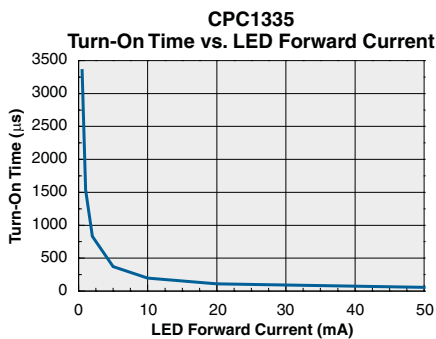
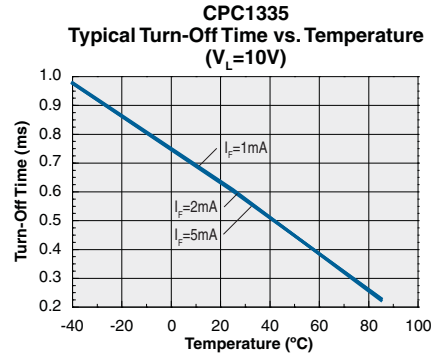
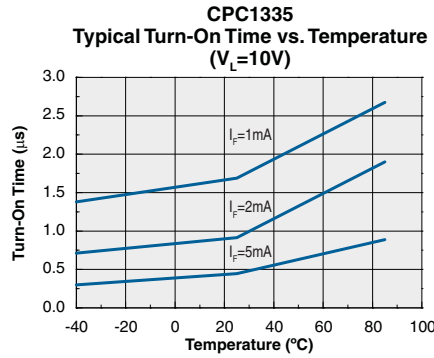
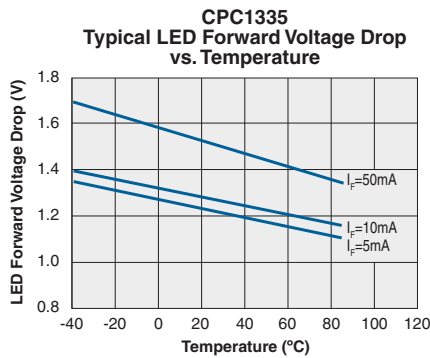
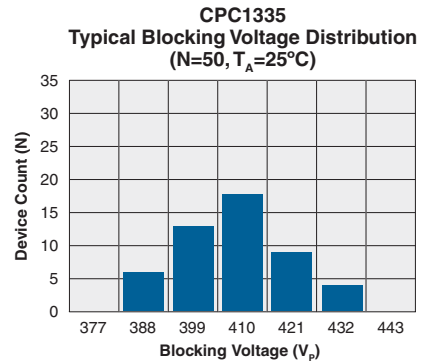
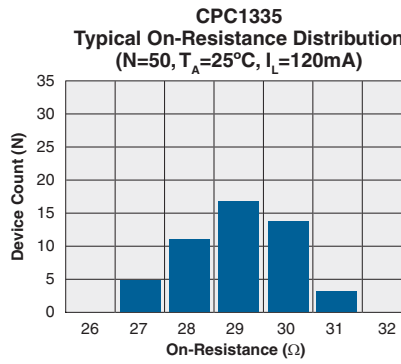
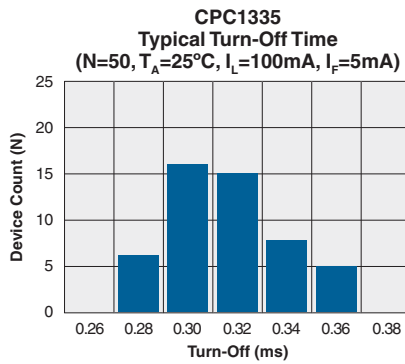
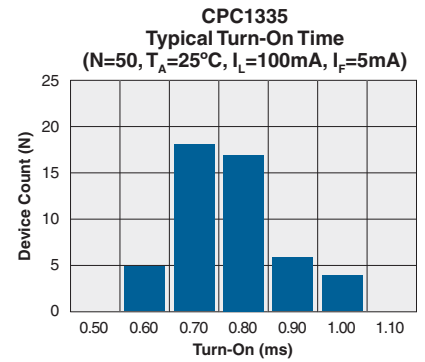
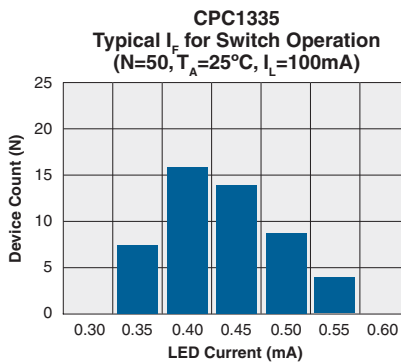
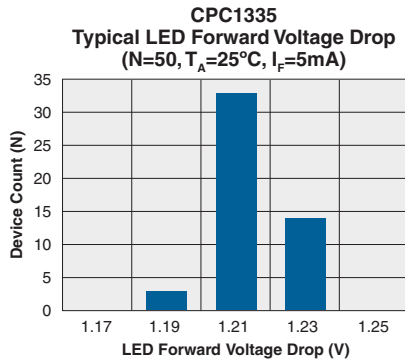
<sup>2</sup> Measurement taken within 1 second of on time

<sup>3</sup> For applications requiring high temp operation (greater than 60°C) a minimum LED drive current of 3mA is recommended.

## Electrical Characteristics: TVS

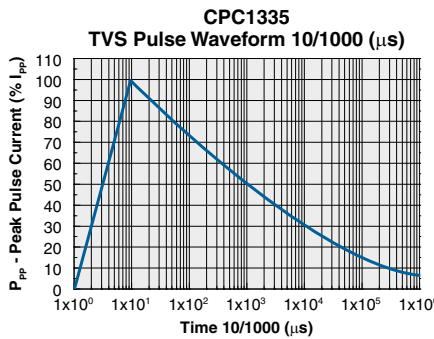
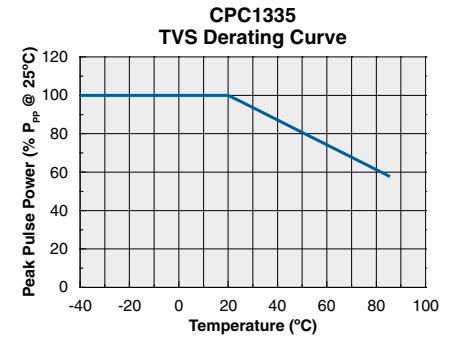
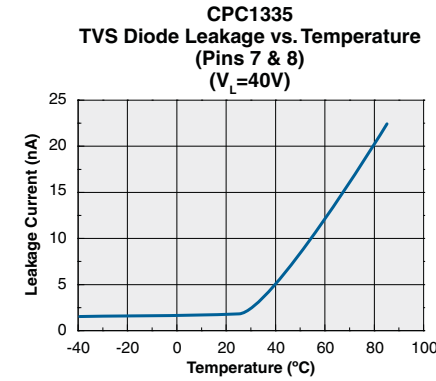
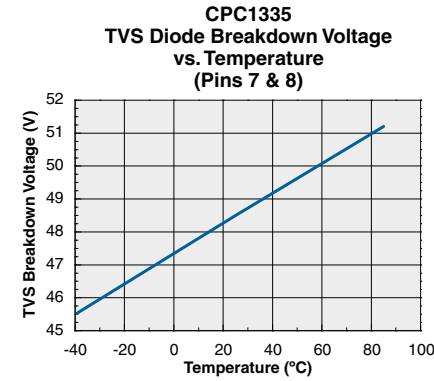
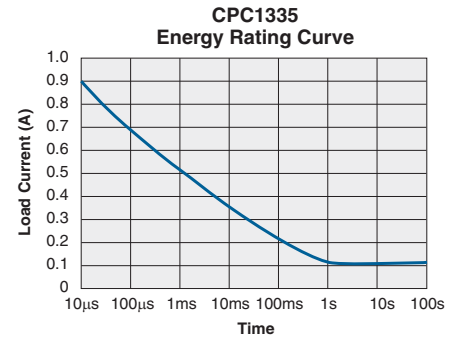
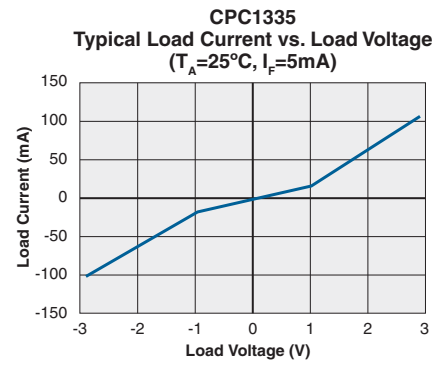
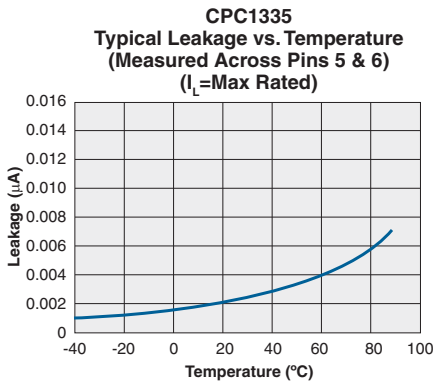
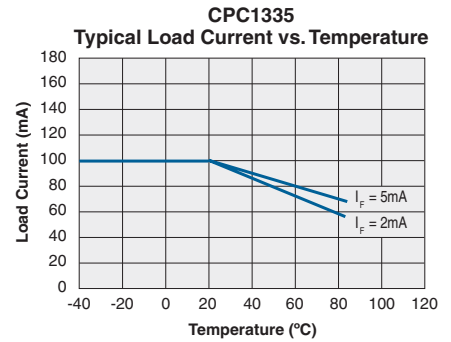
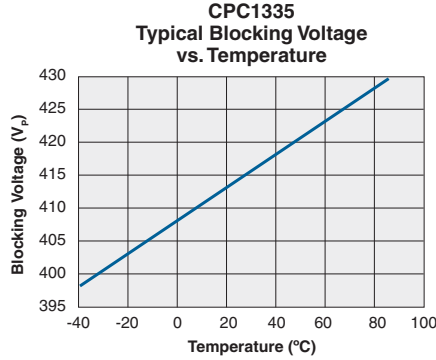
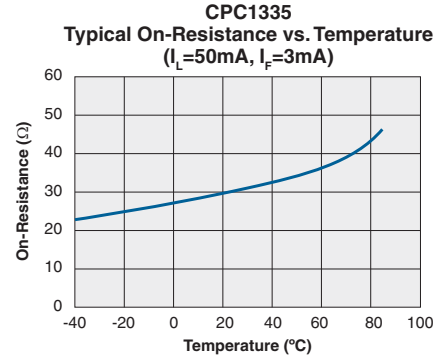
Parameters	Conditions	Symbol	Min	Typ	Max	Units
<b>Output Characteristics @ 25°C</b>						
Clamping Voltage	I <sub>pp</sub> =9.3A	V <sub>C</sub>	-	-	66.5	V
Reverse Breakdown Voltage	I <sub>BR</sub> =1mA	V <sub>BR</sub>	44.4	-	-	V
Reverse Leakage Current	V <sub>WM</sub> =40.2V	I <sub>D</sub>	-	-	5	μA

**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.

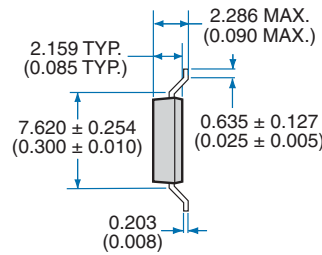
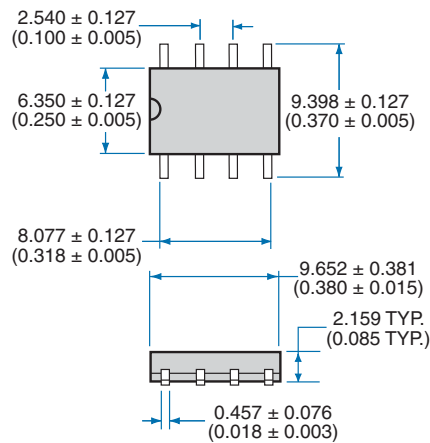
**Washing**

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

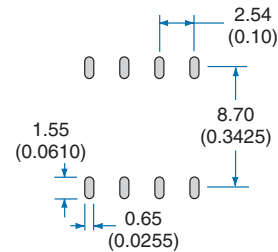


**MECHANICAL DIMENSIONS**

**8 Pin Flatpack Package**

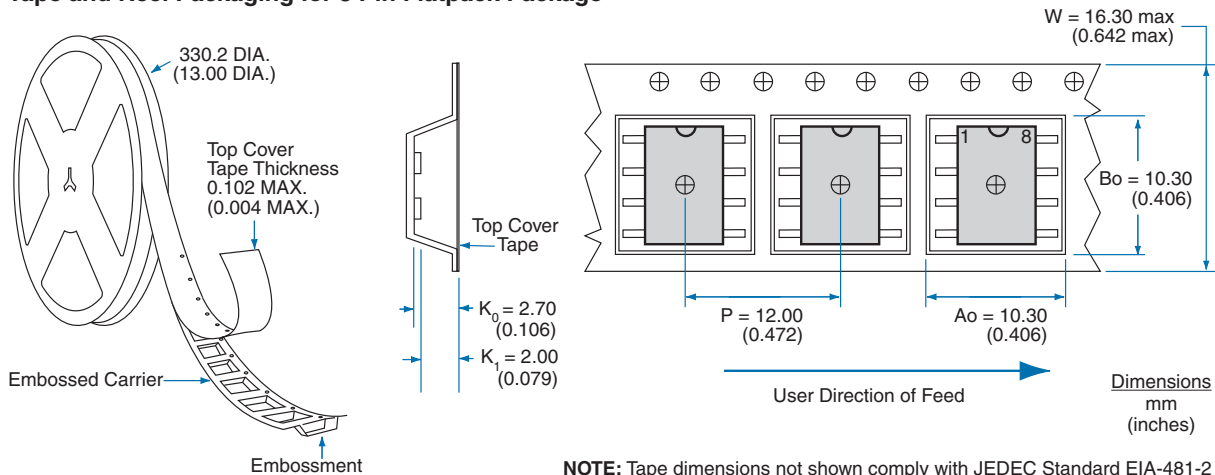


**Recommended PCB Land Pattern**



Dimensions  
mm  
(inches)

**Tape and Reel Packaging for 8 Pin Flatpack Package**



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

**For additional information please visit our website at: [www.clare.com](http://www.clare.com)**

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