



The Clare Solar Cell is a revolutionary new product offering that addresses the diverse needs and applications of the growing low power solar energy market. This technology development is based on Clare's strength in photovoltaic silicon processing and IC packaging. The Solar Cell product family offers several open circuit voltage levels (4, 8 or 16 Volts) when activated by natural or artificial light. These voltage levels correlate to common circuit board power supply voltages making the solar cell ideal for battery charging applications and trickle charge power sources. Standard JEDEC SOIC package styles make these Solar Cell products ideal for prototype and large production usage.

The CPC1822 is one of the first members of the Clare Solar Cell product family released into production. It produces a floating source open-circuit potential of 4V and a short-circuit current output of 50 $\mu$ A to provide a true wireless power source.

Clare's flexible Solar Cell architecture facilitates product family growth by means of its scalable technology thus paving the way for future solar cell offerings with different voltage and current ratings. Additionally, since there is excellent isolation between the various circuit elements on the Solar Cell's photovoltaic die, it is possible to add options such as power management or logic control circuitry with minimal incremental cost to the product.

## Features

- Select from multiple voltage and current outputs
- 4V - 16V output
- 12 $\mu$ A - 100 $\mu$ A current output
- Provides true wireless power
- Triggers with natural sunlight or artificial light
- Semiconductor miniature size and reliability
- Replacement of Discrete Components

## Applications

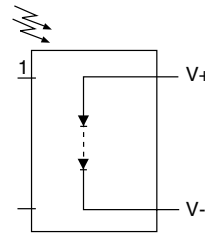
- Portable Electronics
- Solar Battery Chargers
- Battery Operated Equipment
- Consumer Electronics
- Off Grid Installation
- Wireless Sensors and Detection
- Self Powered Sunlight/ Light Detection
- Self Powered Products
- Remote Installation



# Solar Cell Family

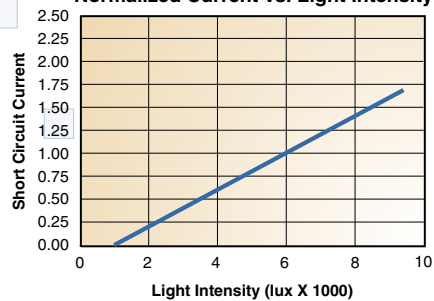
| Product Part Number | Open Circuit Voltage (V) | Short Circuit Current (uA) | Available Package Types |
|---------------------|--------------------------|----------------------------|-------------------------|
| CPC1822             | 4                        | 50                         | 8-Pin SOIC              |
| CPC1824             | 4                        | 100                        | -                       |
| CPC1831             | 8                        | 25                         | 8-Pin SOIC              |
| CPC1832             | 8                        | 50                         | 16-Pin SOIC             |
| CPC1840             | 16                       | 12                         | 16-Pin SOIC             |
| CPC1841             | 16                       | 25                         | -                       |

## Block Diagram

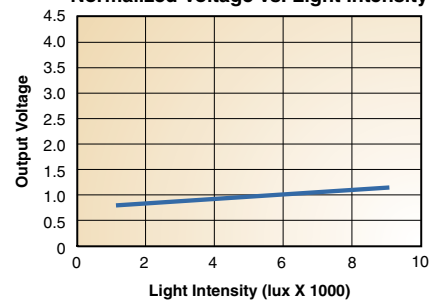


## Performance Data

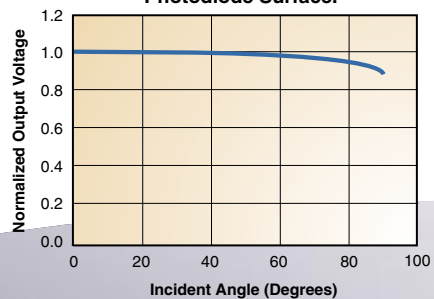
Normalized Current vs. Light Intensity



Normalized Voltage vs. Light Intensity



Normalized Output Voltage vs. Incident Angle of Light to Photodiode Surface.



Normalized Output Current vs. Incident Angle of Light to Photodiode Surface.



Clare

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## Ordering Information

| Part #   | Description                               |
|----------|---|
| CPC18xxN | 8-Pin or 16-Pin Clear Molded SOIC Package |