



Parameter	Rating	Units
Open Circuit Voltage	8	V
Short Circuit Current	25	μ A

* Direct sunlight (Approximately 6000 lux)

Features

- 8V Output
- Triggers with Natural Sunlight
- Provides True Wireless Power
- No EMI/RFI Generation
- Wave Solderable
- Replacement of Discrete Components
- Solid State Reliability
- Small 8-Pin Surface Mount SOIC package

Applications

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

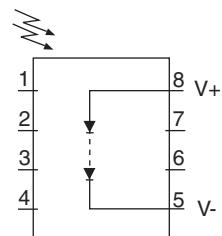
Description

The CPC1831 is a monolithic photovoltaic string of solar cells with switching circuitry. When operating in sunlight or a bright artificial light environment the optical energy will activate the cell array and generate a voltage at the output. The solar cells are capable of generating a floating source voltage and current sufficient to drive and power CMOS ICs, logic gates and/or provide “trickle charge” for battery applications.

Ordering Information

Part #	Description
CPC1831N	8-Pin Clear Molded SOIC Package (100/Tube)
CPC1831NTR	8-Pin Clear Molded SOIC Package (2000/Reel)

Pin Configuration



Absolute Maximum Ratings

Parameter	Ratings	Units
Reverse Voltage	10	V
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

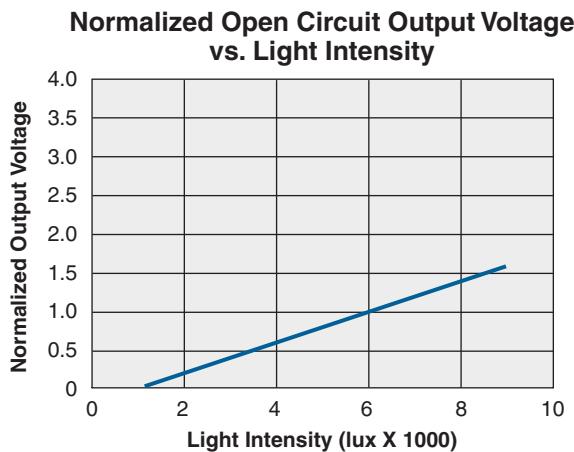
Electrical absolute maximum ratings are at 25°C

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.

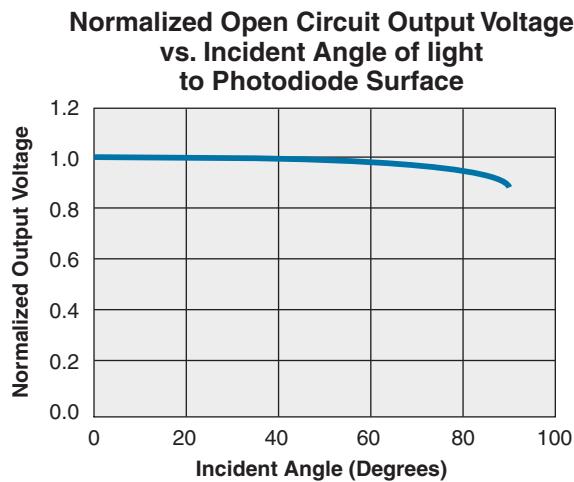
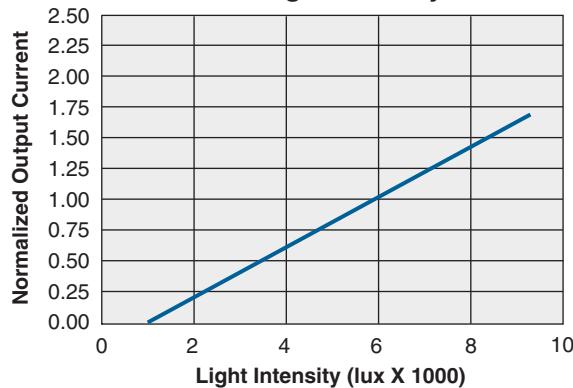
Electrical Characteristics

Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Open Circuit Voltage	Direct Sun (6000 lux)	V_{OC}	-	7.3	-	V
	High Intensity Lamp	V_{OC}	-	7.8	-	V
Short Circuit Current	Direct Sun (6000 lux)	I_{SC}	-	25	-	µA

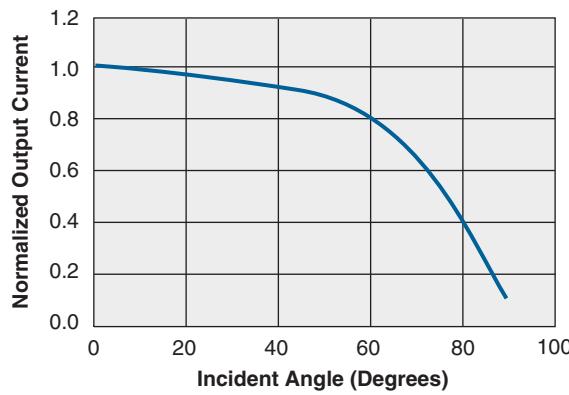
PERFORMANCE DATA*



Normalized Short Circuit Output Current vs. Light Intensity



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



*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.

Manufacturing Information

Moisture Sensitivity

Clare has characterized the moisture reflow sensitivity of this package, and has determined that this component must be handled in accordance with IPC/JEDEC standard J-STD-033 moisture sensitivity level (MSL), level 3 classification.



Soldering Reflow Profile

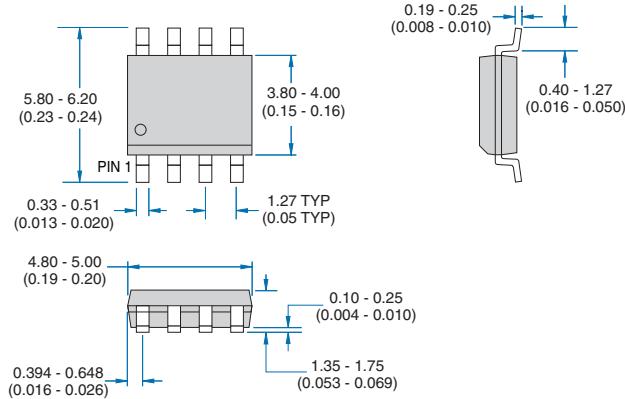
For proper assembly, the component must be processed in accordance with the current revision of IPC/JEDEC standard J-STD-020. Failure to follow the recommended guidelines may cause permanent damage to the device resulting in impaired performance and/or a reduced lifetime expectancy.

Washing

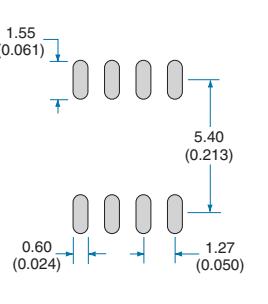
Clare does not recommend ultrasonic cleaning or the use of chlorinated solvents.

MECHANICAL DIMENSIONS

8-Pin SOIC Package

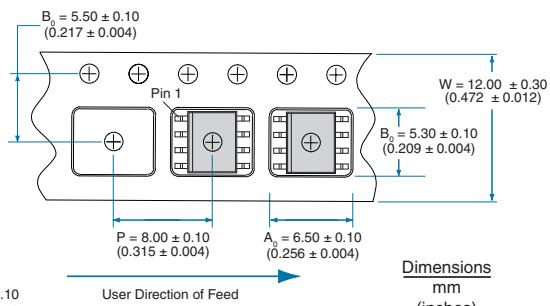
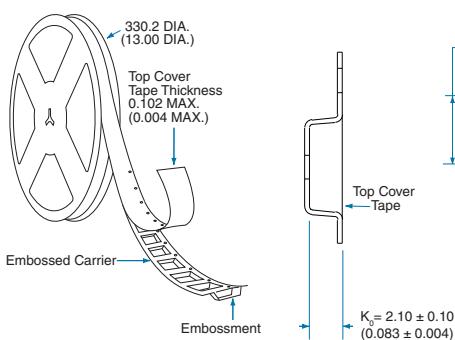


Recommended PCB Land Pattern



Dimensions
mm
(inches)

Tape and Reel Packaging for 8-Pin SOIC-N Surface Mount Package



Dimensions
mm
(inches)

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

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