

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

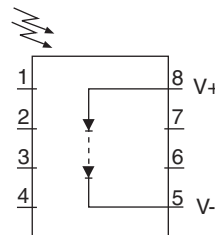
Description

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

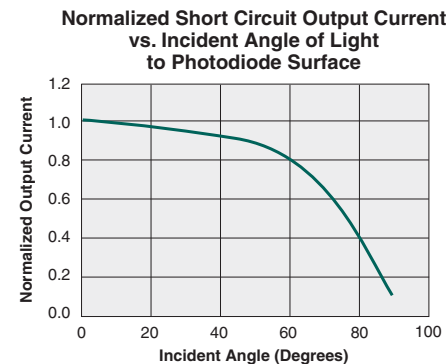
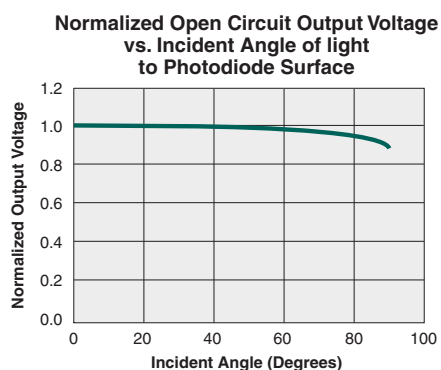
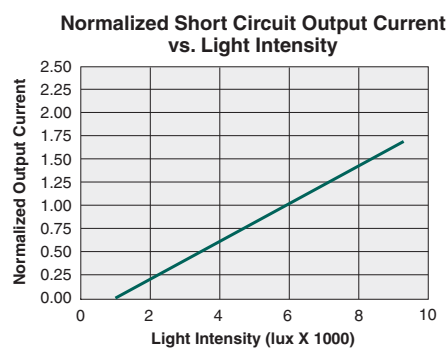
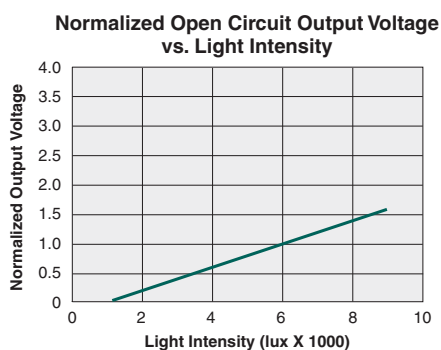
Electrical absolute maximum ratings are at 25°C

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*



*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



All plastic encapsulated semiconductor packages are susceptible to moisture ingress. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

Device	Moisture Sensitivity Level (MSL) Rating
CPC1831N	MSL 3

ESD Sensitivity



This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

Reflow Profile

This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

Device	Maximum Temperature x Time
CPC1831N	260°C for 30 seconds

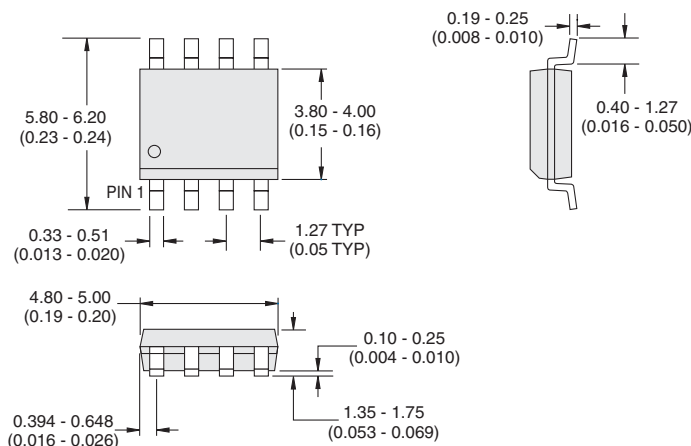
Board Wash

Clare recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable, and the use of a short drying bake may be necessary. Chlorine-based or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.

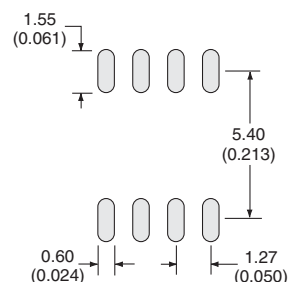


MECHANICAL DIMENSIONS

8-Pin SOIC Package

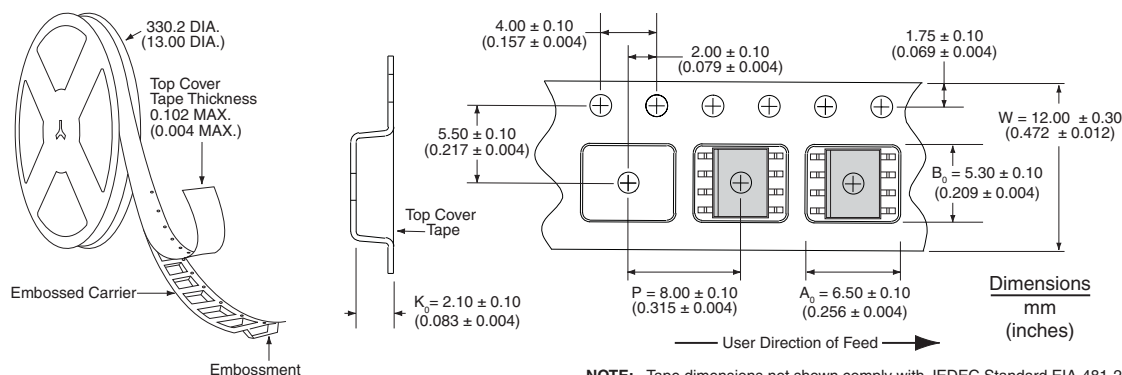


Recommended PCB Land Pattern



Dimensions
mm
(inches)

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



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

For additional information please visit our website at: www.ixysic.com

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