

| Parameter | Rating | Units |
|-----------------------|--------|-------|
| Open Circuit Voltage | 4 | V |
| Short Circuit Current | 100 | uA |

* Direct sunlight (Approximately 6000 lux)

Features

- 4V Output
- Triggers with Natural Sunlight
- Provides True Wireless Power
- No EMI/RFI Generation
- Wave Solderable
- Replacement of Discrete Components
- Solid State Reliability

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

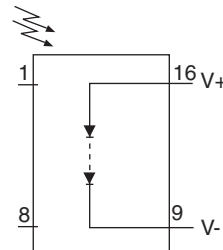
Description

The CPC1824 is a monolithic photovoltaic string of solar cells on Silicon-On-Insulator (SOI). This patented design allows for higher voltage solar cells in a compact package. 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 |
|------------|--|
| CPC1824N | 16-Pin Clear Molded SOIC Package (50/Tube) |
| CPC1824NTR | 16-Pin Clear Molded SOIC Package (1000/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 |

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.

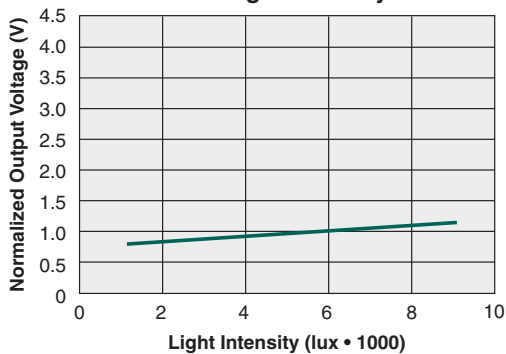
Electrical absolute maximum ratings are at 25°C

Electrical Characteristics

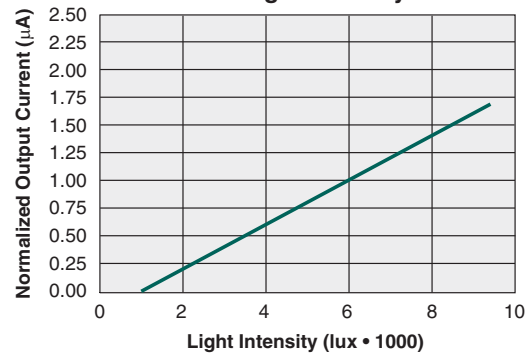
| Parameter | Conditions | Symbol | Min | Typ | Max | Units |
|--------------------------------------|-----------------------|----------|-----|-----|-----|-------|
| Output Characteristics @ 25°C | | | | | | |
| Open Circuit Voltage | Direct Sun (6000 lux) | V_{OC} | - | 4.2 | - | V |
| | High Intensity Lamp | V_{OC} | - | 4.5 | - | V |
| Short Circuit Current | Direct Sun (6000 lux) | I_{SC} | - | 100 | - | μA |

PERFORMANCE DATA*

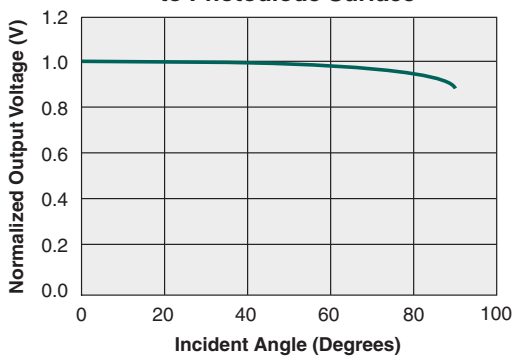
Normalized Open Circuit Output Voltage vs. Light Intensity



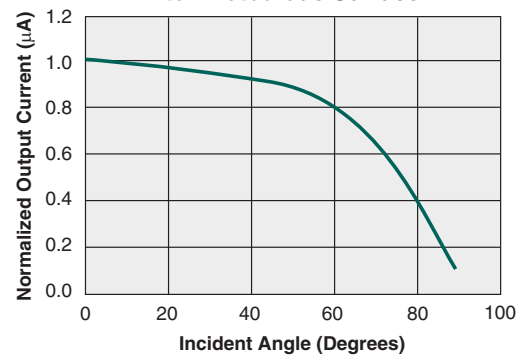
Normalized Short Circuit Output Current vs. Light Intensity



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



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



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 |
|----------|---|
| CPC1824N | 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 |
|----------|----------------------------|
| CPC1824N | 260°C for 30 seconds |

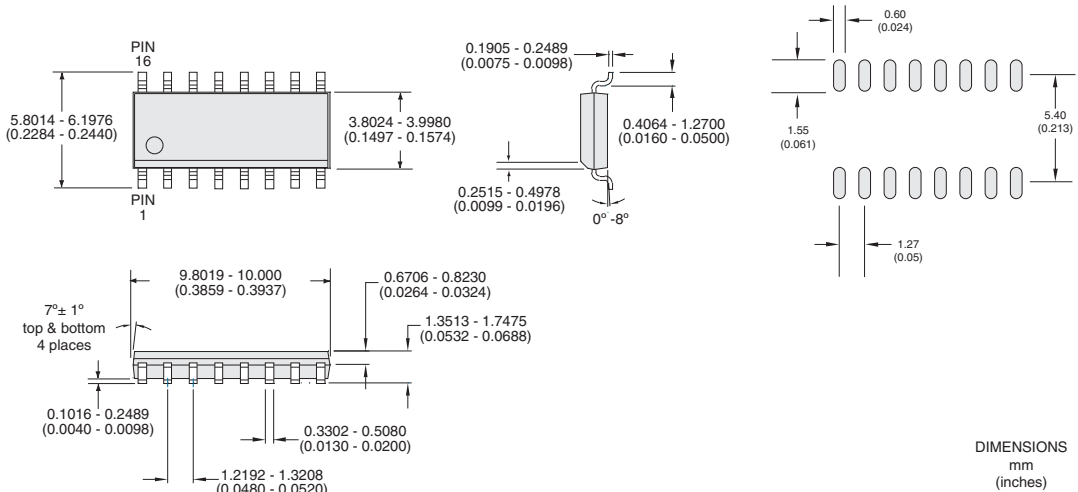
Board Wash

IXYS Integrated Circuits Division 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.

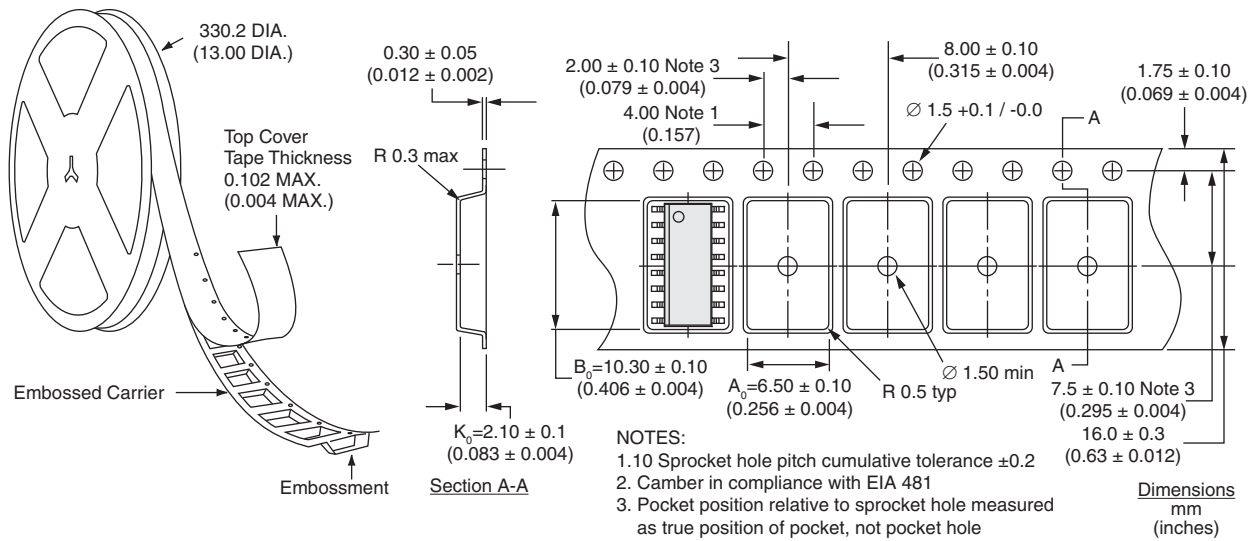


MECHANICAL DIMENSIONS

CPC1824N



CPC1824NTR Tape & Reel



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

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