

	CPC1824	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

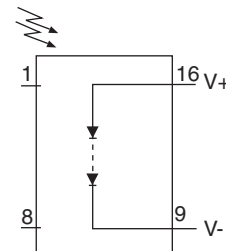
Description

The CPC1824 is a monolithic photovoltaic string of solar cells 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
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.

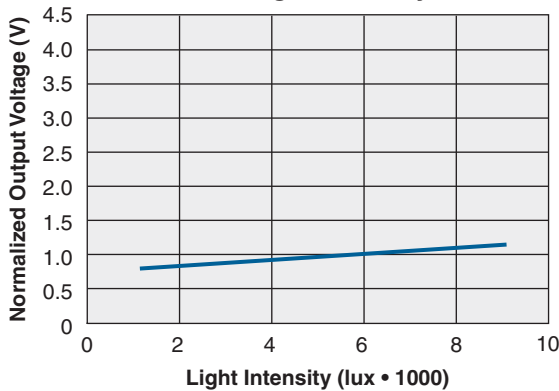
Electrical absolute maximum ratings are at 25°C

Electrical Characteristics

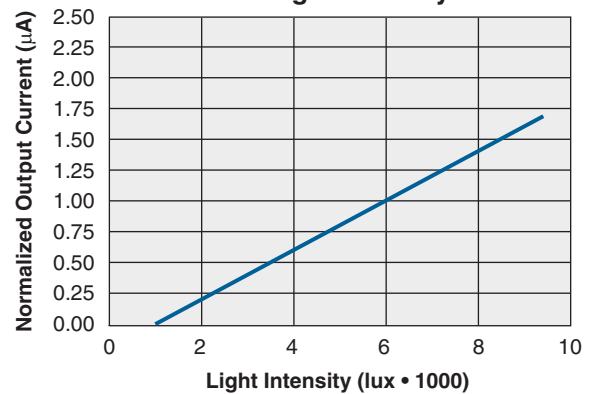
Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics @ 25°C						
Open Circuit Voltage	Direct Sun (6000 lux)	V_{OC}	-	4.2	-	V
	High Intensity Lamp	V_{OC}	-	4.5	-	V
Short Circuit Current	Direct Sun (6000 lux)	I_{SC}	-	100	-	μA

PERFORMANCE DATA*

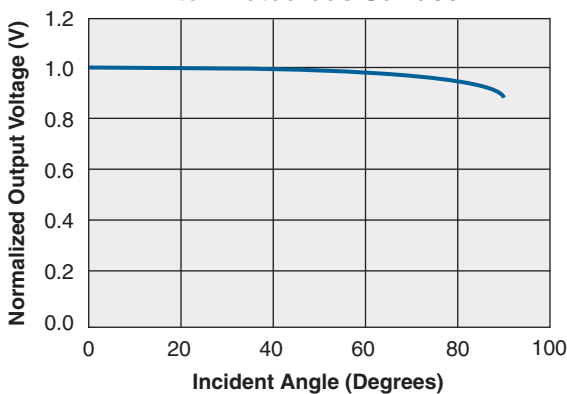
Normalized Open Circuit Output Voltage vs. Light Intensity



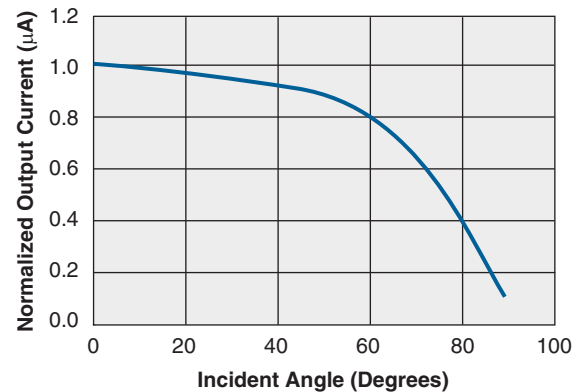
Normalized Short Circuit Output Current vs. Light Intensity



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

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.



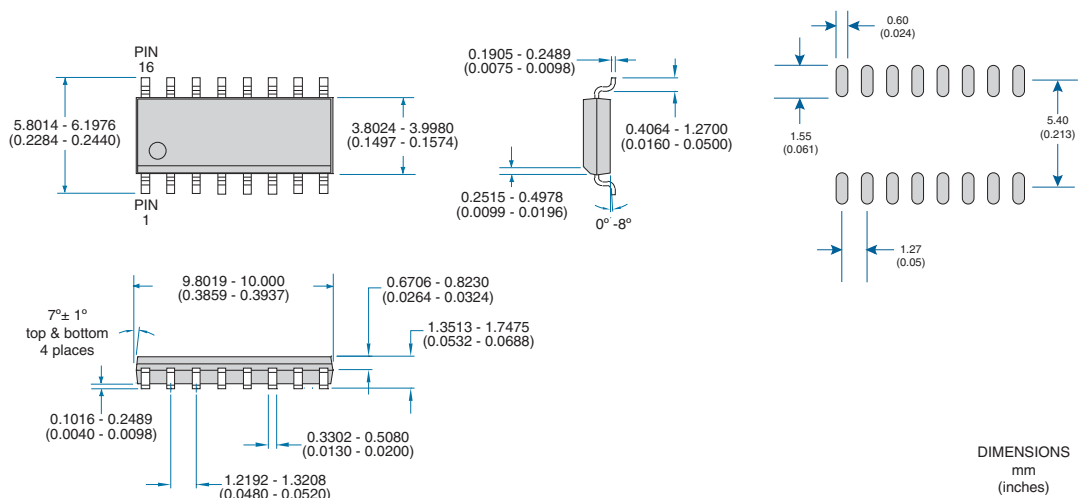
Soldering Reflow Profile

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.

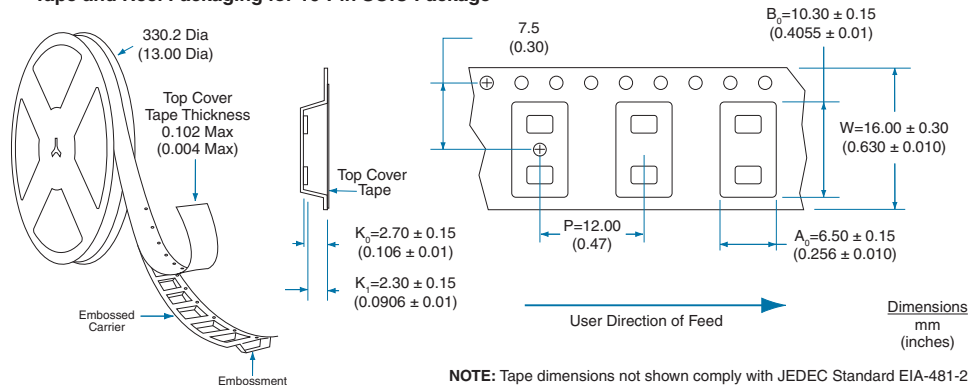
Washing

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

MECHANICAL DIMENSIONS



Tape and Reel Packaging for 16-Pin SOIC Package



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

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

Clare, Inc. makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. Neither circuit patent licenses nor indemnity are expressed or implied. Except as set forth in Clare's Standard Terms and Conditions of Sale, Clare, Inc. assumes no liability whatsoever, and disclaims any express or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

The products described in this document are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or where malfunction of Clare's product may result in direct physical harm, injury, or death to a person or severe property or environmental damage. Clare, Inc. reserves the right to discontinue or make changes to its products at any time without notice.