IXYS
INTEGRATED CIRCUITS DIVISION

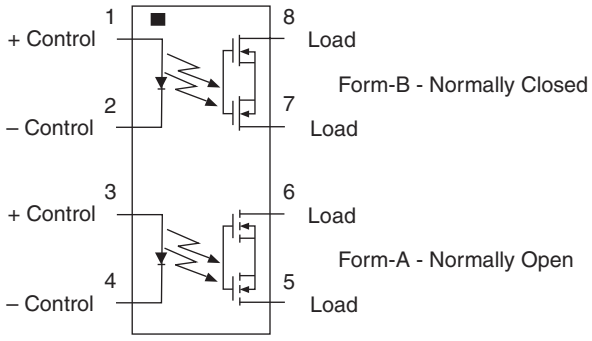
CPC2330N
Dual Single-Pole 8-Pin SOIC OptoMOS® Relay

Parameter	Rating	Units
Blocking Voltage	350	V_P
Load Current	120	mA_{rms} / mA_{DC}
On-Resistance (max)	30	Ω
LED Current to operate	2	mA

Features
- 1500V_{rms} Input/Output Isolation
- Small 8-Pin SOIC Package
- TTL/CMOS Compatible input
- Arc-Free With No Snubbing Circuits
- No EMI/RFI Generation
- Immune to radiated EM fields
- SMD Pick & Place, Wave Solderable
- Tape & Reel Version Available

Applications
- Telecommunication
- Security
  - Passive Infrared Detectors (PIR)
  - Data Signalling
  - Sensor Circuitry
- Instrumentation
  - Multiplexers
  - Data Acquisition
  - Electronic Switching
  - I/O Subsystems
- Medical Equipment—Patient/Equipment Isolation
- Aerospace
- Industrial Controls

Pin Configuration



Description
The CPC2330N is a miniature device with two independent solid state relays, one normally open (1-Form-A) and the other normally closed (1-Form-B), in an 8-pin SOIC package with 1500V_{rms} of input to output isolation.

The optically coupled outputs, which use IXYS Integrated Circuits Division's patented OptoMOS architecture, are controlled by a highly efficient GaAlAs infrared LED.

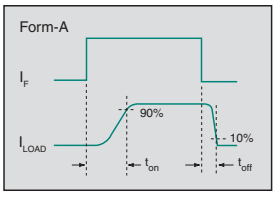
Using IXYS Integrated Circuits Division's state of the art, double-molded vertical construction packaging, the CPC2330N is ideal for replacing larger less-reliable reed and electromechanical relays.

Approvals
- UL Recognized Component: File E76270
- EN/IEC 60950-1 Certified Component: TUV Certificate B 09 07 49410 004

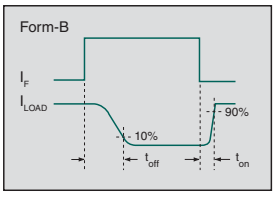
Ordering Information

Part #	Description
CPC2330N	8-Pin SOIC (50/tube)
CPC2330NTR	8-Pin SOIC (2000/reel)

Switching Characteristics of Normally Open Devices



Switching Characteristics of Normally Closed Devices



Absolute Maximum Ratings @ 25ºC

Parameter	Ratings	Units
Blocking Voltage	350	V_P
Reverse Input Voltage	5	V
Input Control Current	50	mA
Peak (10ms)	1	A
Total Power Dissipation [1]	600	mW
Isolation Voltage, Input to Output	1500	V_{rms}
ESD Rating, Human Body Model	8	kV
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C
Soldering Temperature (10 Seconds)	260	°C

[1] Derate linearly 5.0 mW / °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.

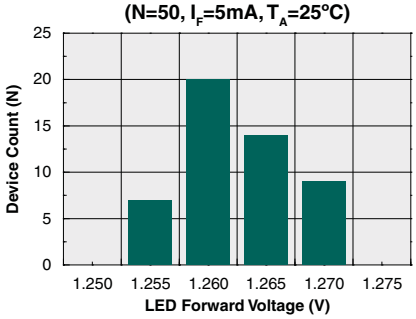
Electrical Characteristics @ 25ºC

Parameter	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics						
Load Current Continuous [1]	(Form-A) I_F=2mA (Form-B) I_F=0mA	I_L	-	-	120	mA_{rms} / mA_{DC}
Peak	t =10ms	I_{LPK}	-	-	±350	mA_P
On-Resistance [2]	I_L=120mA	R_{ON}	-	-	30	Ω
Switching Speeds Turn-On	I_F=5mA, V_L=10V	t_{on}	-	-	3	ms
Turn-Off		t_{off}	-	-	3	
Off-State Leakage Current	V_L=350V_P	I_{LEAK}	-	-	1	µA
Output Capacitance	V_L=50V, f=1MHz	C_{OUT}	-		-	pF
	(Form-A) I_F=0mA			9		
	(Form-B) I_F=5mA			6		
Input Characteristics						
Input Control Current to Activate [3]	I_L=120mA	I_F	-	-	2	mA
Input Control Current to Deactivate	-	I_F	0.1	-	-	mA
Input Voltage Drop	I_F=5mA	V_F	0.9	1.2	1.4	V
Reverse Input Current	V_R=5V	I_R	-	-	10	µA
Common Characteristics						
Capacitance, Input to Output	-	-	-	1	-	pF

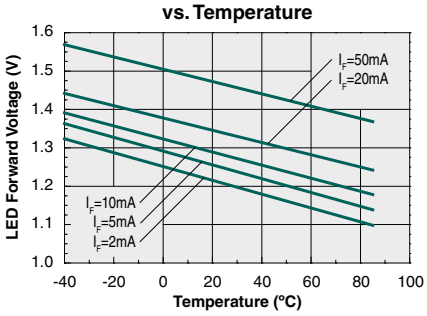
[1] Load current derates linearly from 120mA @ 25ºC to 60mA @ 85ºC, and must be derated for both poles operating simultaneously.
[2] Measurement taken within 1 second of on-time.
[3] For applications requiring high temperature operation (greater than 60ºC) an LED drive current of 4mA is recommended.

FORM-A & FORM-B PERFORMANCE DATA*

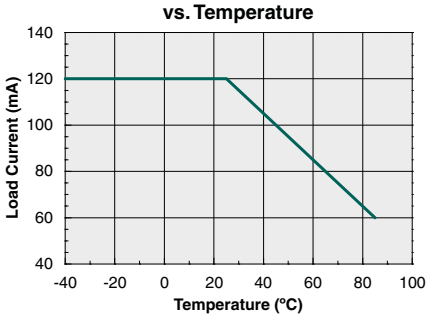
Typical LED Forward Voltage Drop
(N=50, I_F=5mA, T_A=25°C)



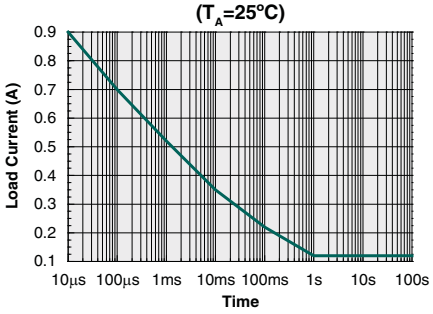
Typical LED Forward Voltage Drop vs. Temperature



Maximum Load Current vs. Temperature

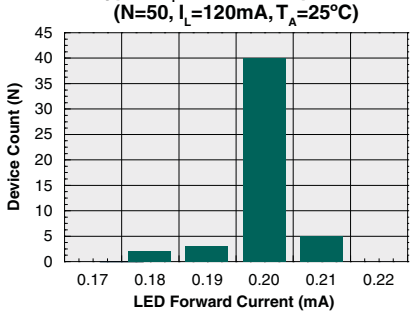


Energy Rating Curve
(T_A=25°C)

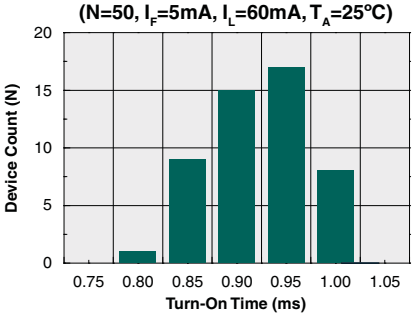


FORM-A PERFORMANCE DATA*

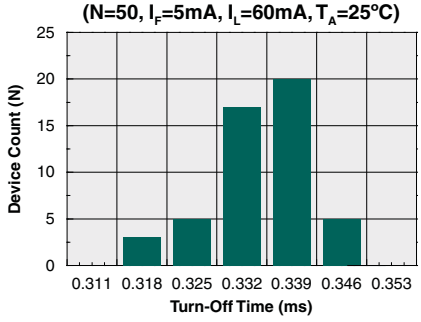
Typical I_F for Switch Operation
(N=50, I_L=120mA, T_A=25°C)



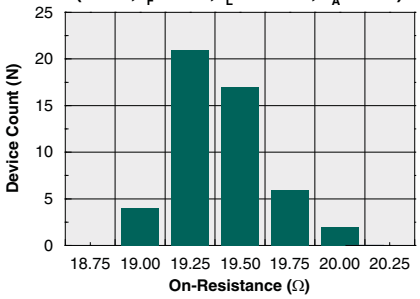
Typical Turn-On Time
(N=50, I_F=5mA, I_L=60mA, T_A=25°C)



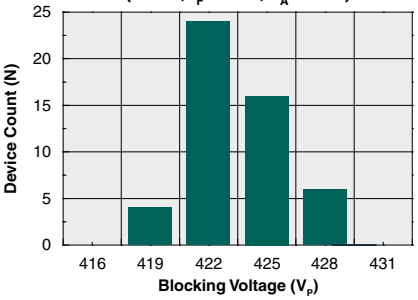
Typical Turn-Off Time
(N=50, I_F=5mA, I_L=60mA, T_A=25°C)



Typical On-Resistance Distribution
(N=50, I_F=2mA, I_L=120mA, T_A=25°C)



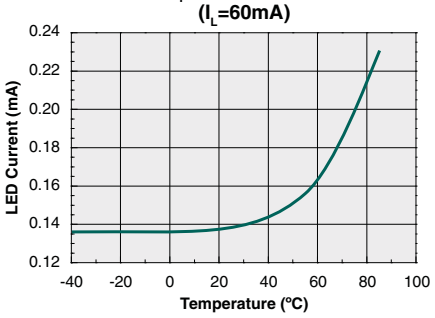
Typical Blocking Voltage Distribution
(N=50, I_F=0mA, T_A=25°C)



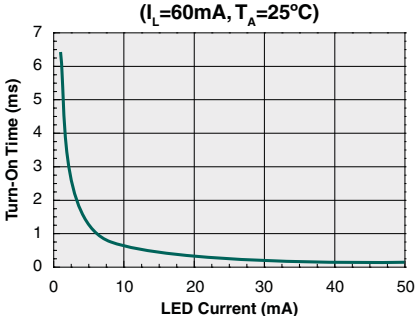
*The Performance Data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

FORM-A PERFORMANCE DATA (Cont.)*

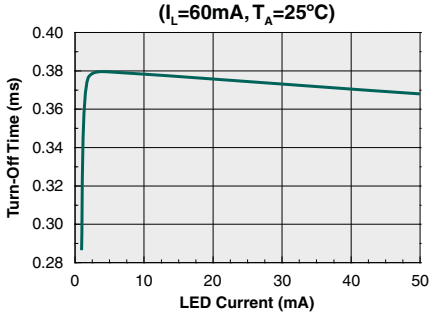
Typical I_F for Switch Operation (I_L=60mA)



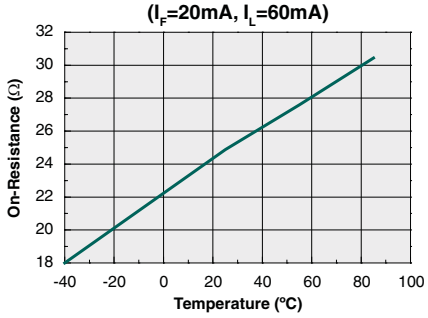
Typical Turn-On Time vs. LED Forward Current (I_L=60mA, T_A=25°C)



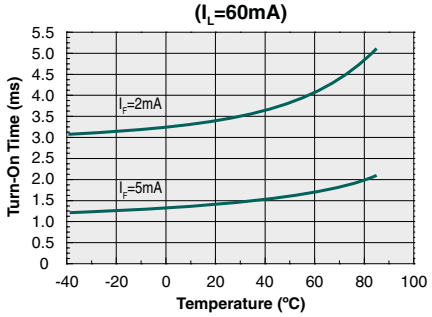
Typical Turn-Off Time vs. LED Forward Current (I_L=60mA, T_A=25°C)



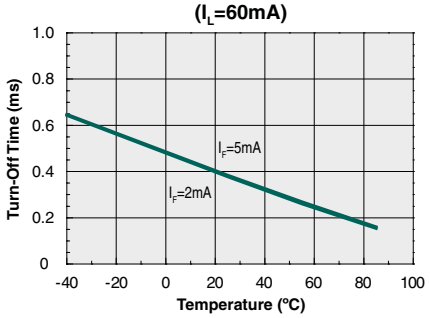
Typical On-Resistance vs. Temperature (I_F=20mA, I_L=60mA)



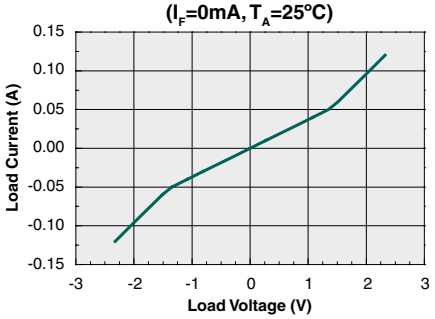
Typical Turn-On Time vs. Temperature (I_L=60mA)



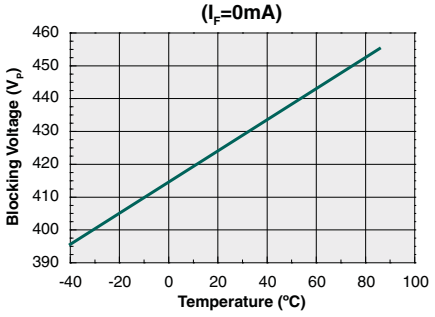
Typical Turn-Off Time vs. Temperature (I_L=60mA)



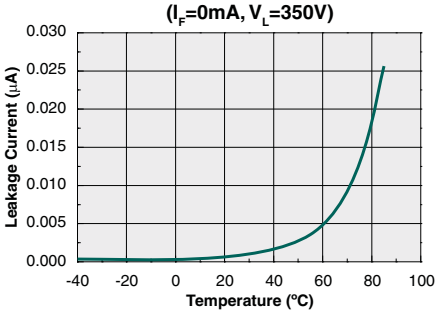
Typical Load Current vs. Load Voltage (I_F=0mA, T_A=25°C)



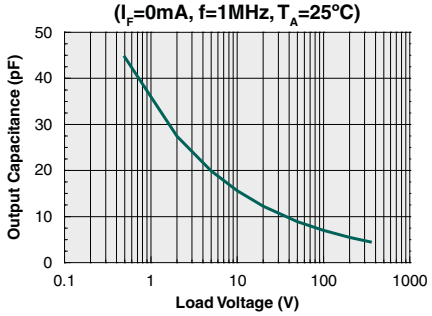
Typical Blocking Voltage vs. Temperature (I_F=0mA)



Leakage Current vs. Temperature Measured Across Pins 5 & 6 (I_F=0mA, V_L=350V)



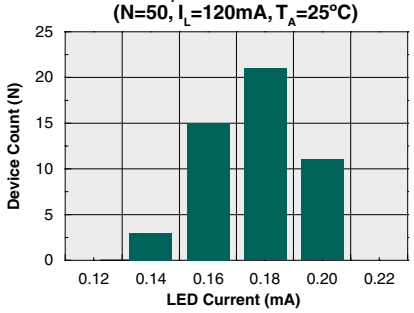
Output Capacitance vs. Load Voltage (I_F=0mA, f=1MHz, T_A=25°C)



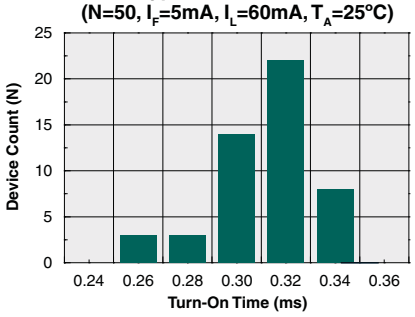
*The Performance Data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

FORM-B PERFORMANCE DATA*

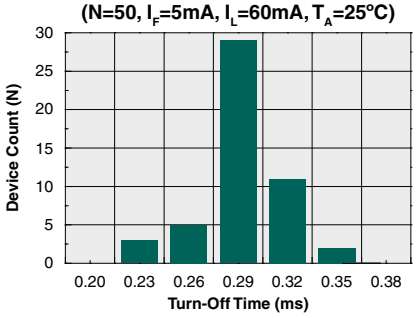
Typical I_F for Switch Operation
(N=50, I_L=120mA, T_A=25°C)



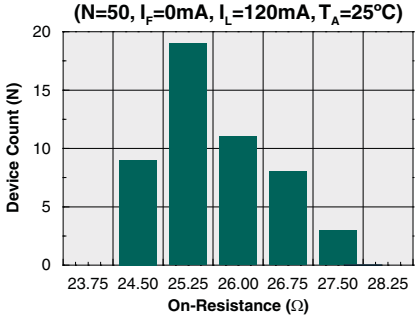
Typical Turn-On Time
(N=50, I_F=5mA, I_L=60mA, T_A=25°C)



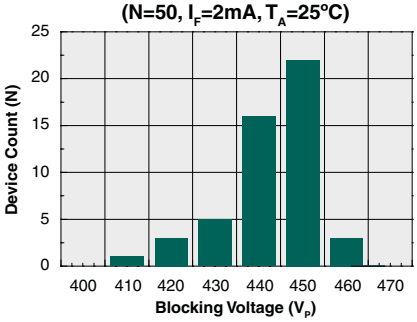
Typical Turn-Off Time
(N=50, I_F=5mA, I_L=60mA, T_A=25°C)



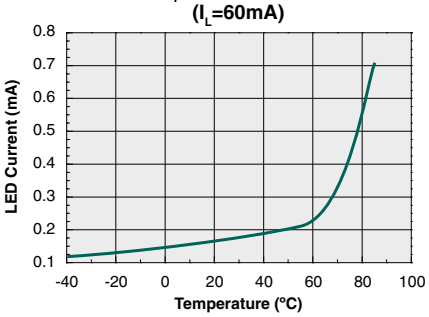
Typical On-Resistance Distribution
(N=50, I_F=0mA, I_L=120mA, T_A=25°C)



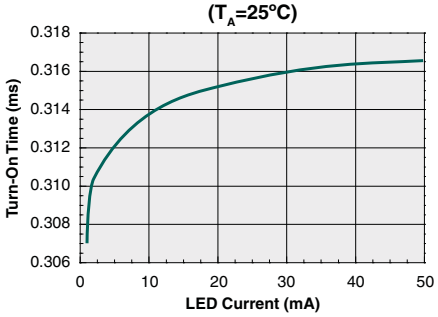
Typical Blocking Voltage Distribution
(N=50, I_F=2mA, T_A=25°C)



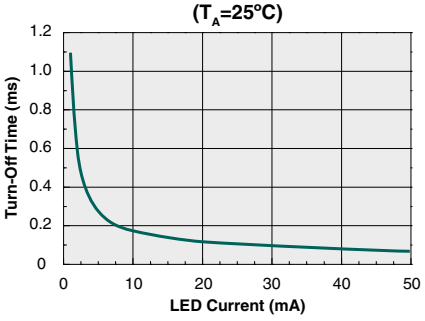
Typical I_F for Switch Operation
(I_L=60mA)



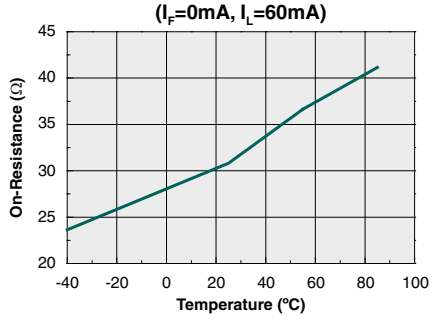
Typical Turn-On Time
vs. LED Forward Current
(T_A=25°C)



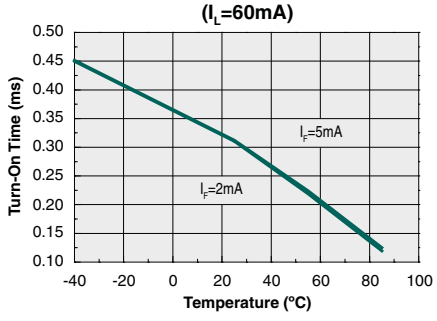
Typical Turn-Off Time
vs. LED Forward Current
(T_A=25°C)



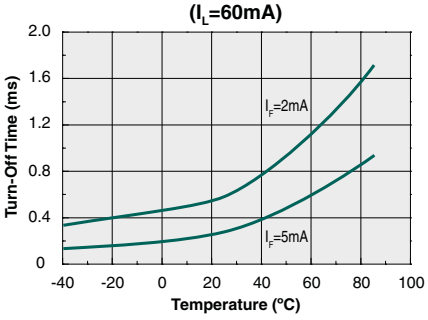
Typical On-Resistance
vs. Temperature
(I_F=0mA, I_L=60mA)



Typical Turn-On Time
vs. Temperature
(I_L=60mA)



Typical Turn-Off Time
vs. Temperature
(I_L=60mA)



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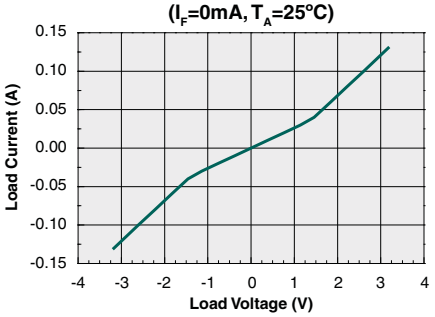
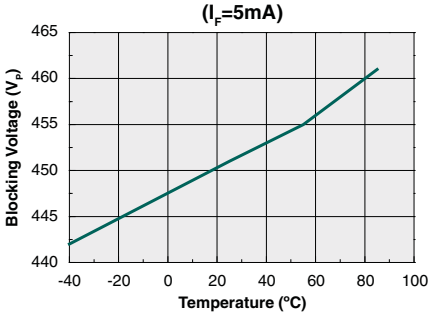
FORM-B PERFORMANCE DATA (Cont.)*

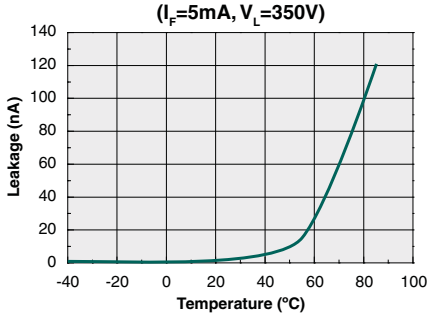
Typical Load Current vs. Load Voltage (I_F=0mA, T_A=25°C)



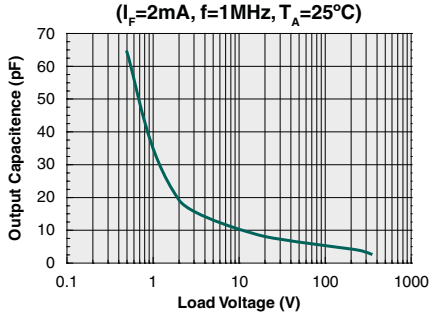
Typical Blocking Voltage vs. Temperature (I_F=5mA)



Leakage Current vs. Temperature Measured Across Pins 7 & 8 (I_F=5mA, V_L=350V)



Output Capacitance vs. Load Voltage (I_F=2mA, f=1MHz, T_A=25°C)



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Manufacturing Information

Moisture Sensitivity

All plastic encapsulated semiconductor packages are susceptible to moisture ingression. 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
CPC2330N	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.

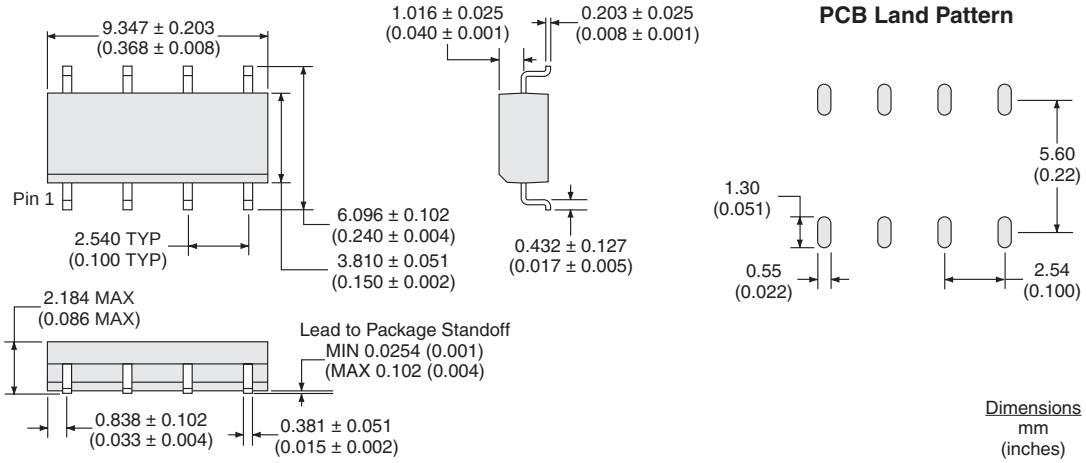
Device	Maximum Temperature x Time
CPC2330N	260°C for 30 seconds

Board Wash

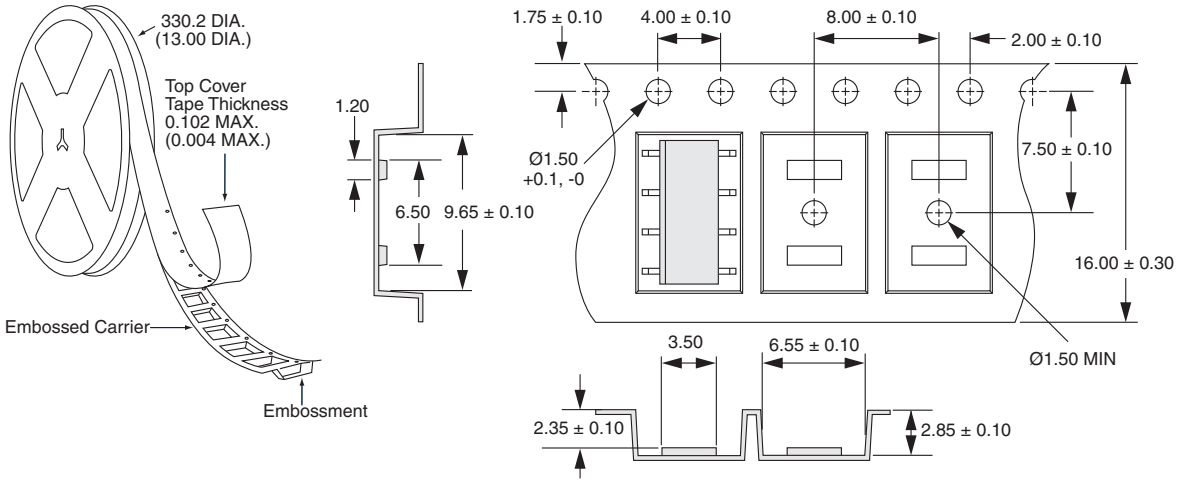
IXYS Integrated Circuits Division recommends the use of no-clean flux formulations. However, board washing to remove flux residue is acceptable. Since IXYS Integrated Circuits Division employs the use of silicone coating as an optical waveguide in many of its optically isolated products, the use of a short drying bake could be necessary if a wash is used after solder reflow processes. Chlorine- or Fluorine-based solvents or fluxes should not be used. Cleaning methods that employ ultrasonic energy should not be used.

Mechanical Dimensions

CPC2330N



CPC2330NTR Tape & Reel



NOTES:
1. All dimensions in millimeters
2. 10 sprocket hole pitch cumulative tolerance ± 0.20.
3. Carrier camber is within 1mm in 250mm.
4. Tape material : Black Conductive Polystyrene Alloy.
5. All dimensions meet EIA-481-C requirements.
6. Thickness : 0.30 ± 0.05mm.
7. Component load per 13" reel : 2000 pcs.

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

Specification: DS-CPC2330N-R03

2/1/2013

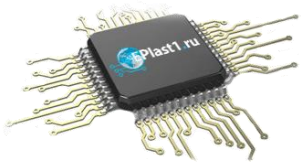
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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