Absolute Maximum Ratings @ 25°C

Parameter	Ratings	Units
Peak Blocking Voltage	600	V_P
Reverse Input Voltage	5	V
Input Control Current	50	mA
Peak (10ms)	1	A
Input Power Dissipation [1]	100	mW
Total Package Dissipation [2]	550	mW
Isolation Voltage, Input to Output	5000	V_{rms}
Operational Temperature	-40 to +85	°C
Storage Temperature	-40 to +125	°C

[1] Derate linearly 1.33mW / °C

[2] Derate output linearly 5.4mW / °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.

Typical values are characteristic of the device at +25°C, and are the result of engineering evaluations. They are provided for information purposes only, and are not part of the manufacturing testing requirements.

Electrical Characteristics @ 25°C

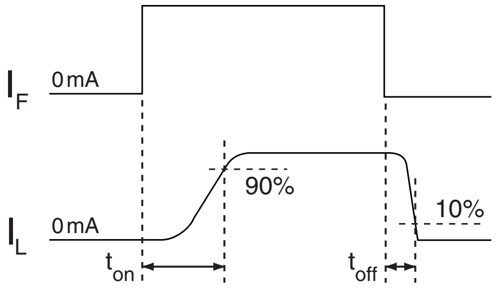
Parameters	Conditions	Symbol	Min	Typ	Max	Units
Output Characteristics						
Load Current						
Continuous [1]	-	I_L	-	-	90	mA_{rms} / mA_{DC}
Peak	t=10ms	I_{LPK}	-	-	±600	mA_P
On-Resistance [2]						
Continuous	I_L=90mA	R_{ON}		30	40	Ω
Pulse	I_L=120mA, t≤1s			26	35	
Off-State Leakage Current	$V_L=600V_P$	I_{LEAK}	-	-	1	µA
Switching Speeds						
Turn-On	I_F=5mA, V_L=10V (See Timing Diagram)	t_{on}	-	0.85	5	ms
Turn-Off		t_{off}	-	0.46	3	
Output Capacitance	I_F=0mA, V_L=50V, f=1MHz	C_{OUT}	-	50	-	pF
Input Characteristics						
Input Control Current to Activate [2,3]	I_L=120mA	I_F	-	0.45	2	mA
Input Control Current to Deactivate	-	I_F	0.2	0.4	-	
Input Voltage Drop	I_F=5mA	V_F	0.9	1.36	1.5	V
Reverse Input Current	V_R=5V	I_R	-	-	10	µA
Common Characteristics						
Input to Output Capacitance	V_{IO}=0V, f=1MHz	C_{IO}	-	3	-	pF

[1] Derate linearly 0.58mA / °C

[2] Measurement taken within 1 second of on-time.

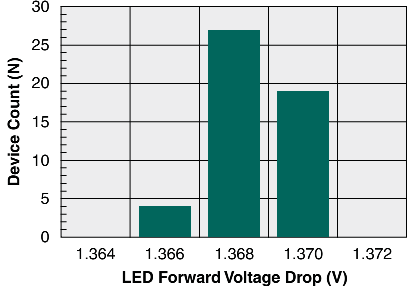
[3] For operation at temperatures >60°C, a minimum LED drive current of 4mA is recommended.

Timing Diagram

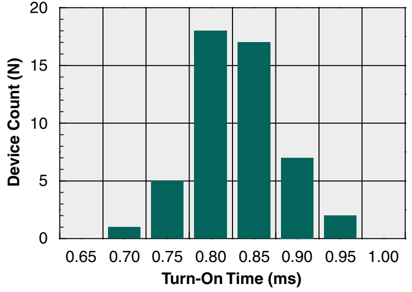


PERFORMANCE DATA @25°C (Unless Otherwise Noted)*

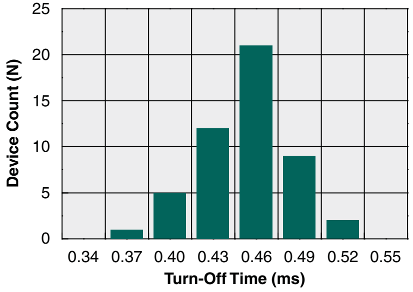
Typical LED Forward Voltage Drop (N=50, I_F=5mA)



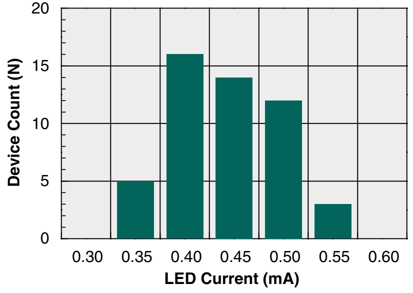
Typical Turn-On Time (N=50, I_F=5mA, I_L=120mA)



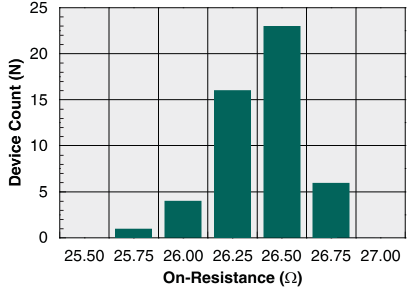
Typical Turn-Off Time (N=50, I_F=5mA, I_L=120mA)



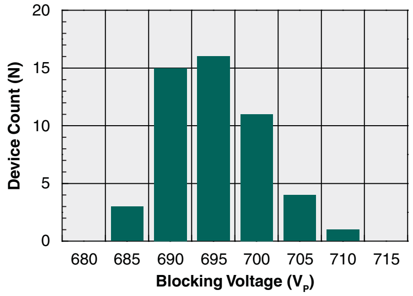
Typical I_F for Switch Operation (N=50, I_L=120mA)



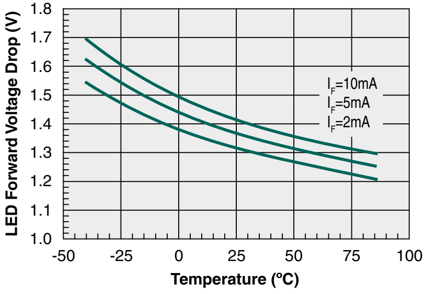
Typical On-Resistance Distribution (N=50, I_F=2mA, I_L=120mA)



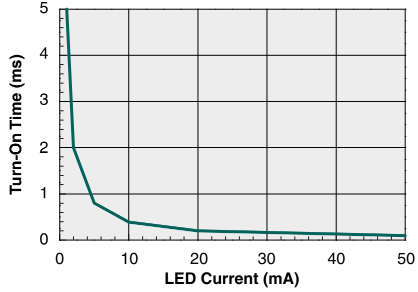
Typical Blocking Voltage Distribution (N=50)



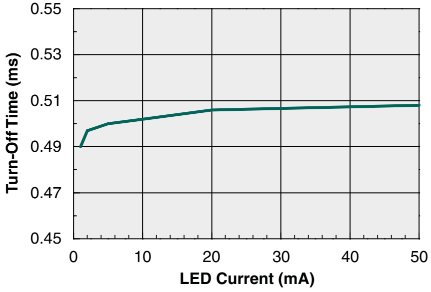
Typical LED Forward Voltage Drop vs. Temperature



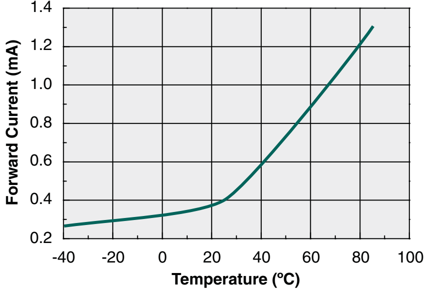
Typical Turn-On Time vs. LED Forward Current (I_L=70mA)



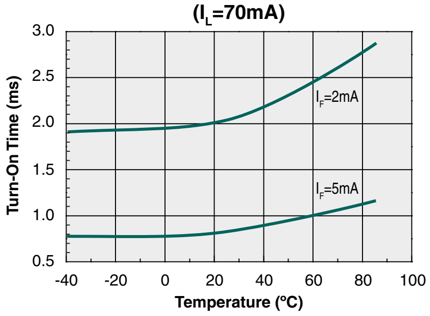
Typical Turn-Off Time vs. LED Forward Current (I_L=70mA)



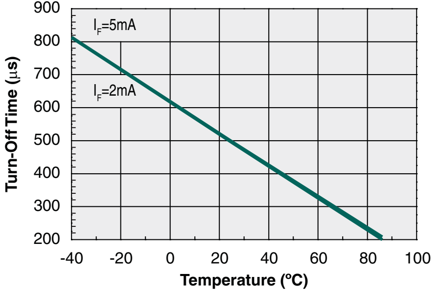
Typical I_F for Switch Operation vs. Temperature (I_L=70mA)



Typical Turn-On Time vs. Temperature (I_L=70mA)



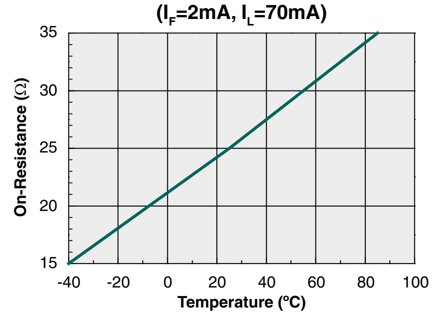
Typical Turn-Off Time vs. Temperature (I_L=70mA)



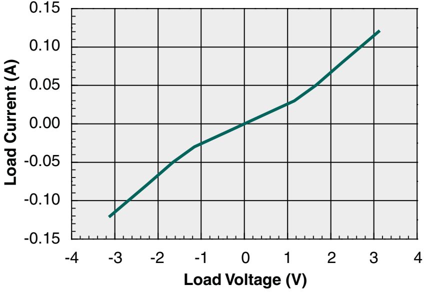
*Unless otherwise noted, data presented in these graphs is typical of device operation at 25ºC.
For guaranteed parameters not indicated in the written specifications, please contact our application department.

PERFORMANCE DATA @25°C (Unless Otherwise Noted)*

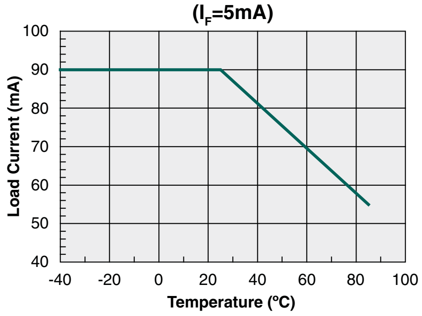
Typical On-Resistance vs. Temperature (I_F=2mA, I_L=70mA)



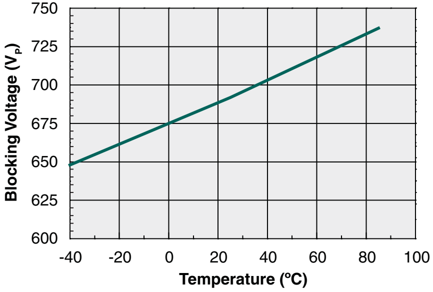
Typical Load Current vs. Load Voltage (I_F=2mA)



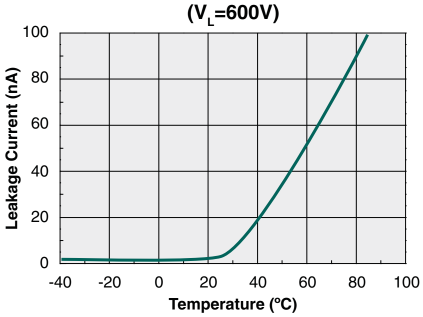
Maximum Load Current vs. Temperature (I_F=5mA)



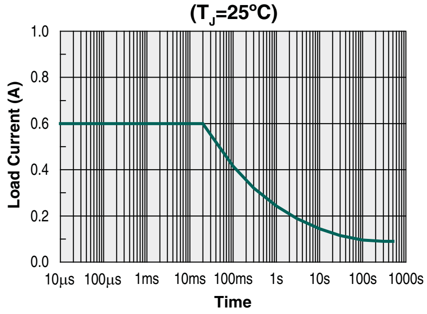
Typical Blocking Voltage vs. Temperature



Typical Leakage vs. Temperature (V_L=600V)



Energy Rating Curve (T_J=25°C)



*Unless otherwise noted, data presented in these graphs is typical of device operation at 25°C.
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 ingression. IXYS Integrated Circuits classifies 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)** classification 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) Classification
CPC1394GR	MSL 3

ESD Sensitivity

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

Soldering Profile

Provided in the table below is the **IPC/JEDEC J-STD-020** Classification Temperature (T_C) and the maximum dwell time the body temperature of these surface mount devices may be (T_C - 5)°C or greater. The Classification Temperature sets the Maximum Body Temperature allowed for these devices during reflow soldering processes.

Device	Classification Temperature (T_c)	Dwell Time (t_p)	Max Reflow Cycles
CPC1394GR	250°C	30 seconds	3

For through-hole devices, the wave soldering maximum lead (pin) temperature and the maximum dwell time the leads (pins) are at the peak soldering temperature is given in the table below. Maximum wave soldering parameters are shown below.

Device	Pin Temperature	Body Temperature	Dwell Time	Wave Cycles
CPC1394G / CPC1394GV	260°C	250°C	10 seconds	1

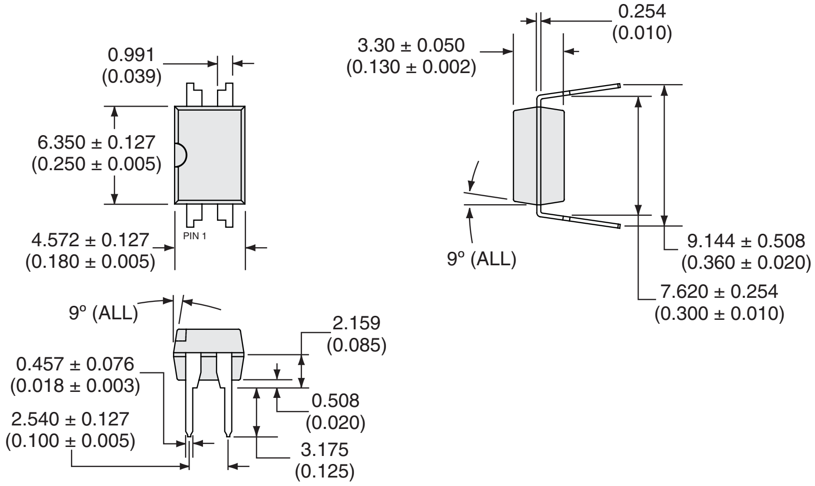
Board Wash

IXYS Integrated Circuits recommends the use of no-clean flux formulations. Board washing to reduce or remove flux residue following the solder reflow process is acceptable provided proper precautions are taken to prevent damage to the device. These precautions include but are not limited to: using a low pressure wash and providing a follow up bake cycle sufficient to remove any moisture trapped within the device due to the washing process. Due to the variability of the wash parameters used to clean the board, determination of the bake temperature and duration necessary to remove the moisture trapped within the package is the responsibility of the user (assembler). Cleaning or drying methods that employ ultrasonic energy may damage the device and should not be used. Additionally, the device must not be exposed to halide flux or solvents.

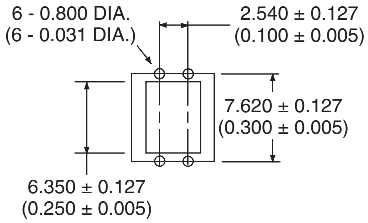
Pb RoHS e3

MECHANICAL DIMENSIONS

CPC1394G

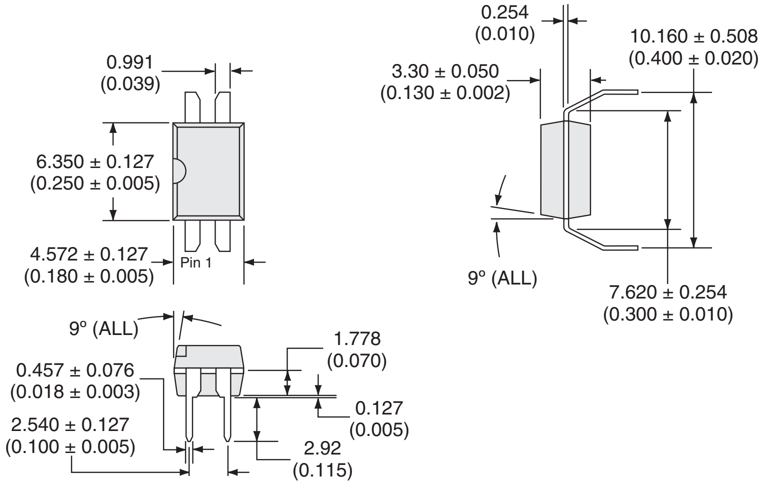


PC Board Pattern (Top View)

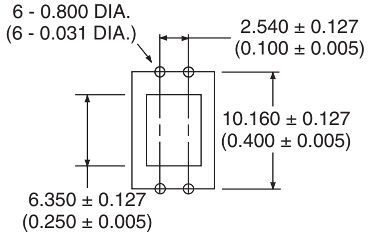


Dimensions
mm
(inches)

CPC1394GV

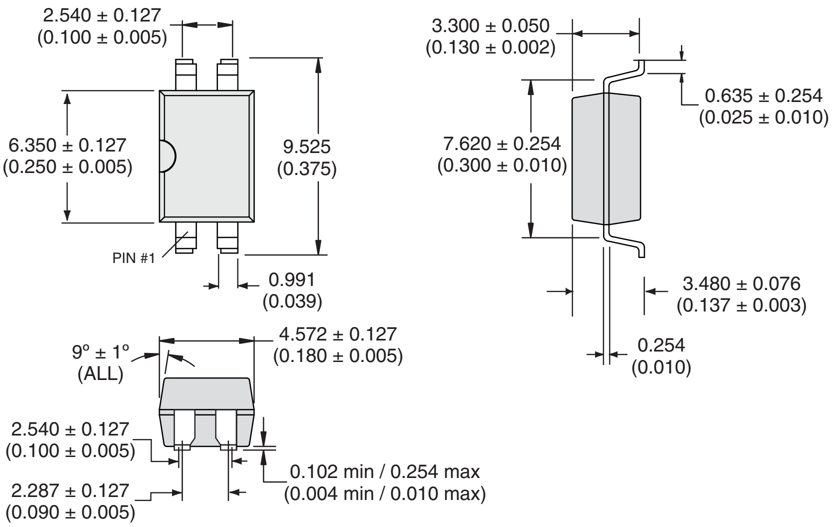


PC Board Pattern (Top View)

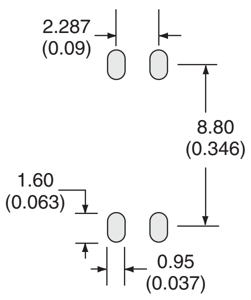


Dimensions
mm
(inches)

CPC1394GR

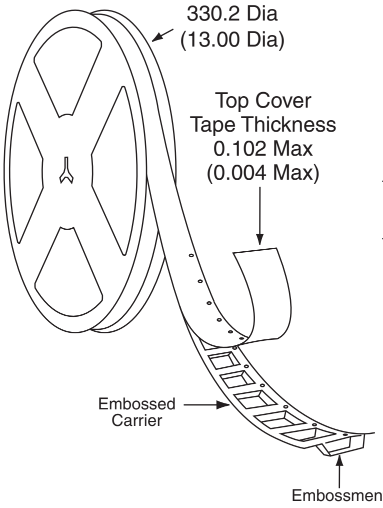


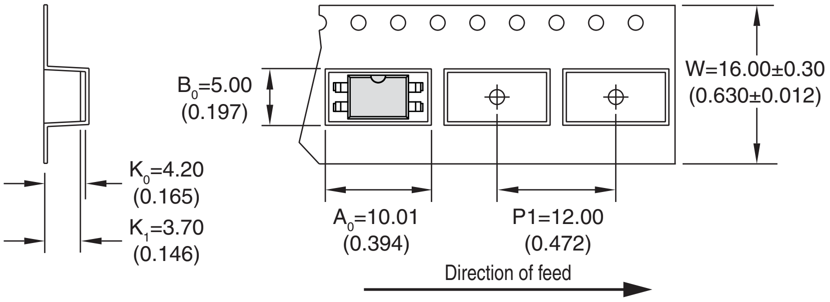
PCB Land Pattern



Dimensions
mm
(inches)

CPC1394GRTR Tape & Reel





Dimensions
mm
(inches)

NOTES:
1. All dimensions meet EIA-481-C requirements
2. Unless otherwise noted, tolerances = ±0.10 (0.004)

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

IXYS
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Specification: DS-CPC1394-R05

12/11/2019