

# **CTH Series** Capacitive Touch Sensor Display 15.0 x 15.0 x 11.0 mm



CTHS15CIC06 - Blue Capacitive Touch Sensor Through Hole with a Display Size of 0.59 x 0.59 inches (15 x 15 mm) square









### **Applications**

- Mobile communication devices
- · Electronic devices
- Point of sale Terminals
- Gaming
- Industrial control displays

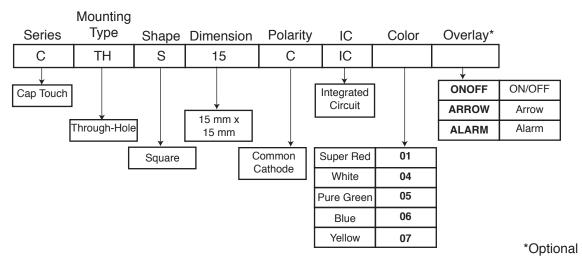
- Touch Screen Monitors
- Portable Instruments
- Media Players
- Medical devices
- · Appliances and consumer equipments

### **Key Features**

- Integrated touch sensing and display technology
- Enables the device interface to be more user friendly and intuitive
- Mounting type: through hole (industry standard pitch 0.100")
- Available in one standard size: 15.0mm x 15.00mm x 11.00mm
- Available in 5 colors: super red, white, pure green, blue or yellow
- Touch sensor: integrated circuit (IC)
- Uniform illumination and high optical clarity due to LED technology
- Robust design due to no mechanical moving parts
- Simplifies devices design and manufacturability
- Optional overlay (icons): on/off, arrow, alarm
- Custom overlay icon can be manufactured upon request contact VCC
- Compliant with RoHS and REACH requirements
- Capacitive sensor still functional when hands are wet
- Capacitive sensor still functional when hands are covered with certain types of gloves

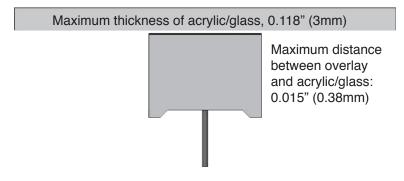
### **Ordering Data**

The CTH Series (Cap Touch) is available in a range of standard features and options. To specify your Cap Touch Display, simply choose one option from each column.



### **Overlay**

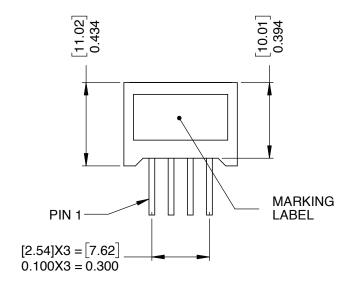
- Different LED colors can indicate the mode in which an electronic device is operating, depending on the icon associated with it.
- Optional graphic overlay made with polished LEXAN™ Polycarbonate 8010 Film 0.007" (0.175 mm) thick has reverse printed translucent white icon, in order to still see it even when the back lighting is off.
- Lexan 8010 is a transparent polycarbonate film and offers hardness, chemical and abrasion resistance, stiffness, and high temperature capability.
- Adhesive: 3 M waterclear
- Three standard icons are available: alarm, arrow and on-off. Custom icons are also available upon request.
- Capacitive Touch Display can also be mounted behind clear glass or plastic layer such as polycarbonate or acrylic, as shown in the picture below.
- Suggested overlay size: 0.590" x 0.590"

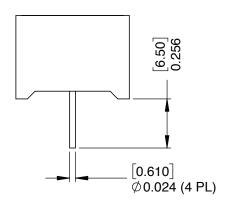


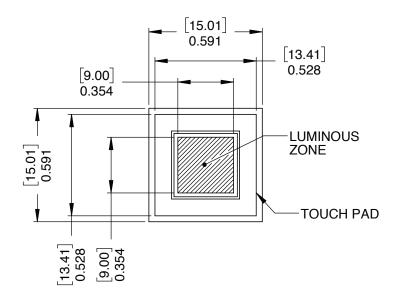
Suggested icon size: 0.34" x 0.34" (max.)

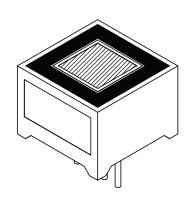
<u></u>	Overlay On/Of			
•	Overlay Arrow			
Ŵ	Overlay Alarm			

# **Package Dimensions**

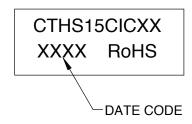








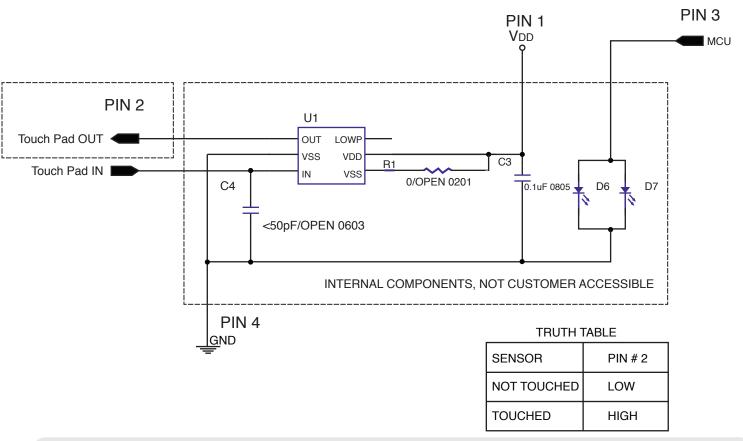
#### **MARKING LABEL INFO**



Dimensions in [mm] inches General tolerances unless otherwise specified:

	inches	mm
.X	± .020	±.508
.XX	±.010	±.254
.XXX	±.005	±.127

### **Internal Circuit Diagram**



### **Internal IC Electrical Characteristics**

## (TA = 25°C, unless otherwise specified)

Symbol	Parameter	Condition	Min.	Тур.	Max.	Units.
VDD	Supply Voltage ( Pin#1)		2.0		5.5	V
VIH	High Level Input Voltage	@ VDD = 5V	0.7VDD		VDD	V
VIL	Low Level Input Voltage	@ VDD = 5V			0.3VDD	V
IDD1	IDD1 Operating Current	@ VDD = 5V , no load		16		μΑ
- IDD I Operating Cameria		@ VDD = 3V , no load		3.5		μ, τ
IDD2	Operating Current	@ VDD = 5V , no load		10.5		μΑ
( SLRT=VDD )	@ VDD = 3V , no load		2.5		μ, τ	
IOL	Low Level Output Current (Pin#2)	@ VDD = 3V, VOL = 1V		30		mA
ЮН	High Level Output Current (Pin#2)	@ VDD = 3V, VOL = 2V		8		mA

# **Product Specifications**

### **ABSOLUTE MAXIMUM RATING FOR LED**

(Ta=25°C)

Parameter	Symbol	Rating	Unit
		Blue	
Power Dissipation Per LED	PAD	114	mW
Derating Liner from 25°C per LED	-	0.4	mA/°C
Continuous Forward Current Per LED	IAF	30	mA
Peak Current Per LED (duty cycle 1/10,1KHz)	IPF	100	mA
Reverse Voltage Per LED	VR	5	V
Operating Temp.	Topr	-35 ~ +85	°C
Storage Temp.	Tstg	-35 ~ +85	°C

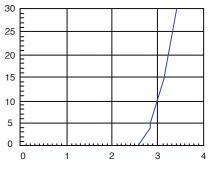
### **ELECTRO-OPTICAL CHARACTERISTICS**

(Ta=25°C)

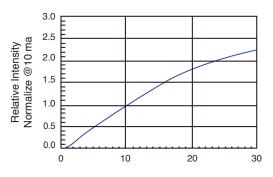
Parameter	Symbol	Min.	Тур.	Max.	Unit	Condition
Luminous Intensity	lv	44	92		mcd	IF = 20 mA
Forward Voltage	VF		3.2	3.8	V	IF = 20 mA
Peak Emission Wavelength	λР				nm	IF = 20 mA
Dominant Wavelength	λD		470		nm	IF = 20 mA
Spectrum Radiation Bandwidth	Δλ		30		nm	IF = 20 mA
Luminous Intensity Matching Ratio	Iv-м		-	2:1		IF = 10 mA
Reverse Current	lr		-	50	μΑ	V <sub>R</sub> = 5V

### **ELECTRICAL/OPTICAL CHARACTERISTICES CURVES**

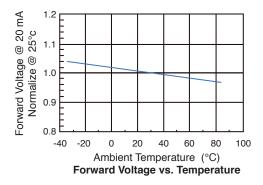
(Ta=25°C)

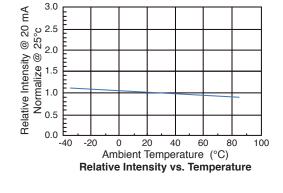


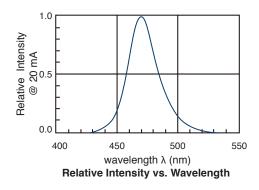
Forward Voltage (V)
Forward Current vs. Forward Voltage

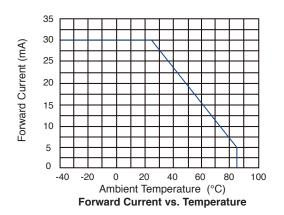


Forward Voltage (mA)
Relative Intensity vs. Forward Current









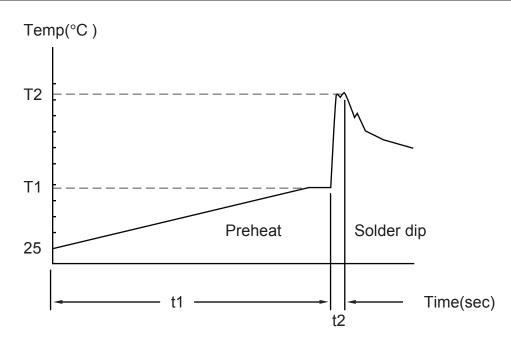
# **Product Specifications**

#### **SOLDERING CONDITIONS**

### 1. Wave Soldering Profile

Distance: 1.6mm min (From Seating Plane)

Item	Condition		Note
Preheat	Temperature T1	80 – 120 °C	PWB Temperature
Preneat	Time t1	60 – 180sec	(Soldering Side Surface)
Solder Dip	Temperature T2	230 – 260°C	Bath Temperature
Solder Dip	Time t2	2 – 4 sec	Solder Tank Passage Time



### 2. Hand Soldering (Iron Condition)

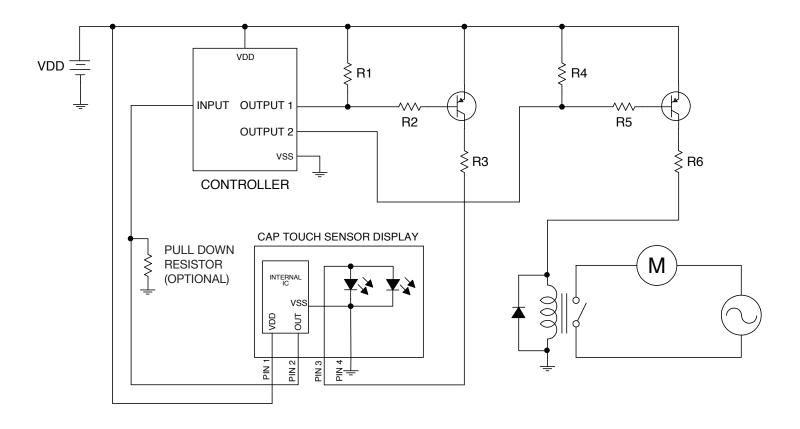
Soldering Iron: 30W Max

Temperature 350°C Max

Soldering Time: 3 Seconds Max (One Time)

Distance: 1.6mm min (From Seating Plane)

# **Application Circuit**



### **Compliances and Approvals**



