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



CTHS15CIC01 - Super Red 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

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.

Series	Mounting Type	Shape	Dimension	Polarity	IC	Color	Overlay*
C	TH	S	15	C	IC		

- Series: C — Cap Touch
- Mounting Type: TH — Through-Hole
- Shape: S — Square
- Dimension: 15 — 15 mm x 15 mm
- Polarity: C — Common Cathode
- IC: IC — Integrated Circuit
- Color:

Super Red	**01**
White	**04**
Pure Green	**05**
Blue	**06**
Yellow	**07**

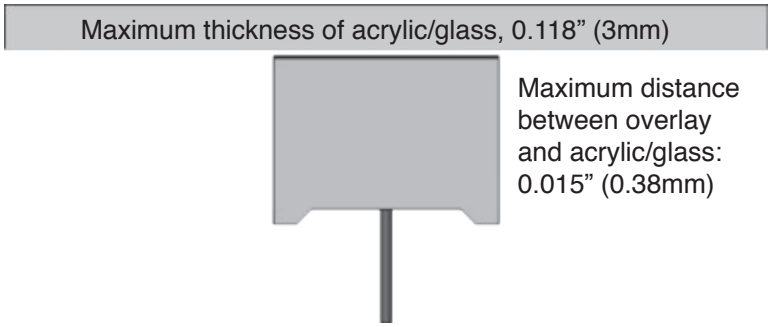
- Overlay*:

ONOFF	ON/OFF
ARROW	Arrow
ALARM	Alarm

*Optional

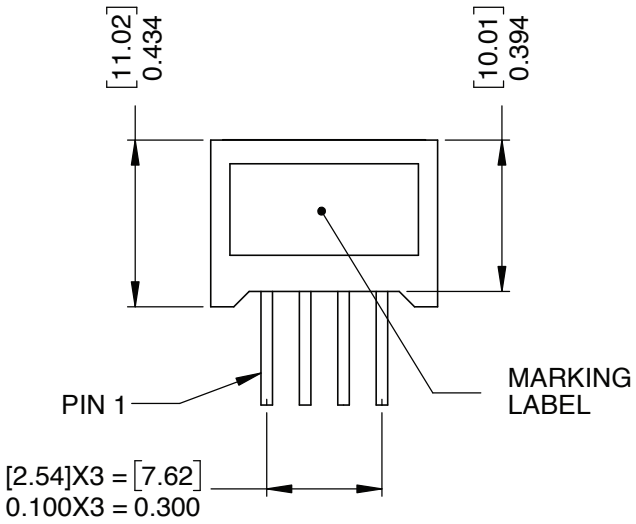
Overlay

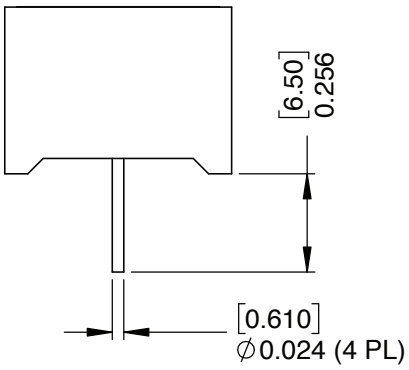
- Different LED colors can indicate the mode in which an electronic device is operating, depending on the icon associated with it.
- Optional graphic overlay made with polished LEXAN™ Polycarbonate 8010 Film 0.007" (0.175 mm) thick has reverse printed translucent white icon, in order to still see it 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.
- 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.

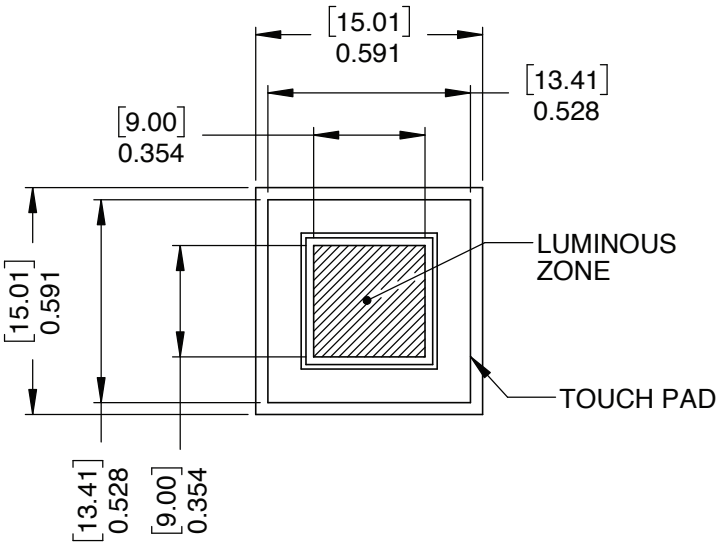


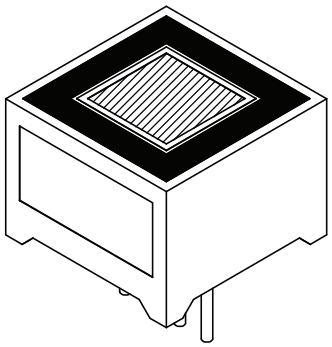
	Overlay On/Off
	Overlay Arrow
	Overlay Alarm

Package Dimensions

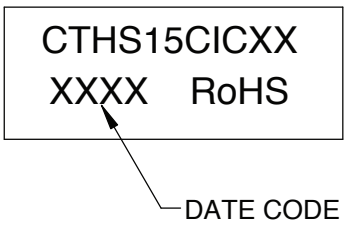








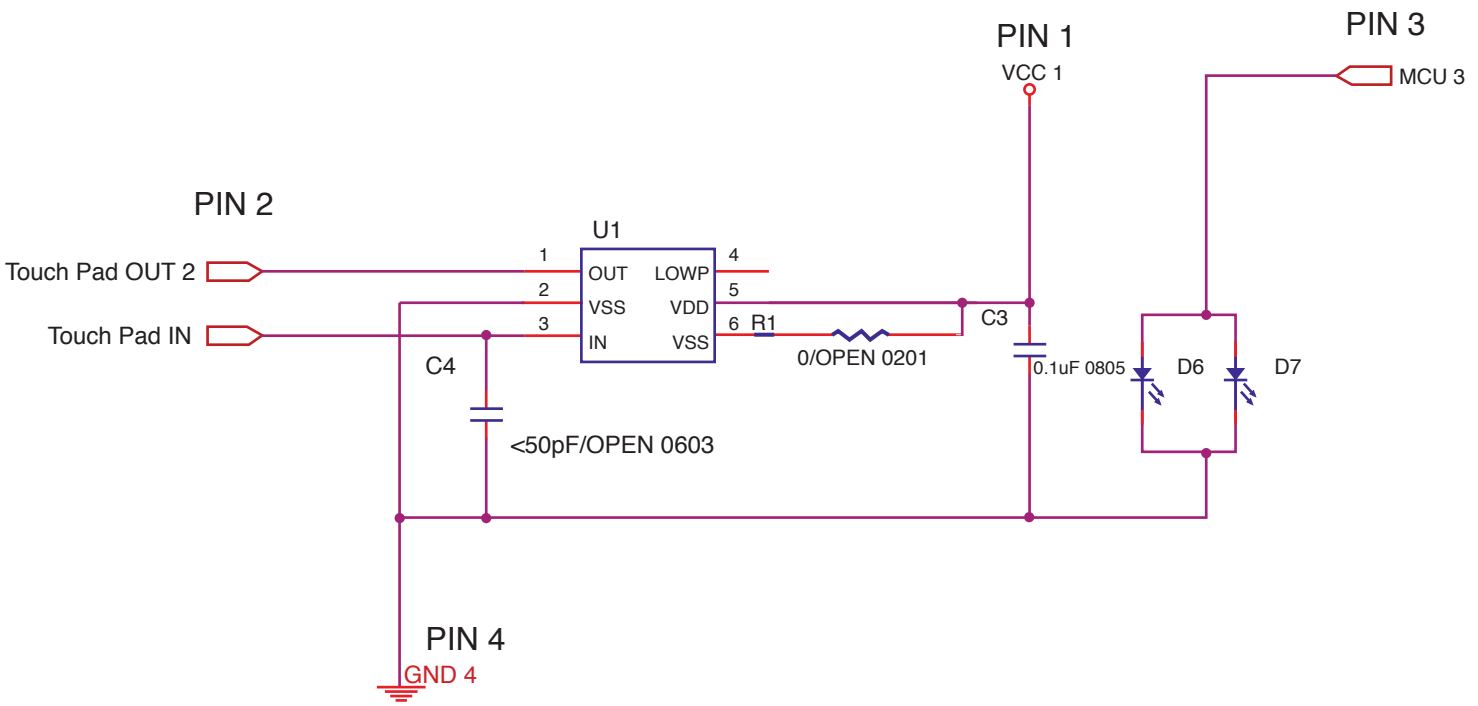
MARKING LABEL INFO



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

(T_A = 25°C, unless otherwise specified)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units.
V_{DD}	Supply Voltage		2.0		5.5	V
V_{IH}	High Level Input Voltage	@ V_{DD} = 5V	0.7V_{DD}		V_{DD}	V
V_{IL}	Low Level Input Voltage	@ V_{DD} = 5V			0.3V_{DD}	V
I_{DD1}	Operating Current	@ V_{DD} = 5V , no load		16		µA
		@ V_{DD} = 3V , no load		3.5		
I_{DD2}	Operating Current (SLRT=VDD)	@ V_{DD} = 5V , no load		10.5		µA
		@ V_{DD} = 3V , no load		2.5		
I_{OL}	Low Level Output Current	@ V_{DD} = 3V, V_{OL} = 1V		30		mA
I_{OH}	High Level Output Current	@ V_{DD} = 3V, V_{OL} = 2V		8		mA

Product Specifications

ABSOLUTE MAXIMUM RATING FOR LED

(Ta=25°C)

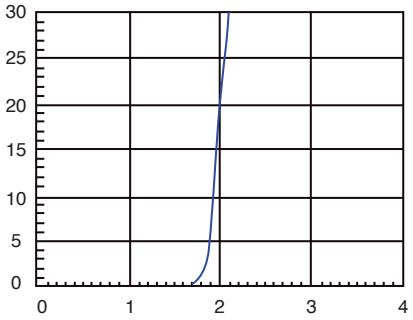
Parameter	Symbol	Rating	Unit
		Red	
Power Dissipation Per Dice	PAD	70	mW
Derating Liner from 25°C per Dice	-	0.33	mA/°C
Continuous Forward Current Per Dice	IAF	25	mA
Peak Current Per Dice (duty cycle 1/10,1KHz)	IPF	90	mA
Reverse Voltage Per Dice	VR	5	V
Operating Temp.	Topr	-35 ~ +85	°C
Storage Temp.	Tstg	-35 ~ +85	°C

ELECTRO-OPTICAL CHARACTERISTICS

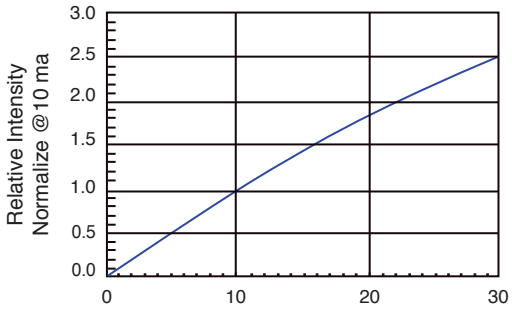
(Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	17	31	--	mcd	I_F = 20 mA
Forward Voltage	V_F	--	2.0	2.8	V	I_F = 20 mA
Peak Emission Wavelength	λP	--	660	--	nm	I_F = 20 mA
Dominant Wavelength	λD	--	645	--	nm	I_F = 20 mA
Spectrum Radiation Bandwidth	△λ	--	20	--	nm	I_F = 20 mA
Luminous Intensity Matching Ratio	I_{V-M}	--	-	2 : 1	--	I_F = 10 mA
Reverse Current	I_R		-	100	μA	V_R = 5V

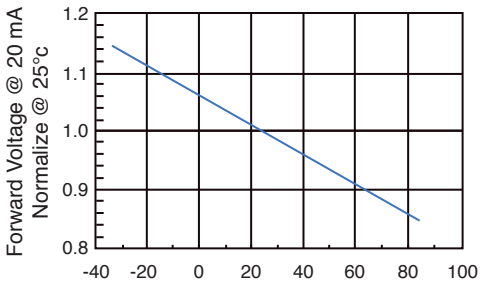
ELECTRICAL/OPTICAL CHARACTERISTICES CURVES (Ta=25°C)



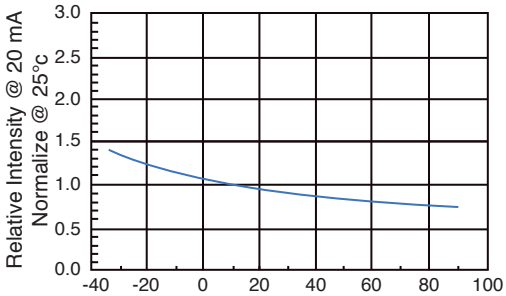
Forward Current vs. Forward Voltage



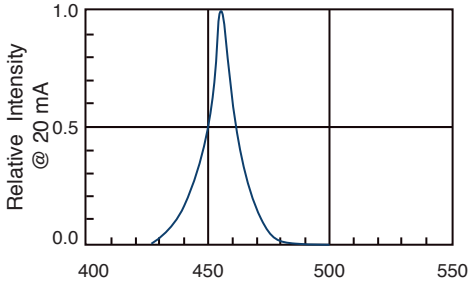
Relative Intensity vs. Forward Current



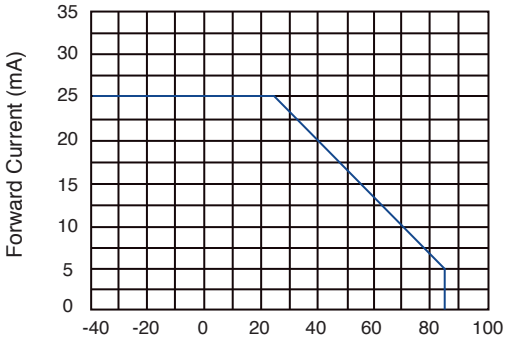
Forward Voltage vs. Temperature



Relative Intensity vs. Temperature



Relative Intensity vs. Wavelength



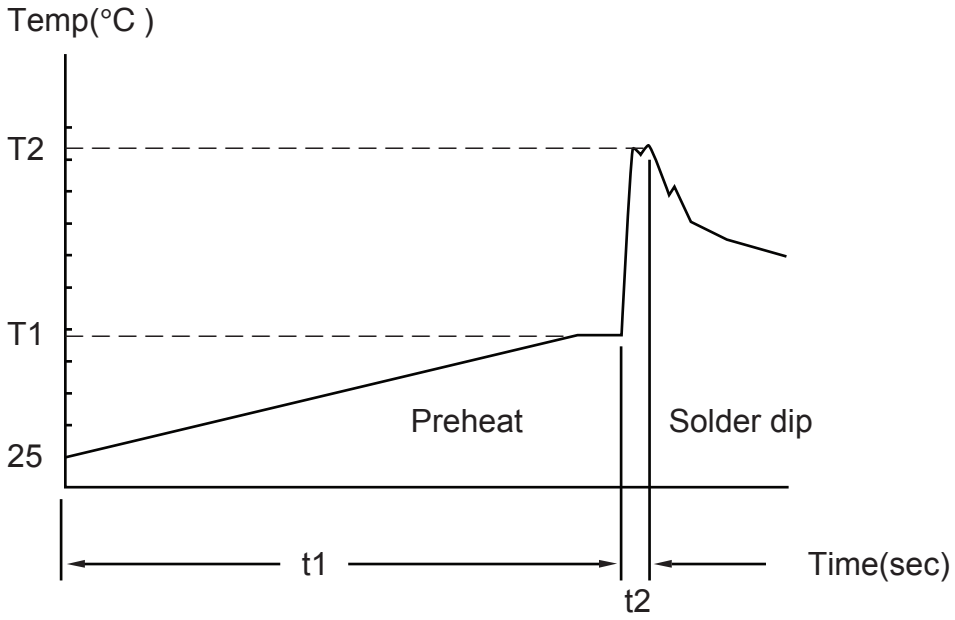
Forward Current vs. Temperature

SOLDERING CONDITIONS

1. Wave Soldering Profile

Distance: 1.6mm min (From Seating Plane)

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



2. Hand Soldering (Iron Condition)

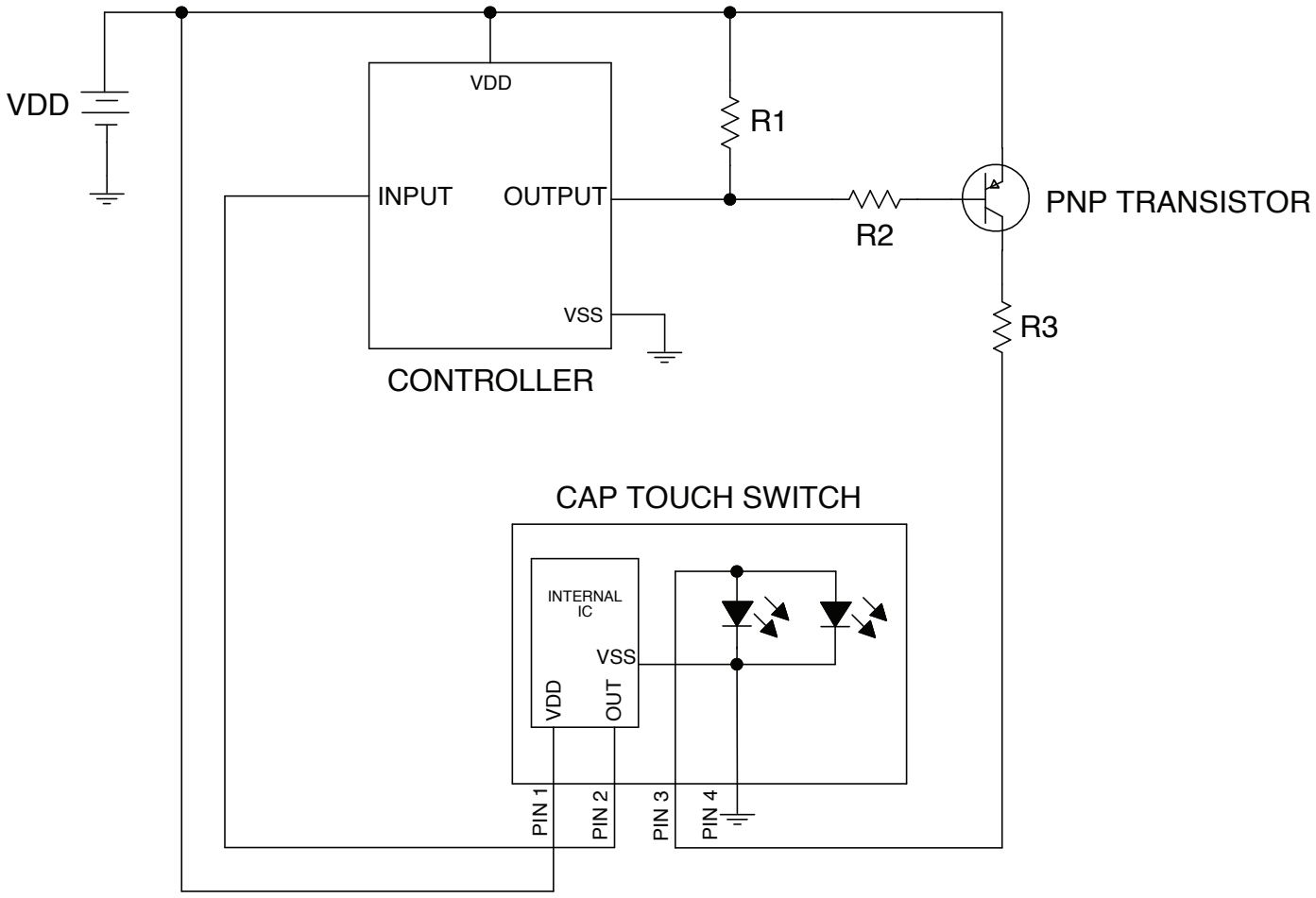
Soldering Iron: 30W Max

Temperature 350°C Max

Soldering Time: 3 Seconds Max (One Time)

Distance: 1.6mm min (From Seating Plane)

Application Circuit



Compliances and Approvals