CAP1066

6 Channel Capacitive Touch Sensor with 6 LED Drivers

PRODUCT FEATURES

General Description

The CAP1066 is a multiple channel Capacitive Touch sensor with multiple power LED drivers. It contains six (6) individual Capacitive Touch sensor inputs with programmable sensitivity for use in touch sensor applications. Each sensor automatically recalibrates to compensate for gradual environmental changes.

The CAP1066 also contains six (6) LED drivers that offer full-on / off, variable rate blinking, dimness controls, and breathing. Each of the LED drivers may be linked to one of the sensors to be actuated when a touch is detected. As well, each LED driver may be individually controlled via a host controller.

The CAP1066 offers multiple power states operating at low quiescent currents.

During the Standby mode of operation, one or more Capacitive Touch Sensors are active and all LEDs may be used. If a touch is detected, it will wake the system using the WAKE/SPI_MOSI pin.

The Deep Sleep mode of operation is the lowest power state available, drawing 3uA of current. During this mode, no sensors are active although all LEDs may be used. Driving the WAKE/SPI_MOSI pin or communications will wake the device.

Applications

- Desktop and Notebook PCs
- LCD Monitors
- Printers
- Appliances

Features

- Six (6) Capacitive Touch Sensor Inputs
  — Programmable sensitivity
  — Automatic recalibration
  — Individual thresholds for each button
- Flexible Capacitive Touch Sense algorithm
- Multiple Communication interfaces
  — SMBus / I^2C compliant interface
  — SMSC BC-Link interface
  — SPI communications
  — Pin selectable communications protocol and multiple slave addresses (SMBus / I^2C only)
- Low Power operation
  — 3uA quiescent current in Deep Sleep
  — Samples one or more channels in Standby
- Six (6) LED Driver Outputs
  — Open Drain or Push-Pull
  — Programmable blink, breathe, and dimness controls
  — Can be linked to Capacitive Touch Sensors
- Dedicated Wake output flags touches in low power mode
- System RESET pin
- Available in 20-pin 4mm x 4mm RoHS compliant QFN package

Block Diagram
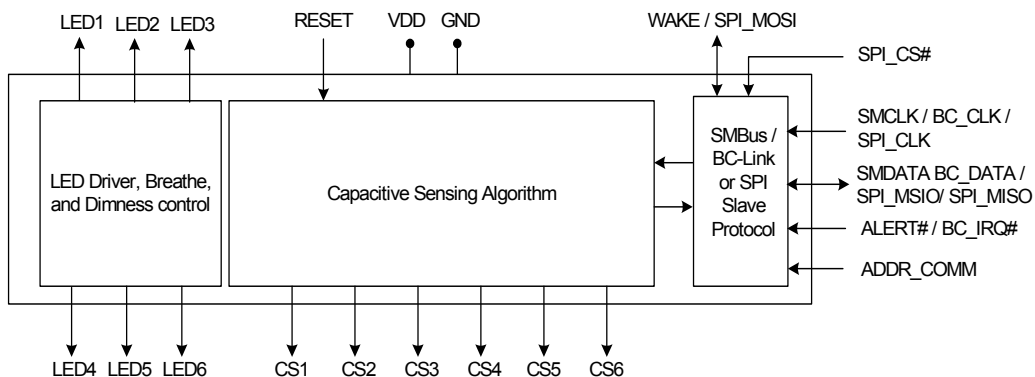
Note: I^2C is a trademark of NXP Semiconductors. SMSC BC-Link is a trademark of SMSC.

ORDER NUMBER(S):

ORDERING NUMBER	PACKAGE	FEATURES
CAP1066-1-BP-TR	20-pin QFN 4mm x 4mm (Lead Free RoHS compliant)	Six Capacitive Touch Sensors, Six LED drivers, Dedicated Wake, Reset, SMBus / BC-Link / SPI interfaces

REEL SIZE IS 4,000 PIECES

This product meets the halogen maximum concentration values per IEC61249-2-21

For RoHS compliance and environmental information, please visit www.smsc.com/rohs

PRODUCT PREVIEW

Package Outline

CAP1066 Package Drawings
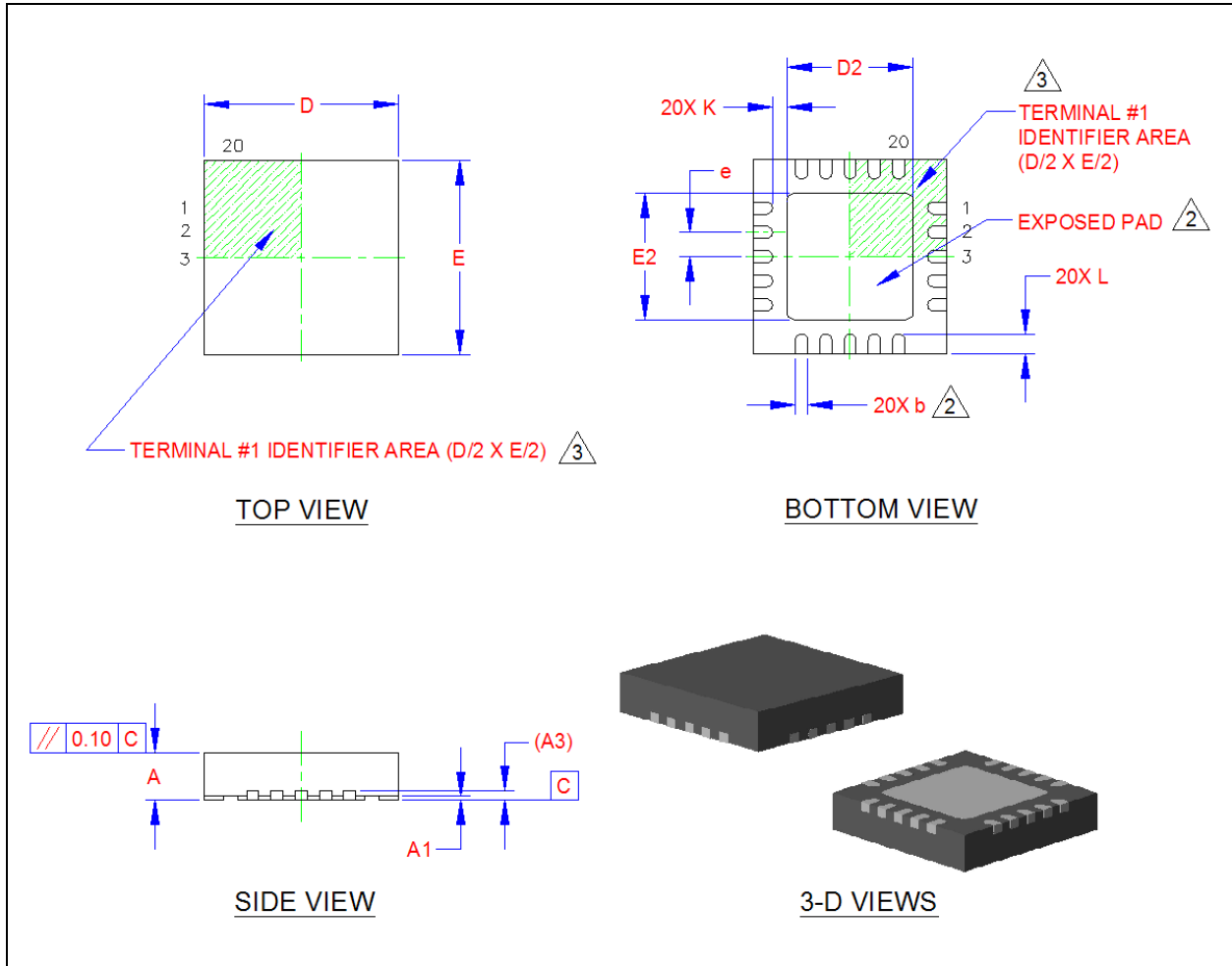
Figure 1 20-Pin QFN 4mm x 4mm Package Drawing

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PRODUCT PREVIEW

COMMON DIMENSIONS					
SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	0.80	0.85	0.90	-	OVERALL PACKAGE HEIGHT
A1	0	0.02	0.05	-	STANDOFF
A3		0.20 REF		-	LEAD-FRAME THICKNESS
D/E	3.90	4.00	4.10	-	X/Y BODY SIZE
D2/E2	2.50	2.60	2.70	2	X/Y EXPOSED PAD SIZE
L	0.35	0.40	0.45	-	TERMINAL LENGTH
b	0.18	0.25	0.30	2	TERMINAL WIDTH
K	0.20	-	-	-	TERMINAL TO PAD DISTANCE
e		0.50 BSC		-	TERMINAL PITCH

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. POSITION TOLERANCE OF EACH TERMINAL AND EXPOSED PAD IS ± 0.05mm AT MAXIMUM MATERIAL CONDITION. DIMENSIONS "b" APPLIES TO PLATED TERMINALS AND IT IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP.
3. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE AREA INDICATED.

Figure 2 20-Pin QFN 4mm x 4mm Package Dimensions

FULL RADIUS IS OPTIONAL

THE USER MAY MODIFY THE PCB LAND PATTERN DIMENSIONS BASED ON THEIR EXPERIENCE AND/OR PROCESS CAPABILITY

LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD/GE	3.01	-	-
D2'/E2'	-	2.60	-
X	-	-	0.28
Y	-	-	0.65
e		0.50	
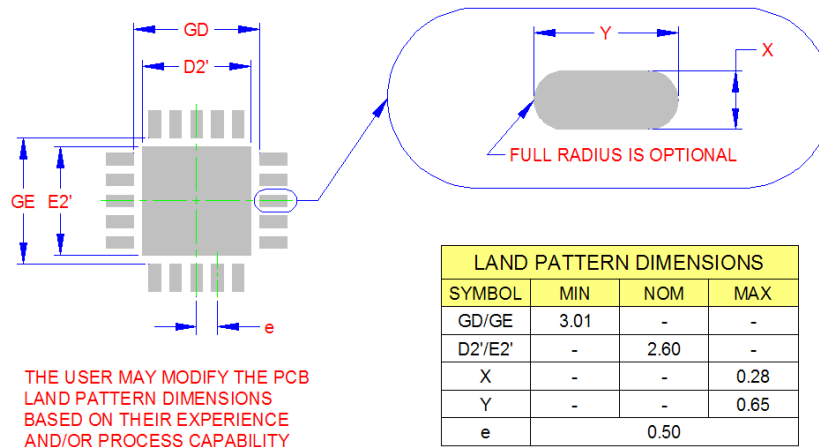
RECOMMENDED PCB LAND PATTERN

Figure 3 20-Pin QFN 4mm x 4mm PCB Drawing

PRODUCT PREVIEW