



## 3 Channel Capacitive Touch Sensor with 3 LED Drivers

### PRODUCT FEATURES

Data Brief

#### General Description

The CAP1033 is a multiple channel Capacitive Touch sensor with multiple power LED drivers. It contains three (3) 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 CAP1033 also contains three (3) 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 CAP1033 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.

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. Communications will wake the device.

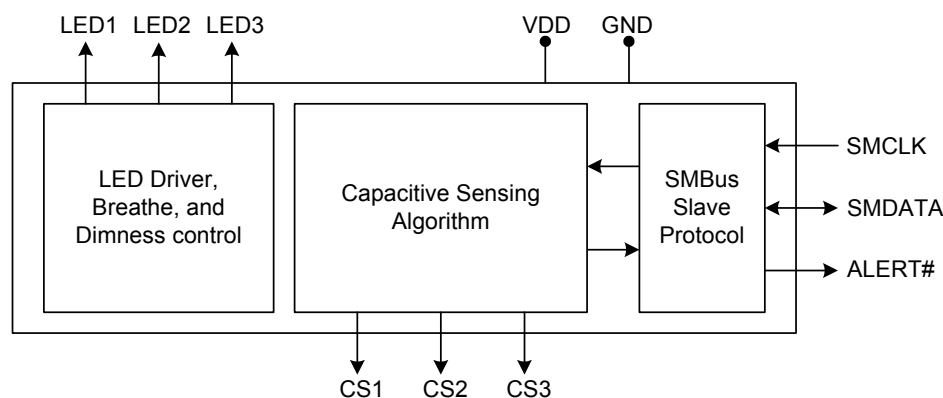
#### Applications

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

#### Features

- Three (3) Capacitive Touch Sensor Inputs
  - Programmable sensitivity
  - Automatic recalibration
  - Individual thresholds for each button
- Flexible Capacitive Touch Sense algorithm
- SMBus / I<sup>2</sup>C compliant communication interface
- Low Power operation
  - 3uA quiescent current in Deep Sleep
  - Samples one or more channels in Standby
- Three (3) LED Driver Outputs
  - Open Drain or Push-Pull
  - Programmable blink, breathe, and dimness controls
  - Can be linked to Capacitive Touch Sensors
- Available in 10-pin 3mm x 3mm RoHS compliant DFN package

#### Block Diagram



**Note:** I<sup>2</sup>C is a trademark of NXP Semiconductors.

**ORDER NUMBER(S):**

<b>ORDERING NUMBER</b>	<b>PACKAGE</b>	<b>FEATURES</b>
CAP1033-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead Free RoHS compliant)	Three Capacitive Touch Sensors, Three LED drivers, SMBus interface

**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](http://www.smSC.com/rohs)**

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# Package Outline

## CAP1033 Package Drawings

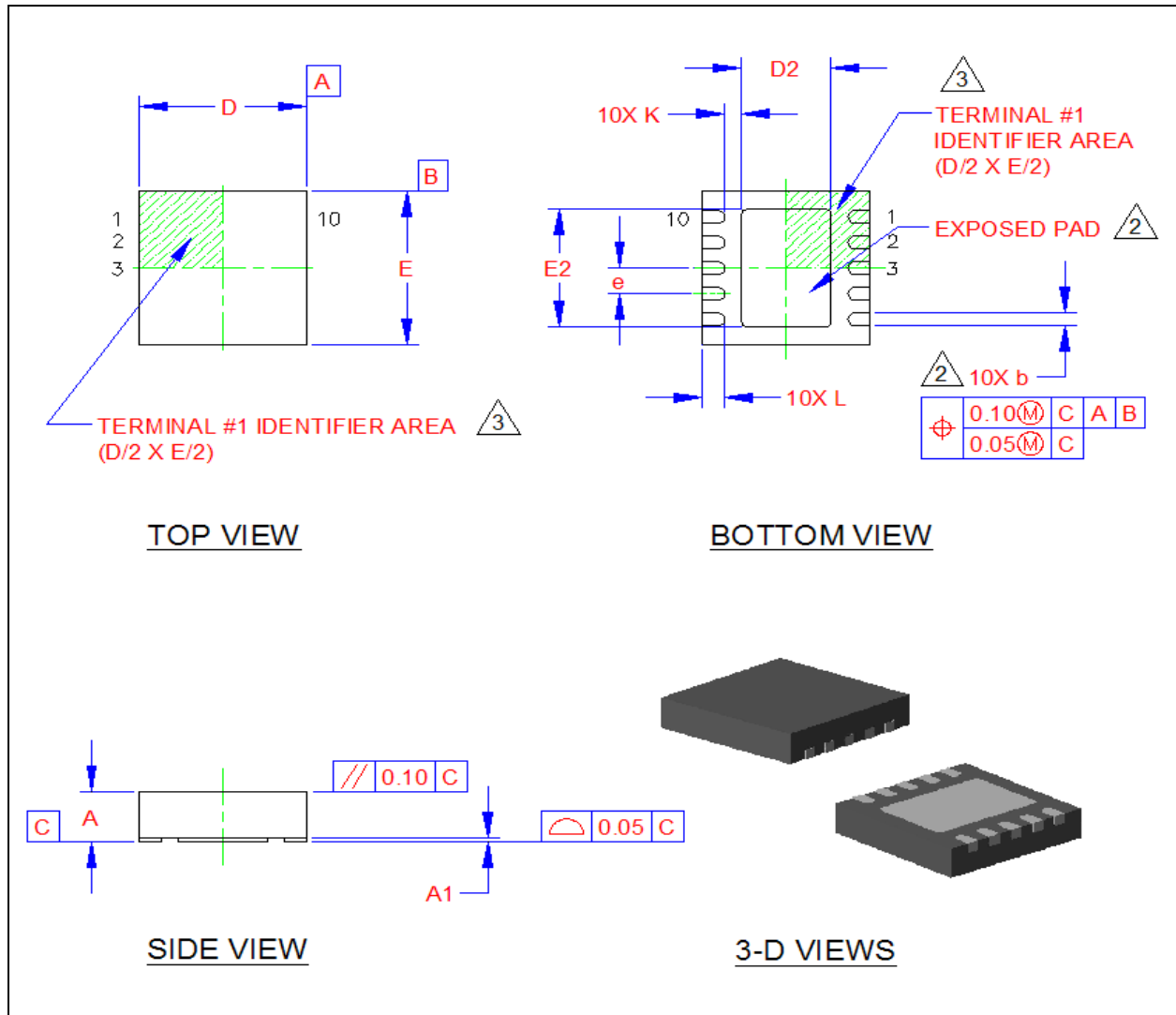
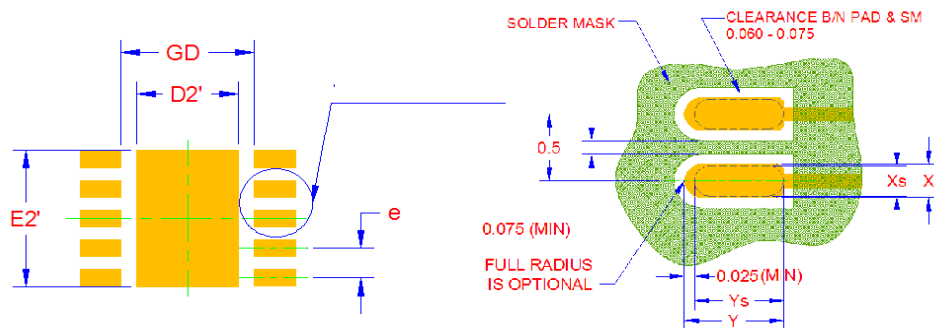


Figure 1 10-Pin DFN 3mm x 3mm Package Drawings

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
D/E	2.90	3.00	3.10	-	X/Y BODY SIZE
D2	1.50	1.60	1.70	2	X EXPOSED PAD SIZE
E2	2.20	2.30	2.40	2	Y EXPOSED PAD SIZE
L	0.35	0.40	0.45	-	TERMINAL LENGTH
b	0.18	0.25	0.30	2	TERMINAL WIDTH
K	0.25	0.30	-	-	TERMINAL TO PAD DISTANCE
e	0.50 BSC			-	TERMINAL PITCH

**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. UNILATERAL COPLANARITY ZONE APPLIES TO THE EXPOSED PAD, AS WELL AS THE TERMINALS. 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 10-Pin DFN 3mm x 3mm Package Dimensions**

**PCB LAND PATTERN**

LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD	2.10	-	2.20
D2'	-	1.60	1.60
E2'	-	2.30	-
Pad: X	-	0.28	0.28
Pad: Y	-	0.69	0.69
e	0.50		

**Figure 3 10-Pin DFN 3mm x 3mm PCB Footprint**