CAP1133

3 Channel Capacitive Touch Sensor with 3 LED Drivers

PRODUCT FEATURES

Data Brief

General Description

The CAP1133, which incorporates SMSC's RightTouch™ [1] technology, 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 input automatically recalibrates to compensate for gradual environmental changes.

The CAP1133 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 sensor inputs to be actuated when a touch is detected. As well, each LED driver may be individually controlled via a host controller.

The CAP1133 includes Multiple Pattern Touch recognition that allows the user to select a specific set of buttons to be touched simultaneously. If this pattern is detected, then a status bit is set and an interrupt generated.

Additionally, the CAP1133 includes circuitry and support for enhanced sensor proximity detection.

The CAP1133 offers multiple power states operating at low quiescent currents. In the Standby state of operation, one or more capacitive touch sensor inputs are active and all LEDs may be used.

Deep Sleep is the lowest power state available, drawing 5uA (typical) of current. In this state, no sensor inputs are active. Communications will wake the device.

Applications

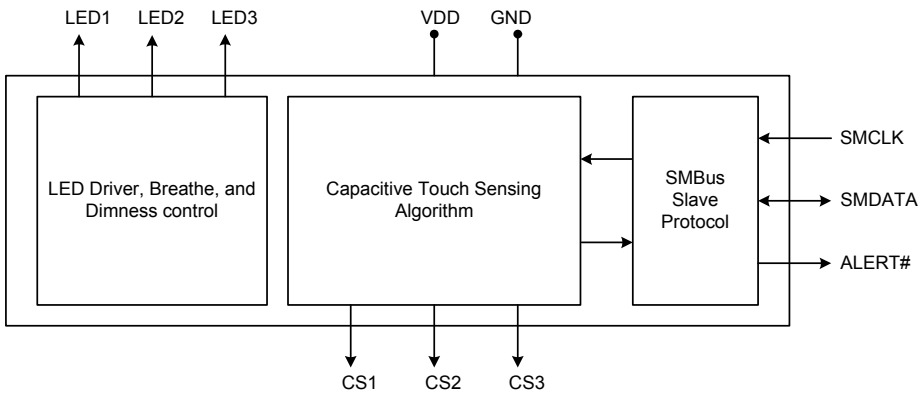
- Desktop and Notebook PCs
- LCD Monitors
- Consumer Electronics
- Appliances

Features

- Three (3) Capacitive Touch Sensor Inputs
  - Programmable sensitivity
  - Automatic recalibration
  - Individual thresholds for each button
- Proximity Detection
- Multiple Button Pattern Detection
- Calibrates for Parasitic Capacitance
- Analog Filtering for System Noise Sources
- Press and Hold feature for Volume-like Applications
- SMBus / I^2C Compliant Communication Interface
- Low Power Operation
  - 5uA quiescent current in Deep Sleep
  - 50uA quiescent current in Standby (1 sensor input monitored)
  - 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 Sensor inputs
- Available in 10-pin 3mm x 3mm RoHS compliant DFN package

1. SMSC and the SMSC logo are registered trademarks and SMSC RightTouch and the RightTouch logo are trademarks of Standard Microsystems Corporation ("SMSC").

Block Diagram



PRODUCT PREVIEW

Order Number(s):

ORDERING NUMBER	PACKAGE	FEATURES
CAP1133-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead-free RoHS compliant)	Three capacitive touch sensor inputs, 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

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Package Information

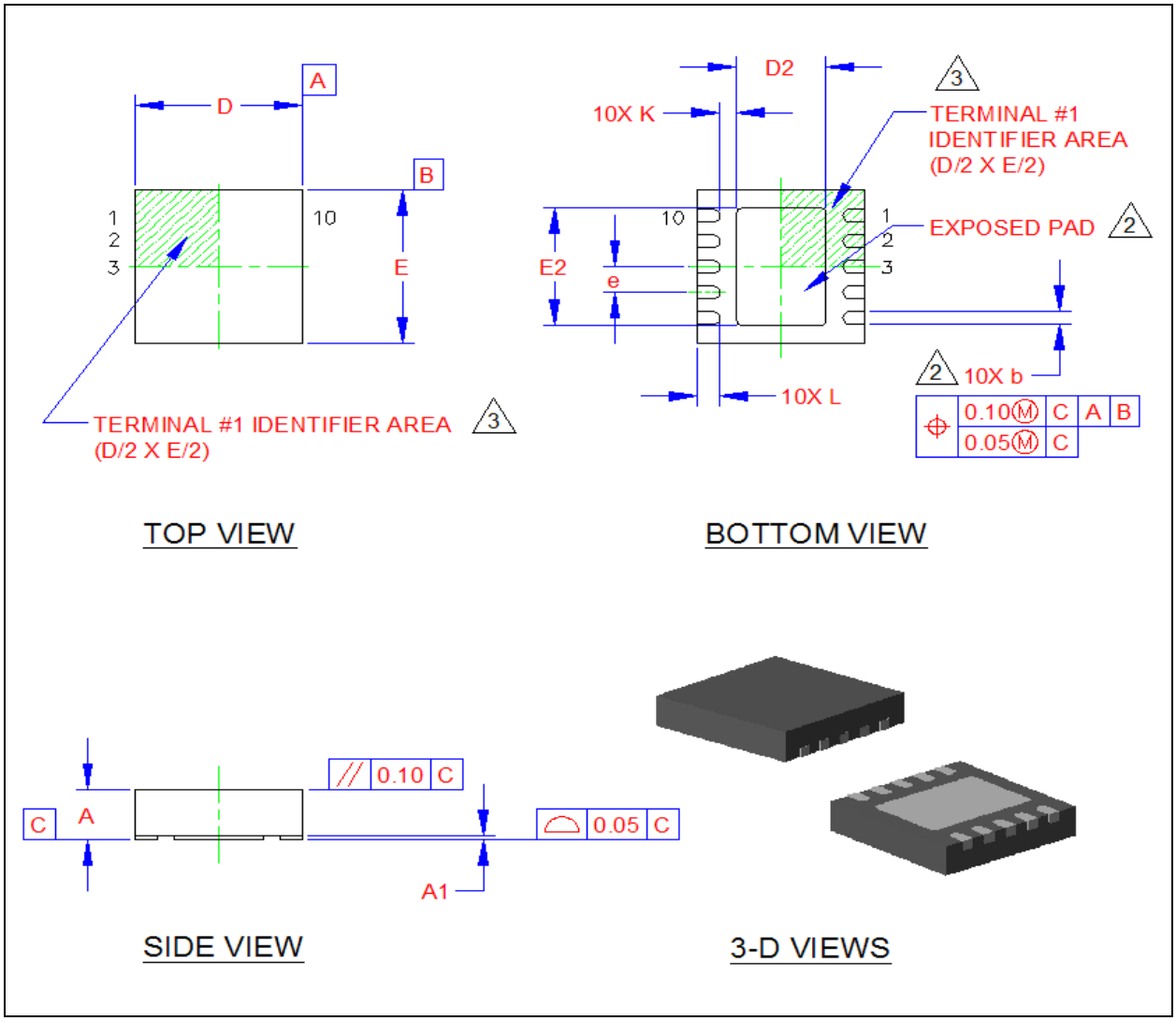
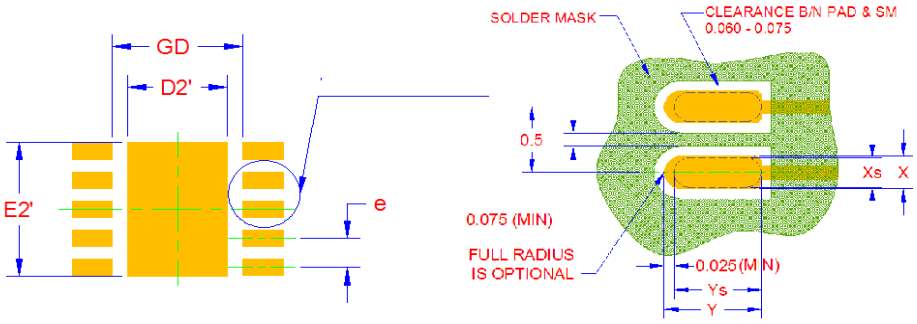


Figure 1 10-Pin DFN 3mm x 3mm Package Drawings

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

PRODUCT PREVIEW