CAP1005 / CAP1006

5 and 6 Channel Capacitive Touch Sensor

PRODUCT FEATURES

Data Brief

General Description

The CAP1006 and CAP1005 are multiple channel Capacitive Touch sensors. The CAP1006 contains six (6) individual Capacitive Touch sensor inputs while the CAP1005 contains five (5) sensors. Both devices offer programmable sensitivity for use in touch sensor applications. Each sensor automatically recalibrates to compensate for gradual environmental changes.

The CAP1005 / CAP1006 offers multiple power states operating at low quiescent currents.

During the Standby mode of operation, one or more Capacitive Touch Sensors are active.

The Deep Sleep mode of operation is the lowest power state available, drawing 3uA of current. During this mode, no sensors are active. Communications will wake the device.

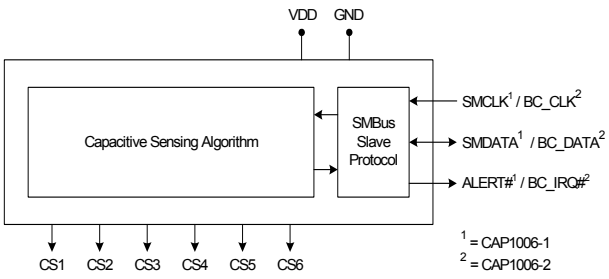
Applications

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

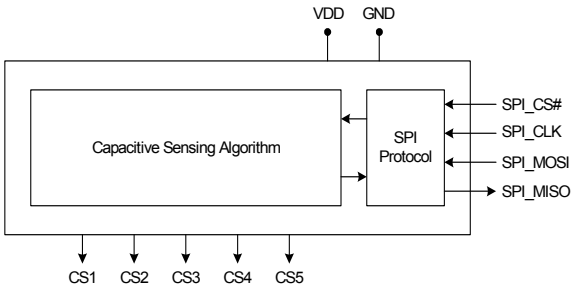
Features

- Six (6) Capacitive Touch Sensor Inputs - CAP1006
- Five (5) Capacitive Touch Sensor Inputs - CAP1005
  - Programmable sensitivity
  - Automatic recalibration
  - Individual thresholds for each button
- Flexible Capacitive Touch Sense algorithm
- Multiple Communication interfaces
  - SMBus / I^{2}C compliant interface (CAP1006-1 only)
  - SMSC BC-Link interface (CAP1006-2 only)
  - SPI communications (CAP1005 only)
- Low Power operation
  - 3uA quiescent current in Deep Sleep
  - Samples one or more channels in Standby
- Available in 10-pin 3mm x 3mm RoHS compliant DFN package

CAP1006 BLOCK DIAGRAM



CAP1005 BLOCK DIAGRAM



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

ORDER NUMBER(S):

ORDERING NUMBER	PACKAGE	FEATURES
CAP1006-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead Free RoHS compliant)	Six Capacitive Touch Sensors, SMBus interface
CAP1006-2-AIA-TR	10-pin DFN 3mm x 3mm (Lead Free RoHS compliant)	Six Capacitive Touch Sensors, BC-Link interface
CAP1005-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead Free RoHS compliant)	Five Capacitve Touch sensors, Full Duplex SPI 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 Outline

CAP1006 and CAP1005 Package Drawings

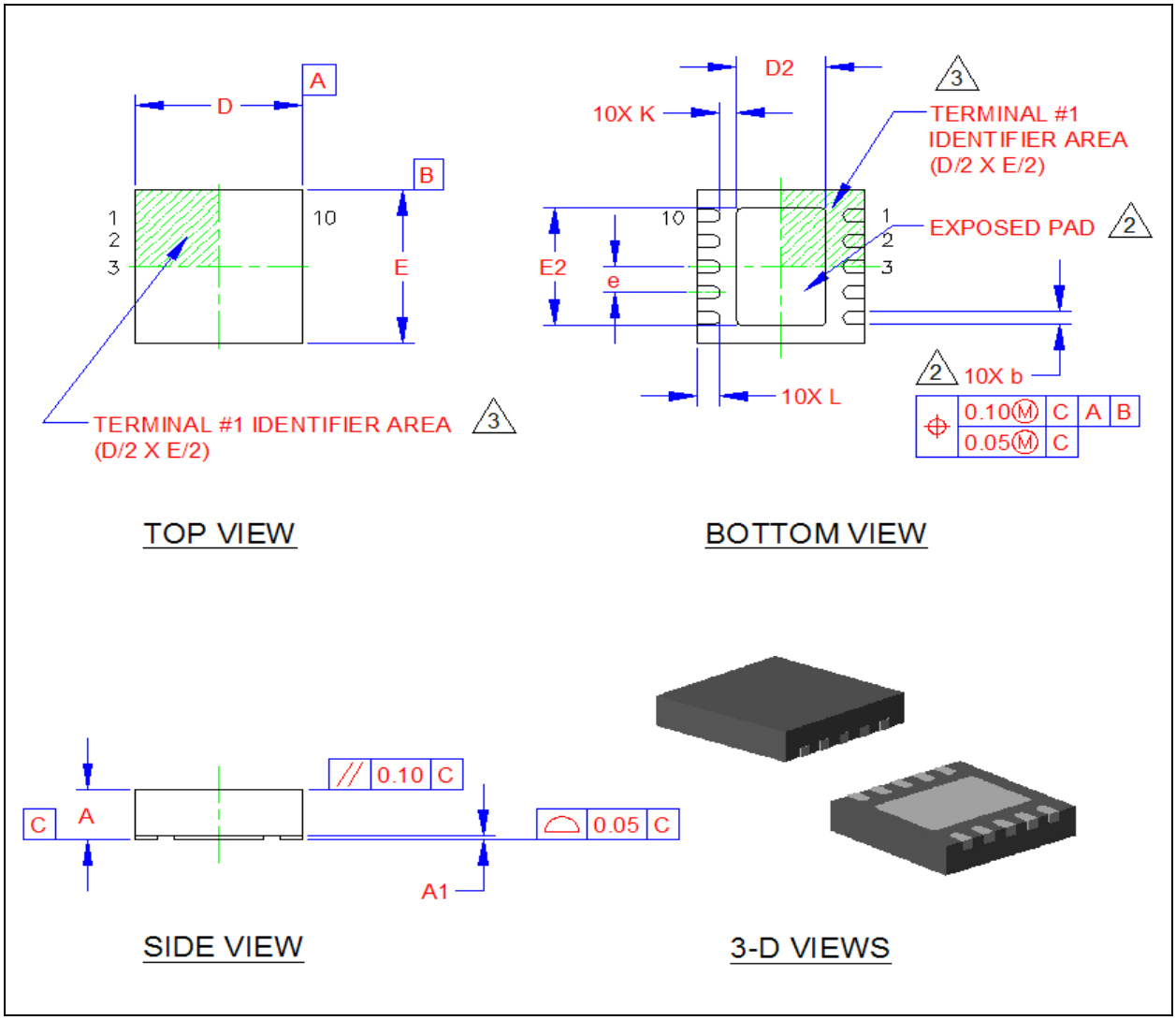
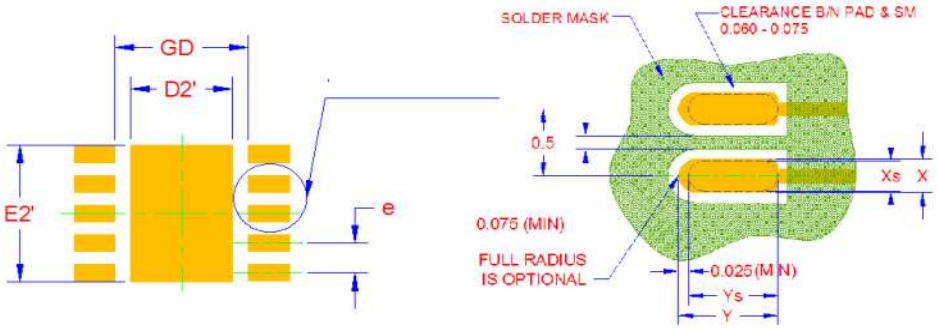


Figure 1 10-Pin DFN 3mm x 3mm Package Drawings

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