

CAP1105 / CAP1106

5 and 6 Channel Capacitive Touch Sensor



PRODUCT FEATURES

Data Brief

General Description

The CAP1106 and CAP1105, which incorporate SMSC's RightTouch[®] 1 technology, are multiple channel Capacitive Touch sensors. The CAP1106 contains six (6) individual capacitive touch sensor inputs while the CAP1105 contains five (5) sensor inputs. Both devices offer programmable sensitivity for use in touch sensor applications. Each sensor input automatically recalibrates to compensate for gradual environmental changes.

The CAP1105 / CAP1106 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 CAP1105 / CAP1106 includes circuitry and support for enhanced sensor proximity detection.

The CAP1105 / CAP1106 offers multiple power states operating at low quiescent currents. In the Standby state of operation, one or more capacitive touch sensor inputs are active.

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

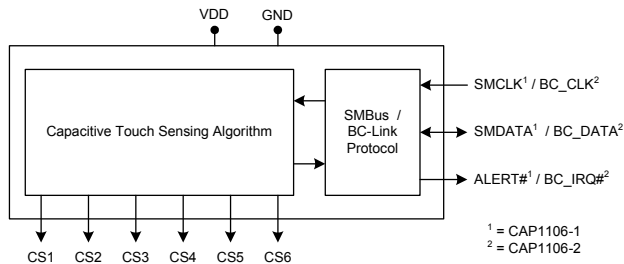
- Desktop and Notebook PCs
- LCD Monitors
- Consumer Electronics
- Appliances

Features

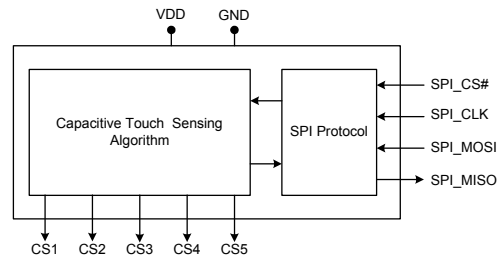
- Six (6) Capacitive Touch Sensor Inputs - CAP1106
- Five (5) Capacitive Touch Sensor Inputs - CAP1105
 - Programmable sensitivity
 - Automatic recalibration
 - Individual thresholds for each button
- Proximity Detection
- Multiple Button Pattern Detection
- Calibrates for Parasitic Capacitance
- Analog Filtering for System Noise Sources
- Press and Hold feature for Volume-like Applications
- Multiple Communication Interfaces
 - SMBus / I²C compliant interface (CAP1106-1 only)
 - SMSC BC-Link interface (CAP1106-2 only)
 - SPI communications (CAP1105 only)
- 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
- Available in 10-pin 3mm x 3mm RoHS compliant DFN package

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CAP1106 BLOCK DIAGRAM



CAP1105 BLOCK DIAGRAM



Order Number(s):

ORDERING NUMBER	PACKAGE	FEATURES
CAP1106-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead-free RoHS compliant)	Six capacitive touch sensor inputs, SMBus interface
CAP1106-2-AIA-TR	10-pin DFN 3mm x 3mm (Lead-free RoHS compliant)	Six capacitive touch sensor inputs, BC-Link interface
CAP1105-1-AIA-TR	10-pin DFN 3mm x 3mm (Lead-free RoHS compliant)	Five capacitive touch sensor inputs, 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.smisc.com/rohs

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Package Information

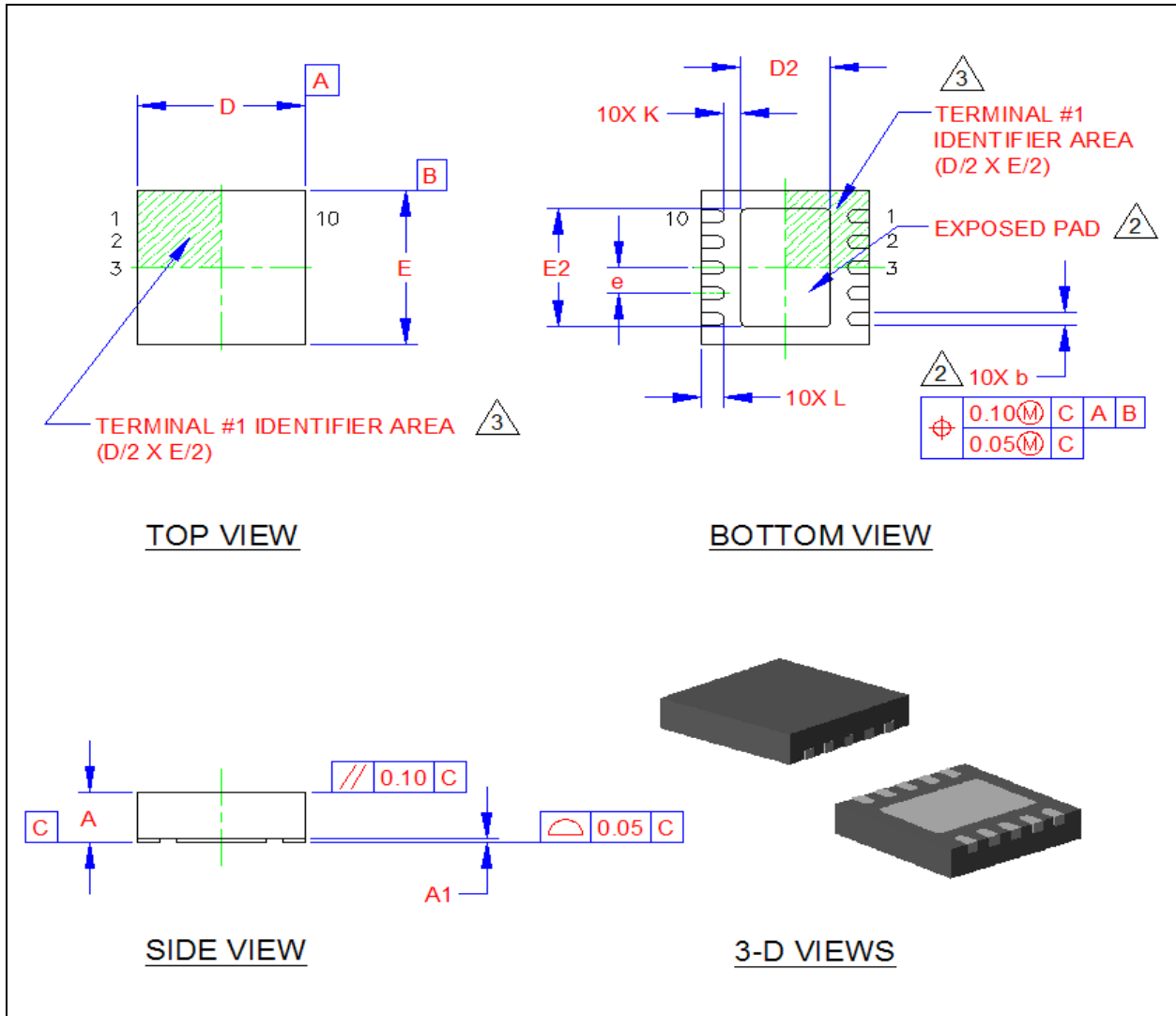


Figure 1 10-Pin DFN 3mm x 3mm Package Drawings

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

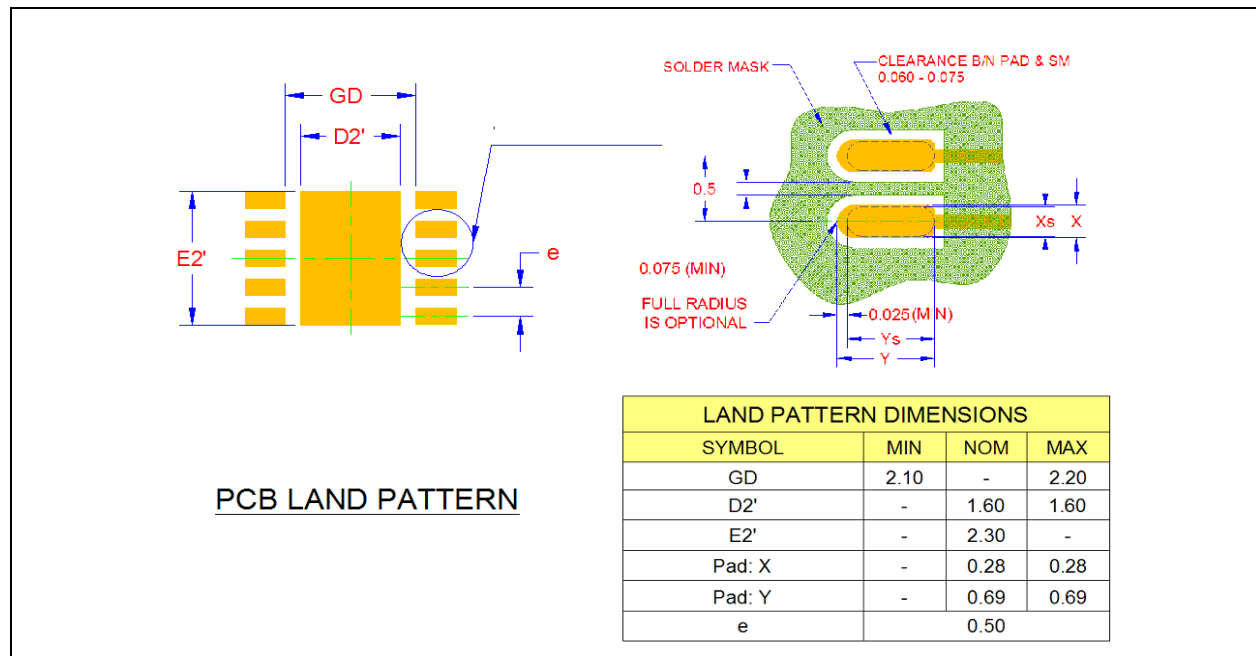


Figure 3 10-Pin DFN 3mm x 3mm PCB Footprint