

# Multiple Channel Capacitive Touch Sensor and LED Driver

## PRODUCT FEATURES

Data Brief

### General Description

The CAP1114, which incorporates SMSC's RightTouch™<sup>1</sup> technology, is a multiple channel Capacitive Touch sensor and LED Driver.

The CAP1114 contains up to fourteen (14) individual Capacitive Touch sensor inputs with programmable sensitivity for use in touch button and slider switch applications. Each sensor also contains automatic recalibration with programmable time delays.

The CAP1114 also includes internal circuitry to compensate for design and parasitic variance in un-touched capacitance on sensors.

The CAP1114 also contains eleven (11) low side LED drivers that offer full-on / off, variable rate blinking, dimness controls, and breathing. Capacitive buttons can be linked to LED outputs.

### Applications

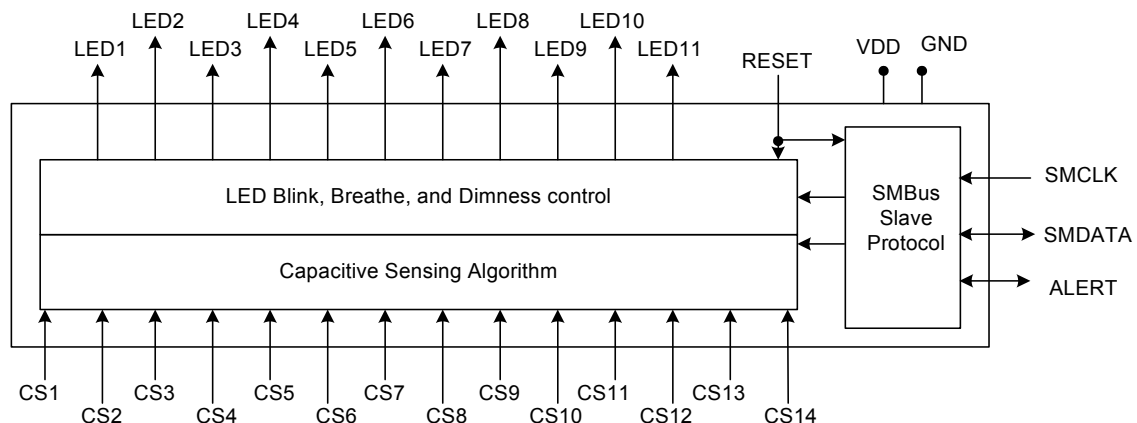
- Consumer Electronics
- Desktop and Notebook PCs
- LCD Monitors

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### Features

- Fourteen (14) capacitive touch sensor inputs
  - Compensates for variable sensor capacitance
  - Programmable sensitivity
  - High SNR allows for easy tuning
  - Automatic recalibration
  - Slider acceleration detection
  - Slider positional detection
  - Proximity detection
- Lid closure detection
- Low power operation
  - 4.5uA quiescent current in Deep Sleep
  - 200uA quiescent current in Sleep while monitoring 1 button
- Alert to signal touch to host processor
- User controlled reset
- Low external component count
- SMBus 2.0 compliant interface to change operating parameters to work in a wide variety of systems
  - Block Read and Write function for quick tasking
- Eleven (11) LED driver outputs
  - Programmable blink, breathe, and dimness controls
  - 8 configurable as GPIOs
  - Buttons can be linked to LED responses
- Development boards and software available
- Available in 32-pin 5mm x 5mm QFN Lead-free RoHS Compliant package

### Block Diagram



**Order Number(s):**

<b>ORDERING NUMBER</b>	<b>PACKAGE</b>	<b>FEATURES</b>
CAP1114-1-EZK-TR	32-pin QFN 5mm x 5mm (Lead Free RoHS compliant)	Fourteen Capacitive Touch Sensors. Eleven LED drivers. SMBus communications.

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



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# Package Information

## Package Drawings

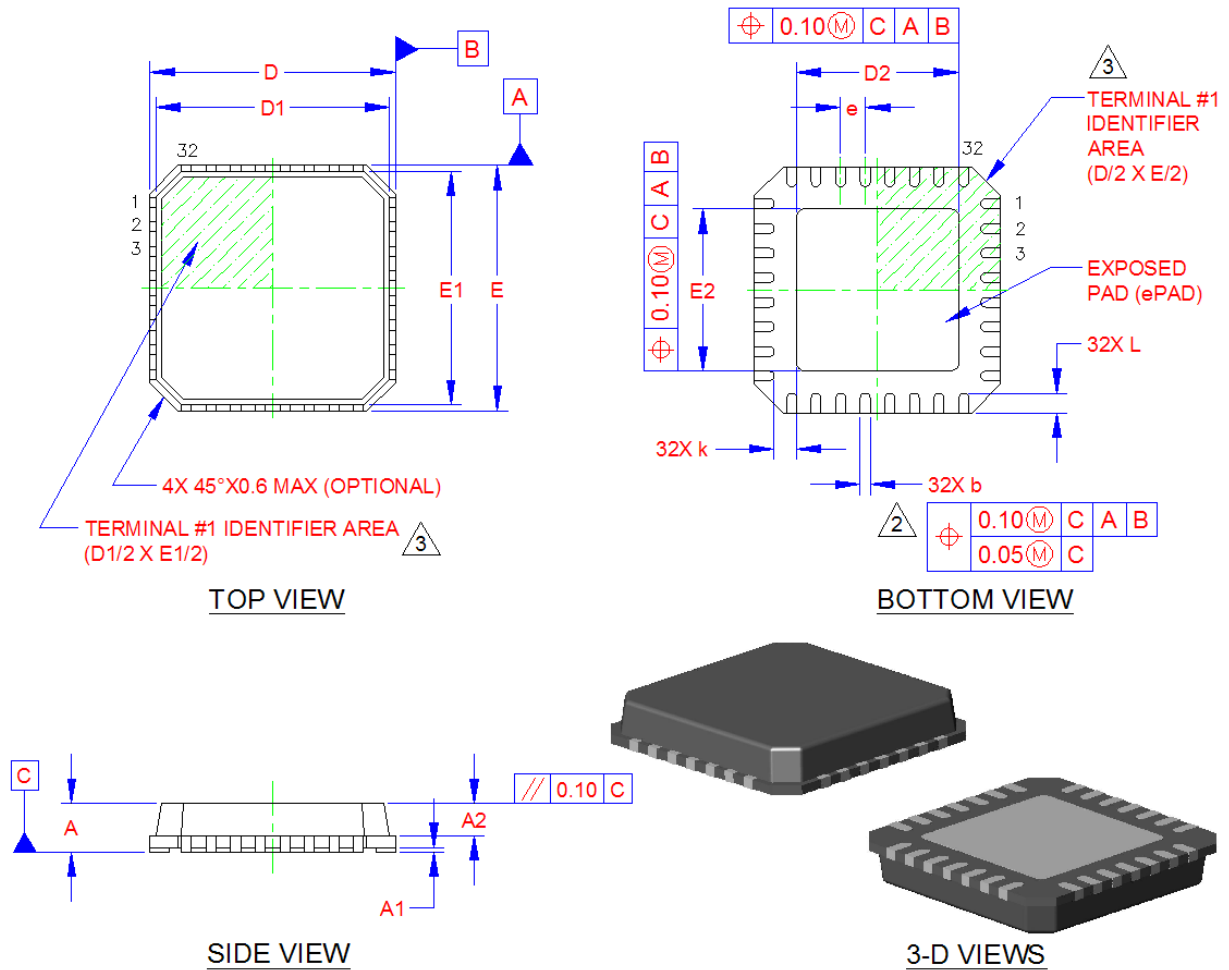


Figure 1 Package Diagram - 32-Pin QFN

COMMON DIMENSIONS					
SYMBOL	MIN	NOM	MAX	NOTE	REMARK
A	0.70	0.85	1.00	-	OVERALL PACKAGE HEIGHT
A1	0	0.02	0.05	-	STANDOFF
A2	-	-	0.90	-	MOLD CAP THICKNESS
D/E	4.90	5.00	5.10	-	X/Y BODY SIZE
D1/E1	4.55	4.75	4.95	-	X/Y MOLD CAP SIZE
D2/E2	3.10	3.30	3.40	-	X/Y EXPOSED PAD SIZE
L	0.30	0.40	0.50	-	TERMINAL LENGTH
b	0.18	0.25	0.30	2	TERMINAL WIDTH
k	0.35	-	-	-	TERMINAL TO ePAD CLEARANCE
e	0.50 BSC			-	TERMINAL PITCH

**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. 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 Package Dimensions - 32-Pin QFN**

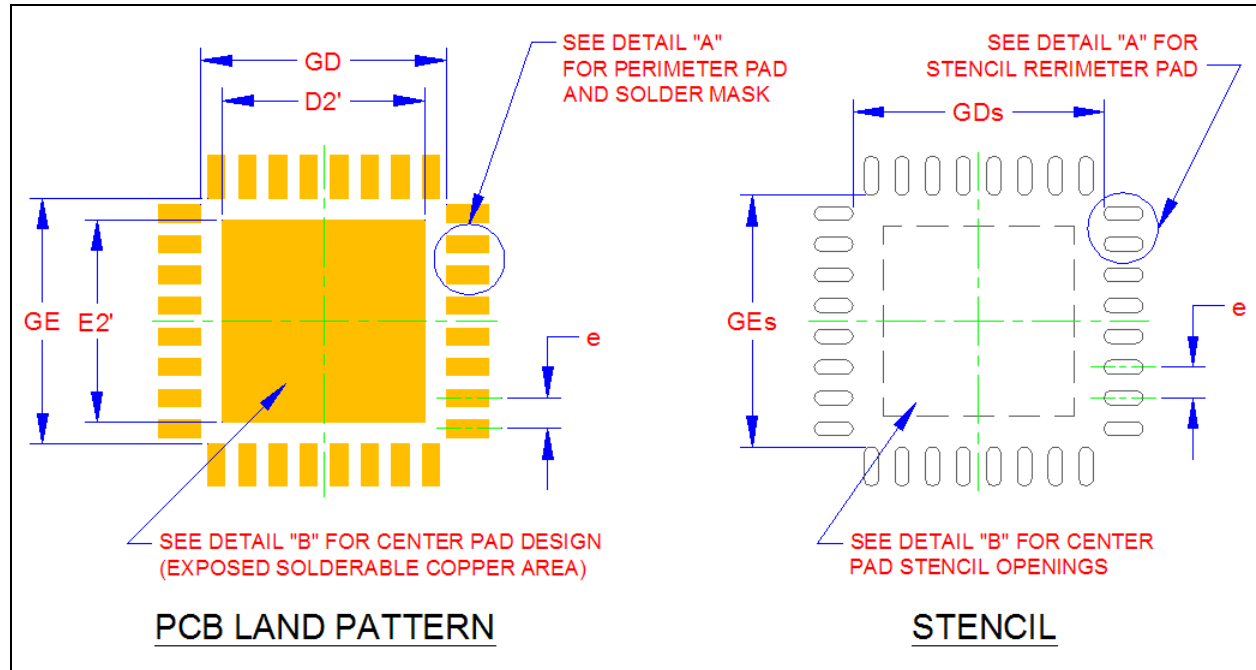


Figure 3 Package PCB Land Pattern and Stencil

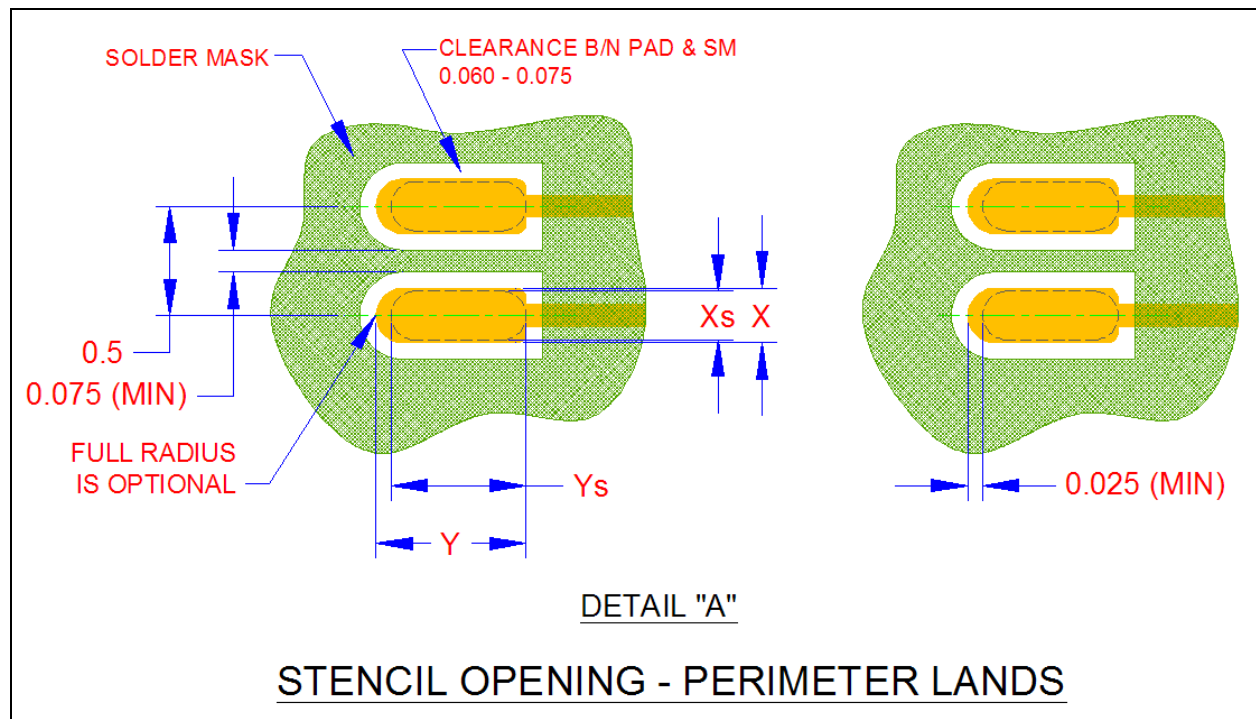


Figure 4 Package Detail A - Stencil Opening and Perimeter Lands

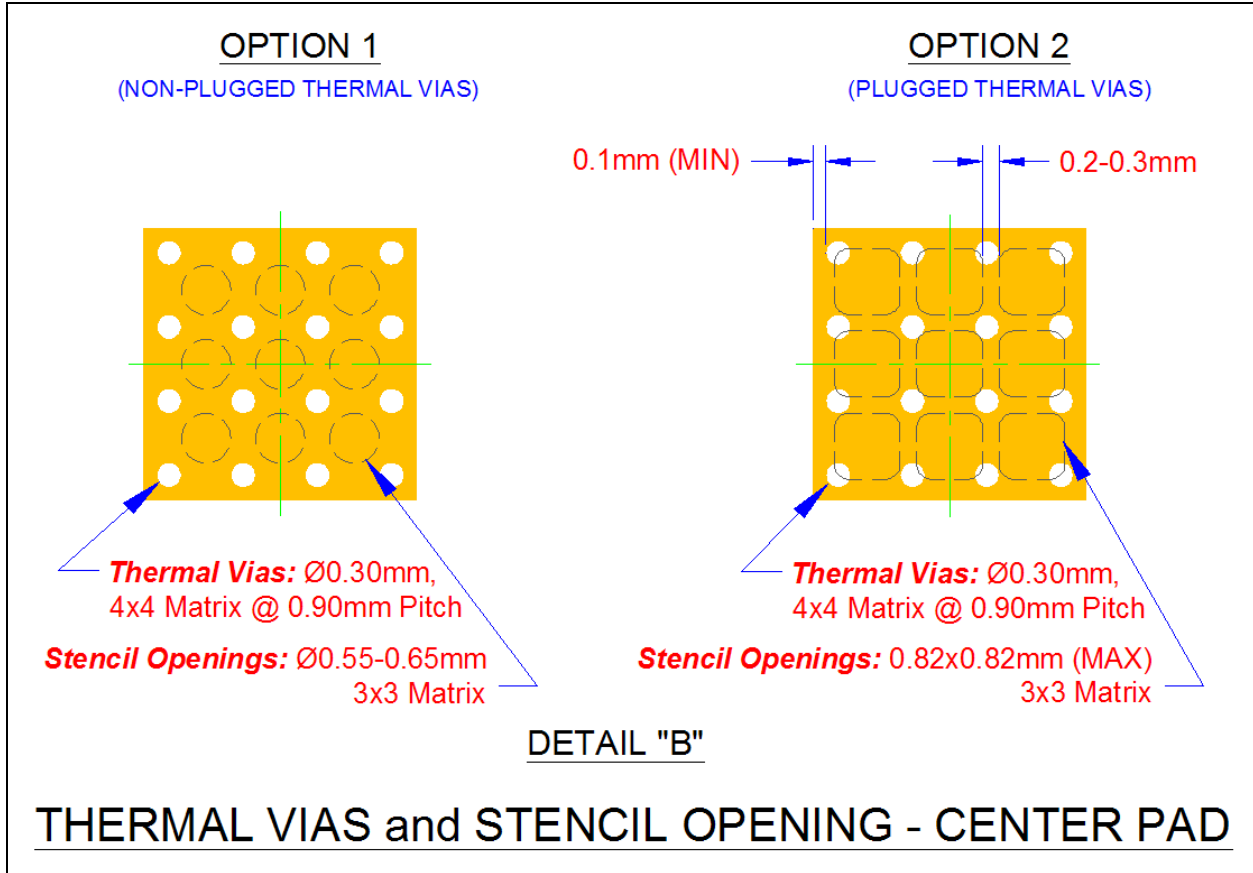


Figure 5 Package Detail B - Thermal Vias and Stencil Opening

LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD/GE	4.00	-	5.10
GDs/GEs	4.05	-	-
D2'/E2'	-	3.30	3.30
Pad: X	-	0.28	0.28
Stencil: Xs	-	0.23	0.25
Pad: Y	-	0.69	0.69
Stencil: Ys	-	0.62	0.64
e	0.50		

Figure 6 Package Land Pattern Dimensions