

CAP1214

Multiple Channel Capacitive Touch Sensor and LED Driver



PRODUCT FEATURES

Data Brief

General Description

The CAP1214 is a multiple channel Capacitive Touch sensor and LED Driver.¹

The CAP1214 contains up to fourteen (14) individual Capacitive Touch sensor inputs with programmable sensitivity for use in touch button and slider switch applications. Each sensor input contains automatic recalibration with programmable time delays.

The CAP1214 includes compensation circuitry that provides uniform touch sensitivity across a wide range of external sensing pad capacitance.

The CAP1214 also contains eleven (11) low side LED drivers that offer full-on / off, variable rate blinking, dimness controls, and breathing. LED outputs can be linked to capacitive sensor channels.

Applications

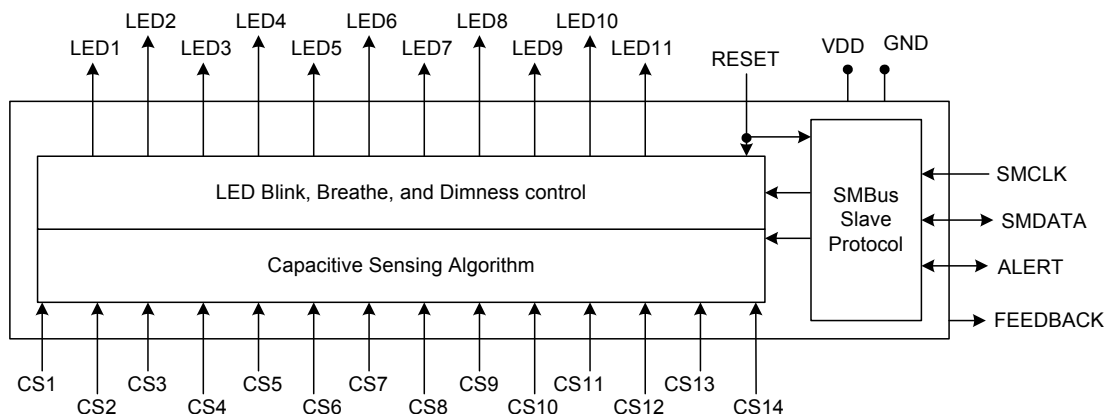
- Consumer Electronics
- Desktop and Notebook PCs
- LCD Monitors

Features

- Fourteen (14) capacitive touch sensor inputs
 - Compensates for variable sensing pads
 - Programmable sensitivity
 - High SNR allows for easy tuning
 - Automatic recalibration
 - Slider acceleration and position detection
 - Proximity detection
- Lid closure detection
- Low power operation
 - 4.5uA quiescent current in Deep Sleep
 - 200uA quiescent current in Sleep, monitoring 1 button
- FEEDBACK pin can drive a piezo transducer when a touch is detected
- 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
 - LEDs can be linked to capacitive sensor channels
- Development boards and software available
- Available in 32-pin 5mm x 5mm QFN Lead-free RoHS Compliant package

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Block Diagram



Order Number(s):

ORDERING NUMBER	PACKAGE	FEATURES
CAP1214-1-EZK-TR	32-Pin QFN 5mm x 5mm (Lead Free RoHS compliant)	Fourteen Capacitive Touch Sensors. Eleven LED drivers. SMBus communications.

**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

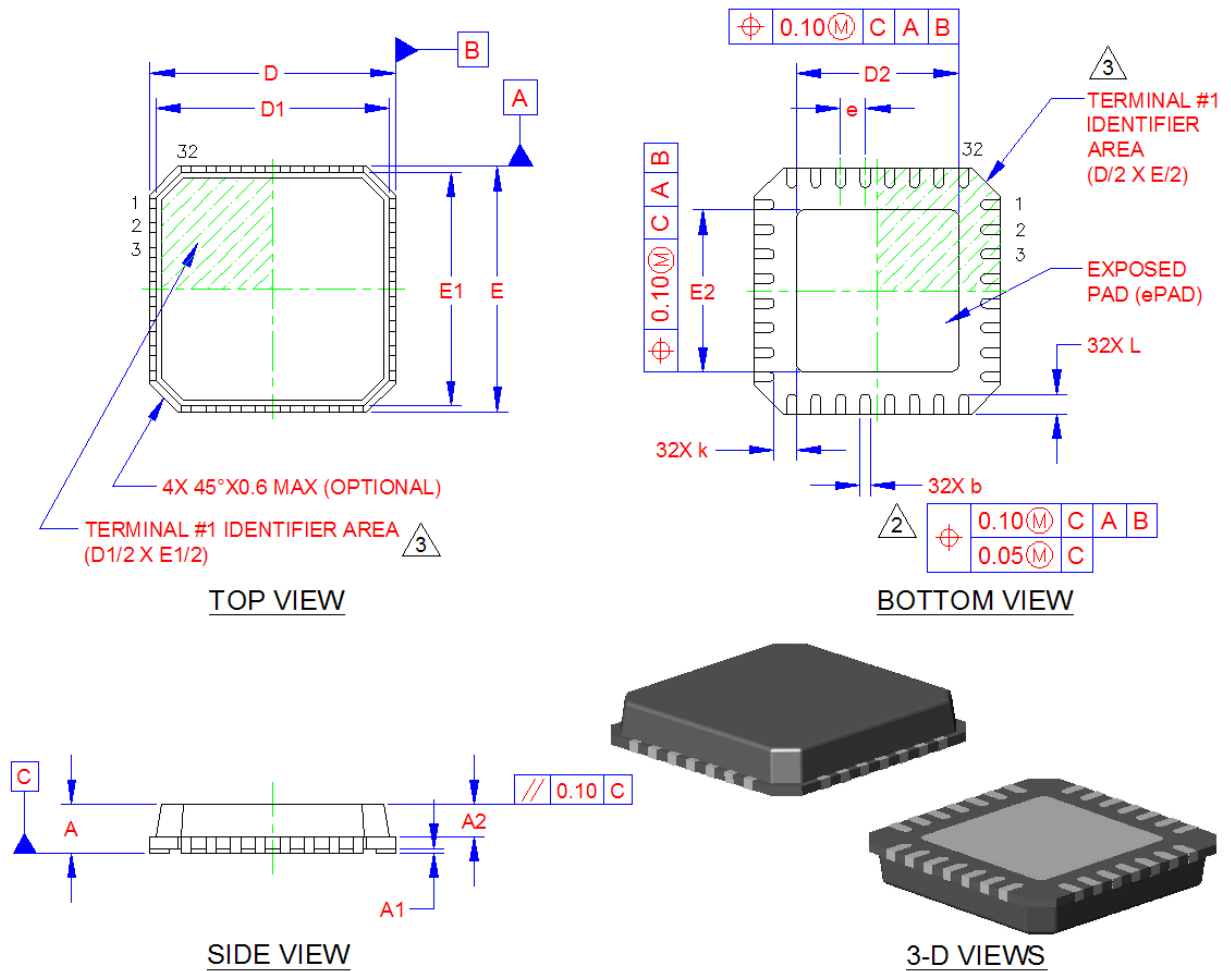


Figure 1 Package Diagram - 32-Pin QFN

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

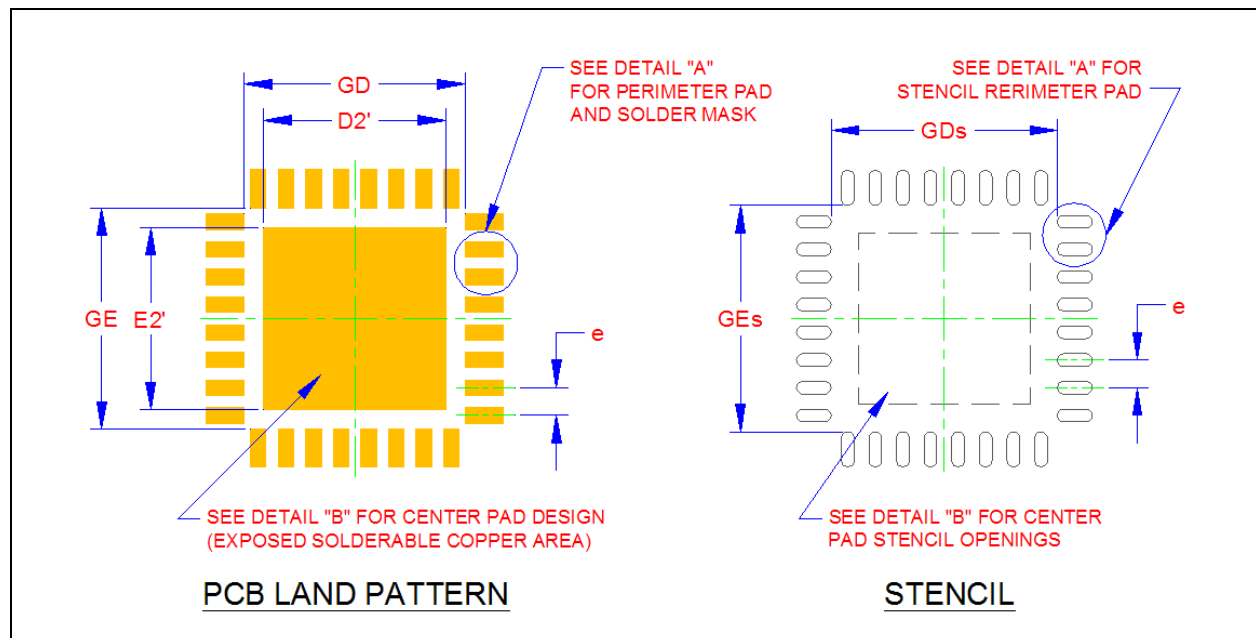


Figure 3 Package PCB Land Pattern and Stencil

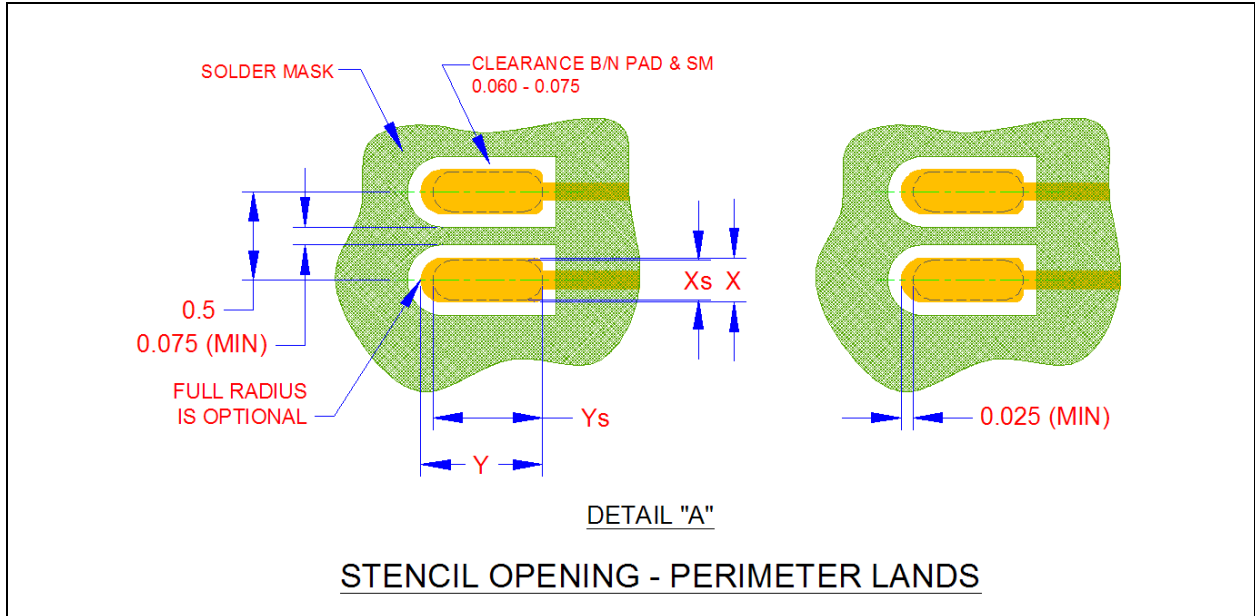


Figure 4 Package Detail A - Stencil Opening and Perimeter Lands

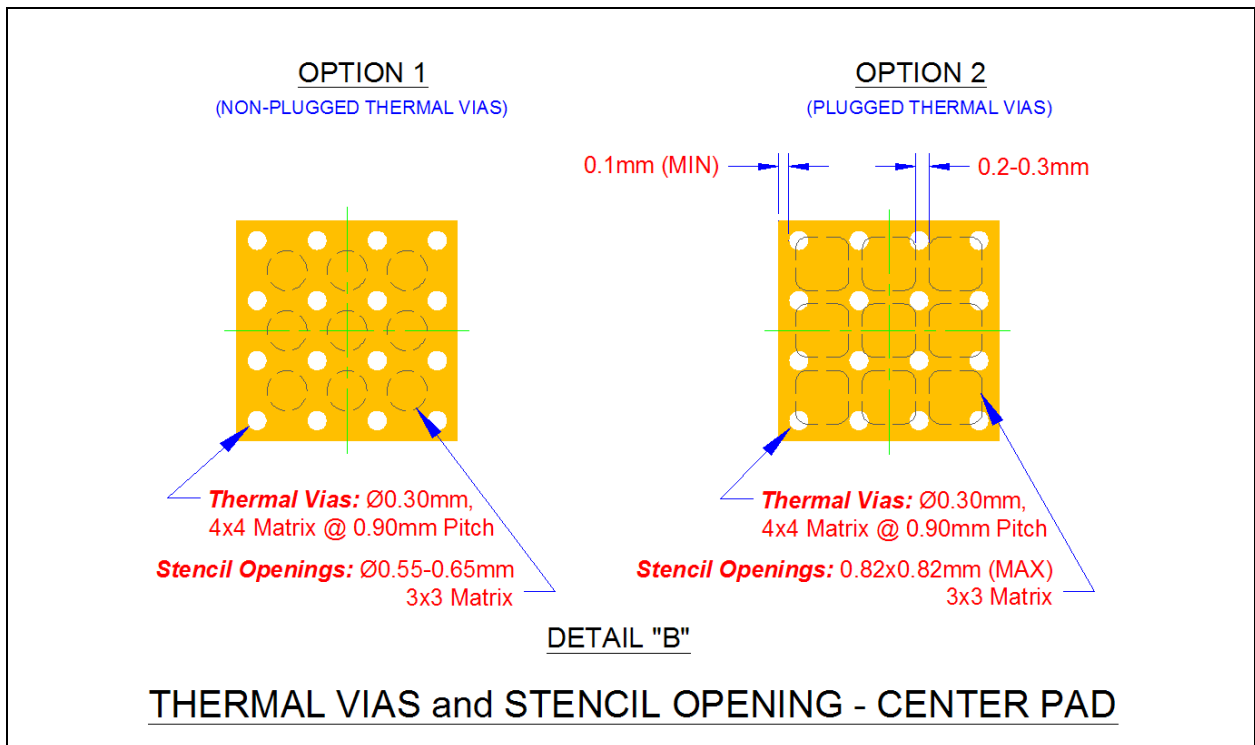


Figure 5 Package Detail B - Thermal Via and Stencil Opening

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