

**Order Number(s):**

ORDERING NUMBER	PACKAGE	FEATURES
CAP1188-1-CP-TR	24-pin QFN 4mm x 4mm (Lead-free RoHS compliant)	Eight capacitive touch sensor inputs, Eight LED drivers, Dedicated Wake, Reset, SMBus / BC-Link / SPI interfaces

**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

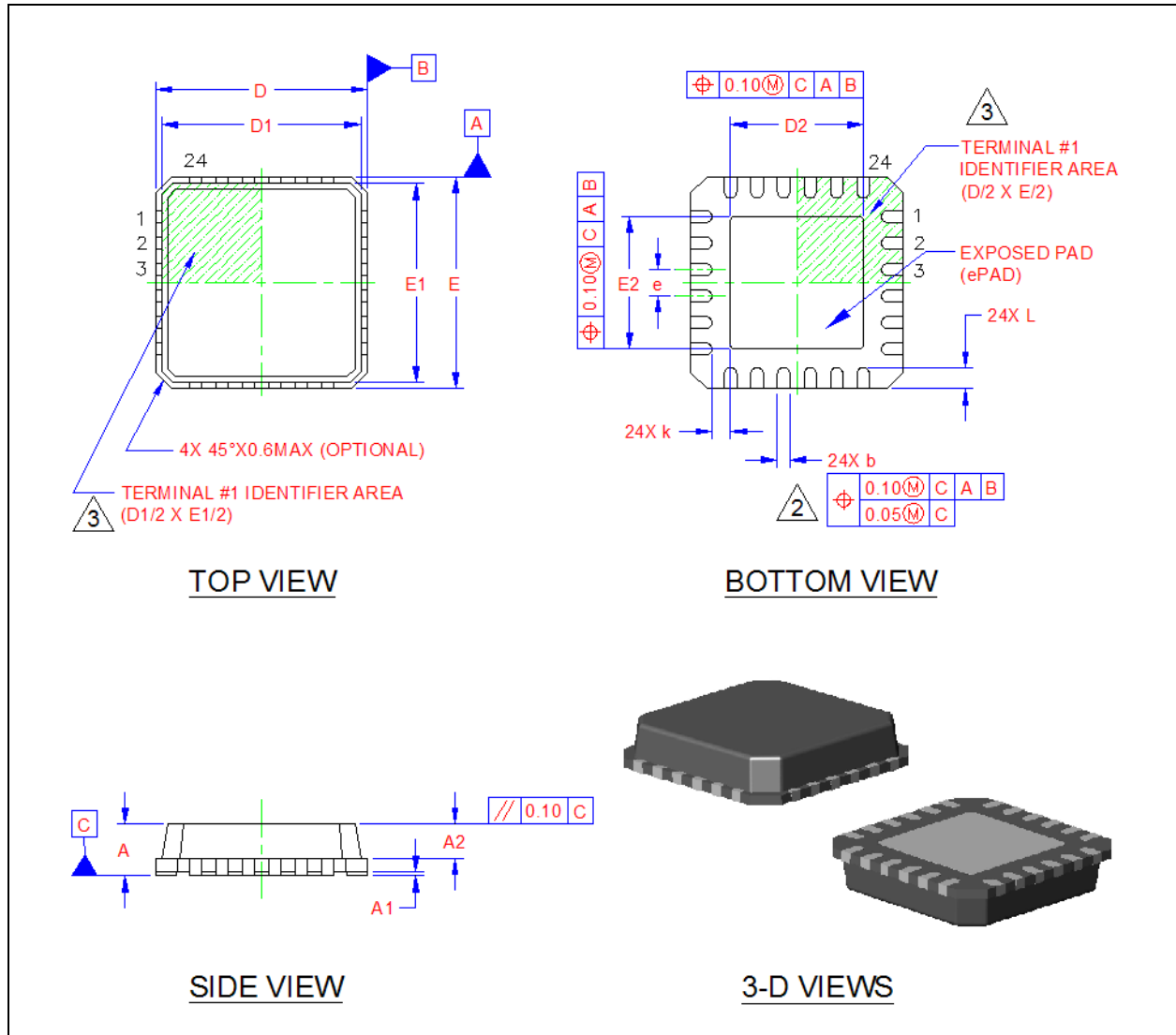
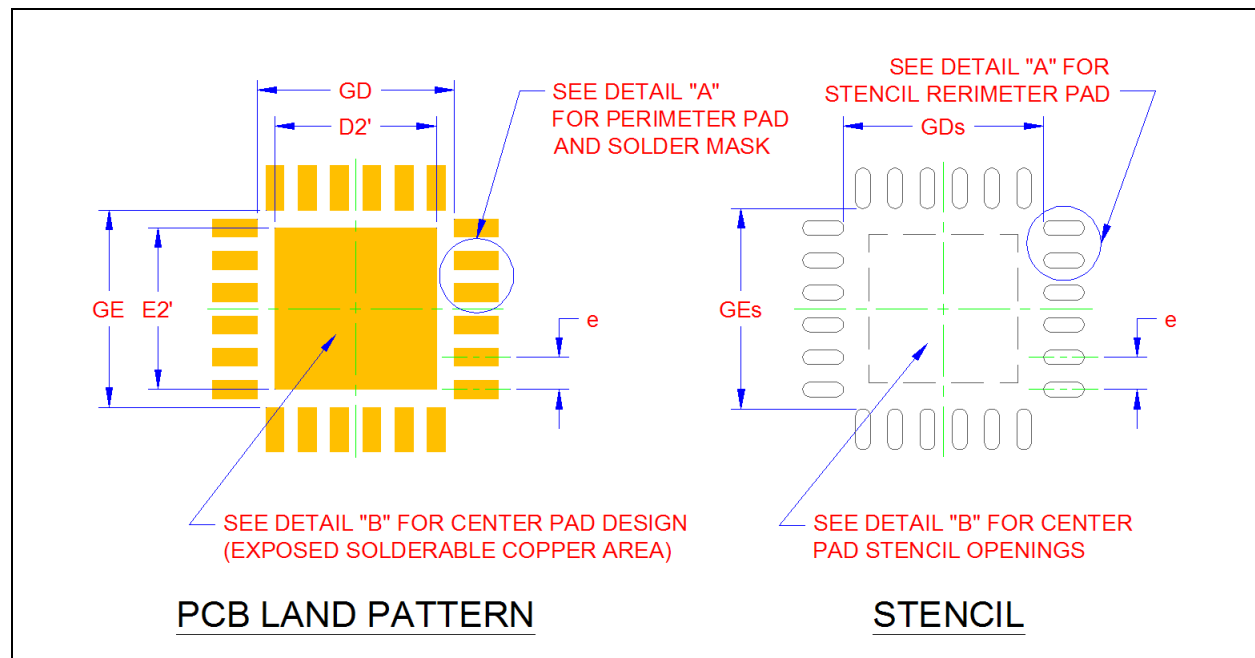


Figure 1 CAP1188 Package Drawing - 24-Pin QFN 4mm x 4mm

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	3.90	4.00	4.10	-	X/Y BODY SIZE
D1/E1	3.55	3.75	3.95	-	X/Y MOLD CAP SIZE
D2/E2	2.40	2.50	2.60	-	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	0.25	-	-	-	PIN 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 CAP1188 Package Dimensions - 24-Pin QFN 4mm x 4mm****Figure 3 CAP1188 PCB Land Pattern and Stencil - 24-Pin QFN 4mm x 4mm**

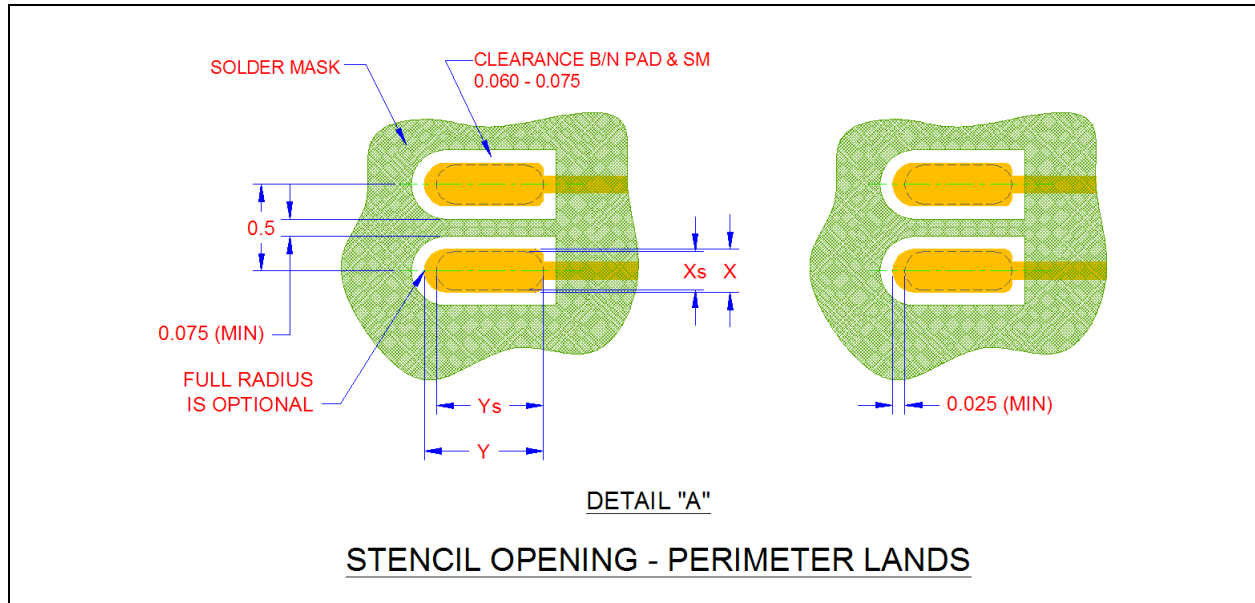


Figure 4 CAP1188 PCB Detail A - 24-Pin QFN 4mm x 4mm

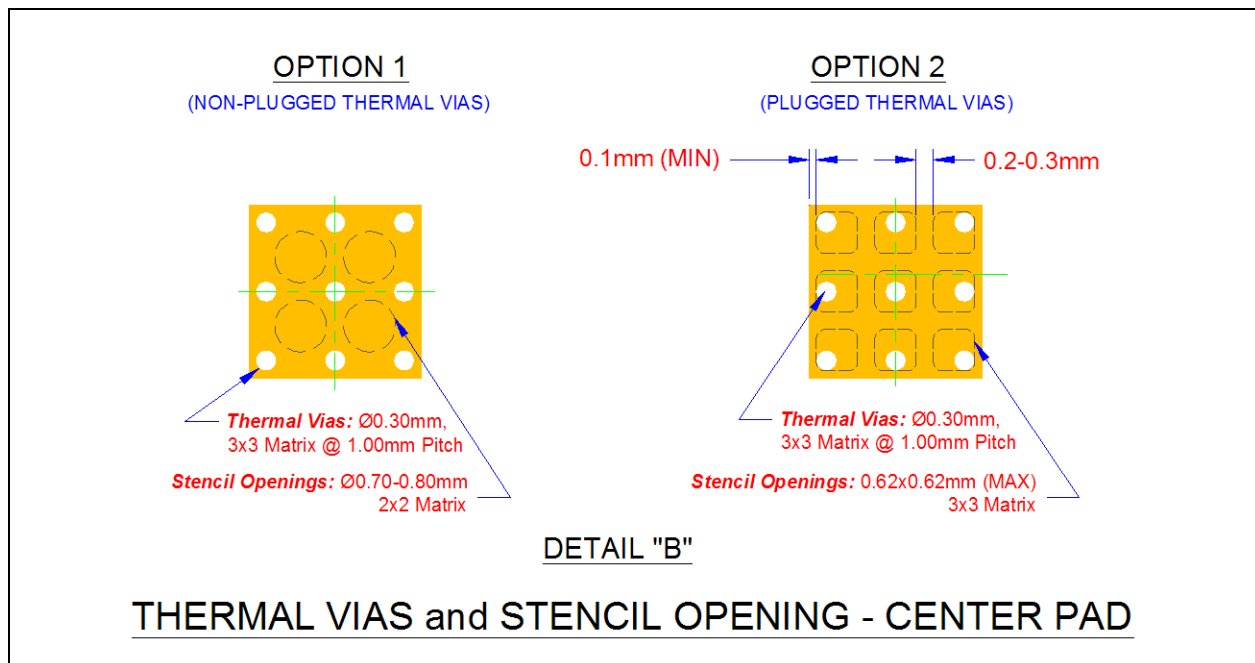


Figure 5 CAP1188 PCB Detail B - 24-Pin QFN 4mm x 4mm

LAND PATTERN DIMENSIONS			
SYMBOL	MIN	NOM	MAX
GD/GE	3.05	-	3.10
GDs/GEs	3.10	-	-
D2'/E2'	-	2.50	2.50
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 CAP1188 Land Dimensions - 24-Pin QFN 4mm x 4mm

## SMT APPLICATION NOTES (QFN)

1. THE USER MAY MODIFY THE PCB LAND PATTERN DIMENSIONS BASED ON THEIR EXPERIENCE AND/OR PROCESS CAPABILITY.
2. THE LAND PATTERN CORRESPONDING TO THE PACKAGE EXPOSED PAD (IN THE CENTER) CAN BE LARGER, AND WITH DIFFERENT SHAPE THAN THE EXPOSED PAD ON THE PACKAGE. HOWEVER, THE SOLDERABLE AREA, AS DEFINED BY THE SOLDER MASK (SMD), OR NON-SOLDER MASK DEFINED (NSMD), SHOULD BE AS SHOWN FOR THE BEST THERMAL & ELECTRICAL PERFORMANCE.
3. MAXIMUM THERMAL AND ELECTRICAL PERFORMANCE IS ACHIEVED WHEN AN ARRAY OF SOLID VIAS IS INCORPORATED IN THE CENTER LAND PATTERN. (See Options 1 & 2)
4. THE VIAS SHOULD BE AT 0.8 to 1.2MM PITCH WITH 0.30 TO 0.40MM DIAMETER, AND 1 OZ COPPER VIA BARREL PLATING.
5. NON SOLDER MASK DEFINED (NSMD) PAD DESIGN IS RECOMMENDED FOR PERIMETER LANDS.
6. A LASER-CUT STAINLESS STEEL STENCIL IS RECOMMENDED WITH ELECTRO POLISHED TRAPEZOIDAL WALLS. THE RECOMMENDED STENCIL THICKNESS IS 0.125 mm FOR PITCHES 0.4 and 0.5 mm.
7. RECOMMENDED STENCIL AREA & ASPECT RATIOS ARE 0.66 & 1.5 (MIN) RESPECTIVELY.
8. RECOMMENDED STENCIL APERTURES ARE AS SHOWN.
9. IT IS RECOMMENDED TO USE "NO-CLEAN", TYPE 3 SOLDER PASTE.
10. THE REFLOW PROFILE DEPENDS ON THE EXACT SOLDER PASTE USED AND THE GIVEN BOARD DETAILS, SUCH AS GEOMETRY, COMPONENTS ETC.

Figure 7 QFN Application Notes