



*National Semiconductor*

Dear Valued Customer,

The current mechanical specifications for the package can be found at the [www.national.com](http://www.national.com) web site or by clicking the following link:

<http://www.national.com/packaging/folders/spa28a.html>

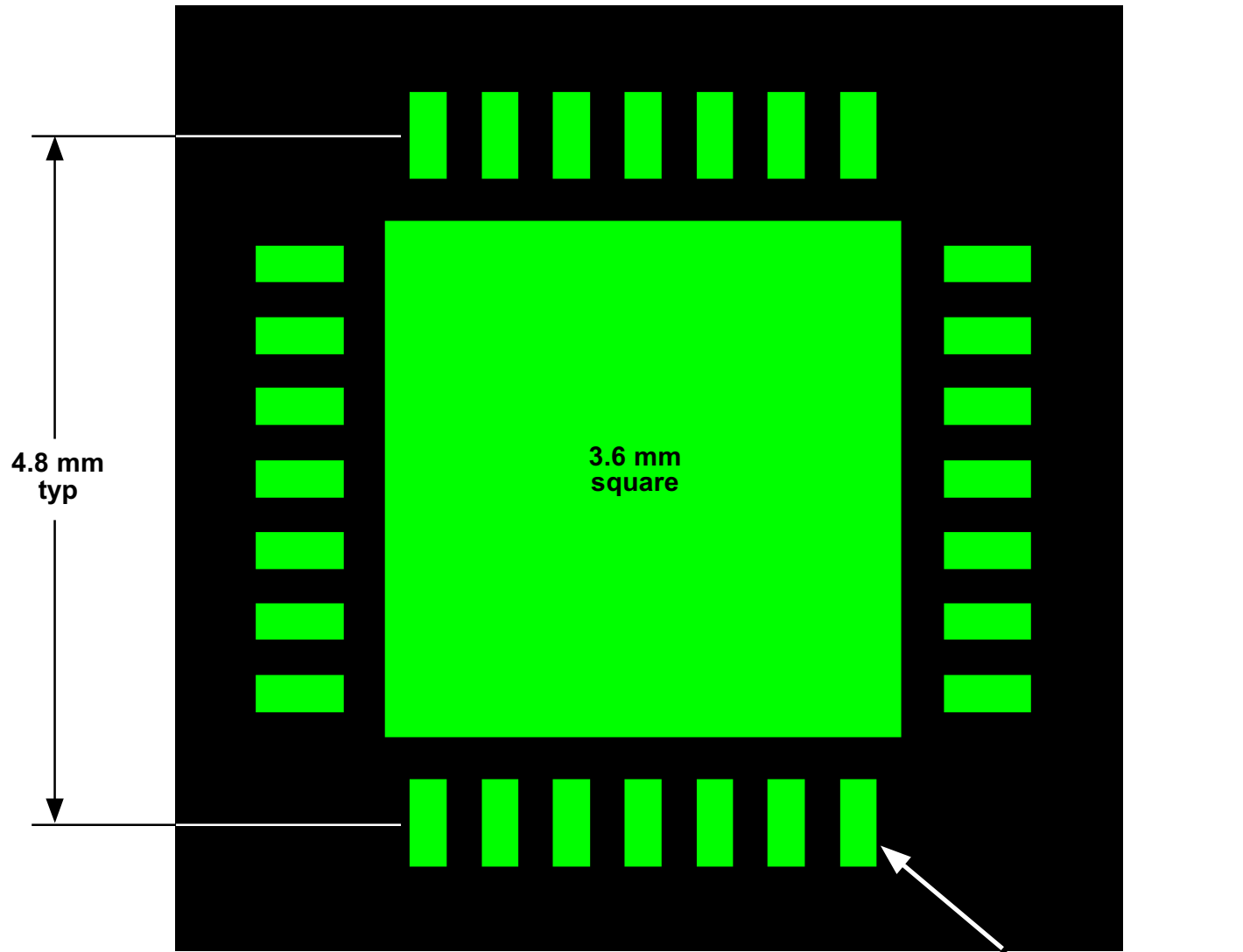
The following pages illustrate the recommended package footprints that apply to this package configuration. They are included in GERBER format for easy incorporation into most PCB layout packages.

For technical support, contact:

<http://www.national.com/support/>

Sincerely yours,

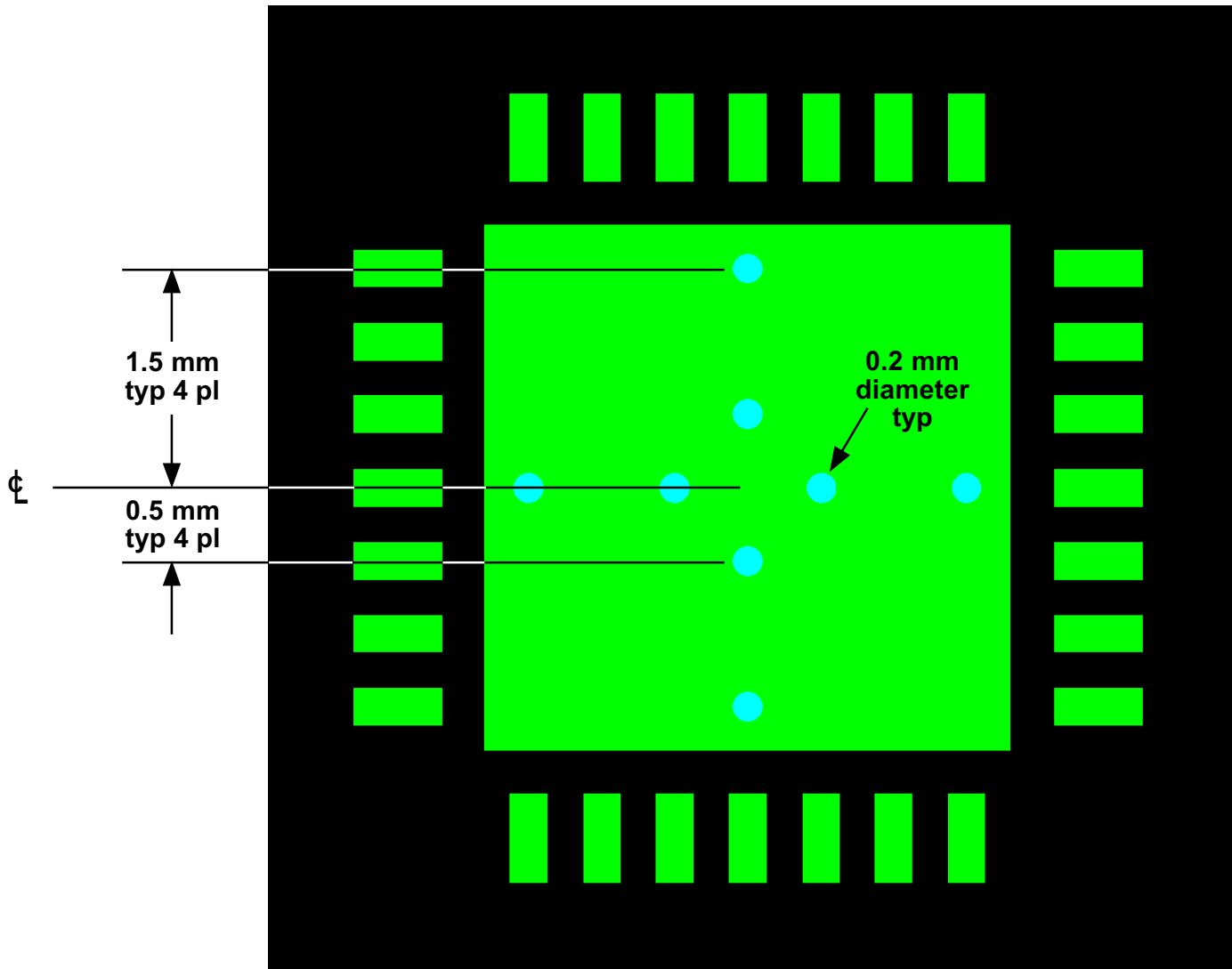
National Semiconductor




# TOP ETCH

0.25 x 0.6 mm  
Typ 28 places


 = Exposed FR4     = Exposed metal

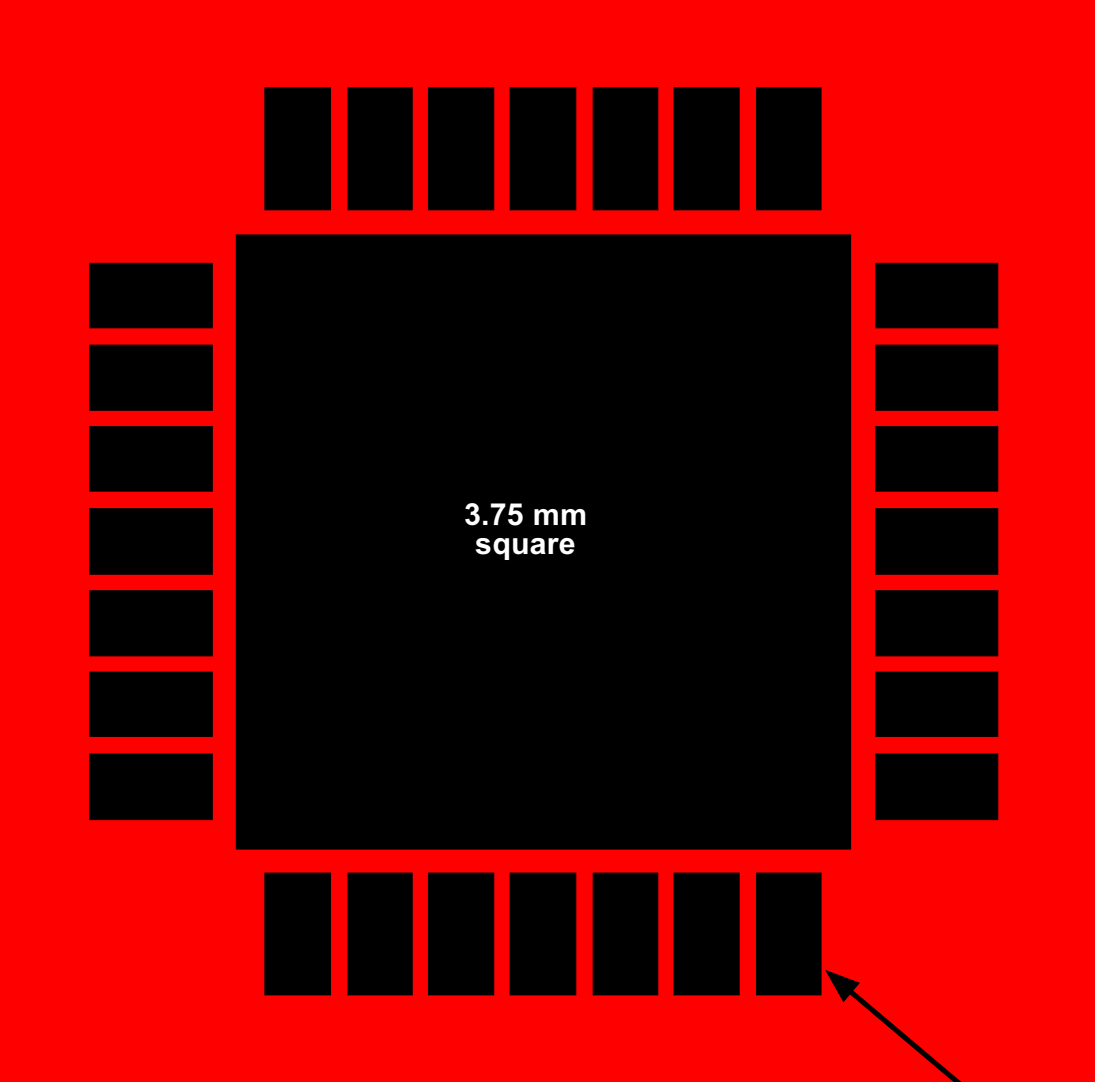


## TOP ETCH with THERMAL VIAS

 = Exposed FR4

 = Exposed metal

 = Thermal Vias

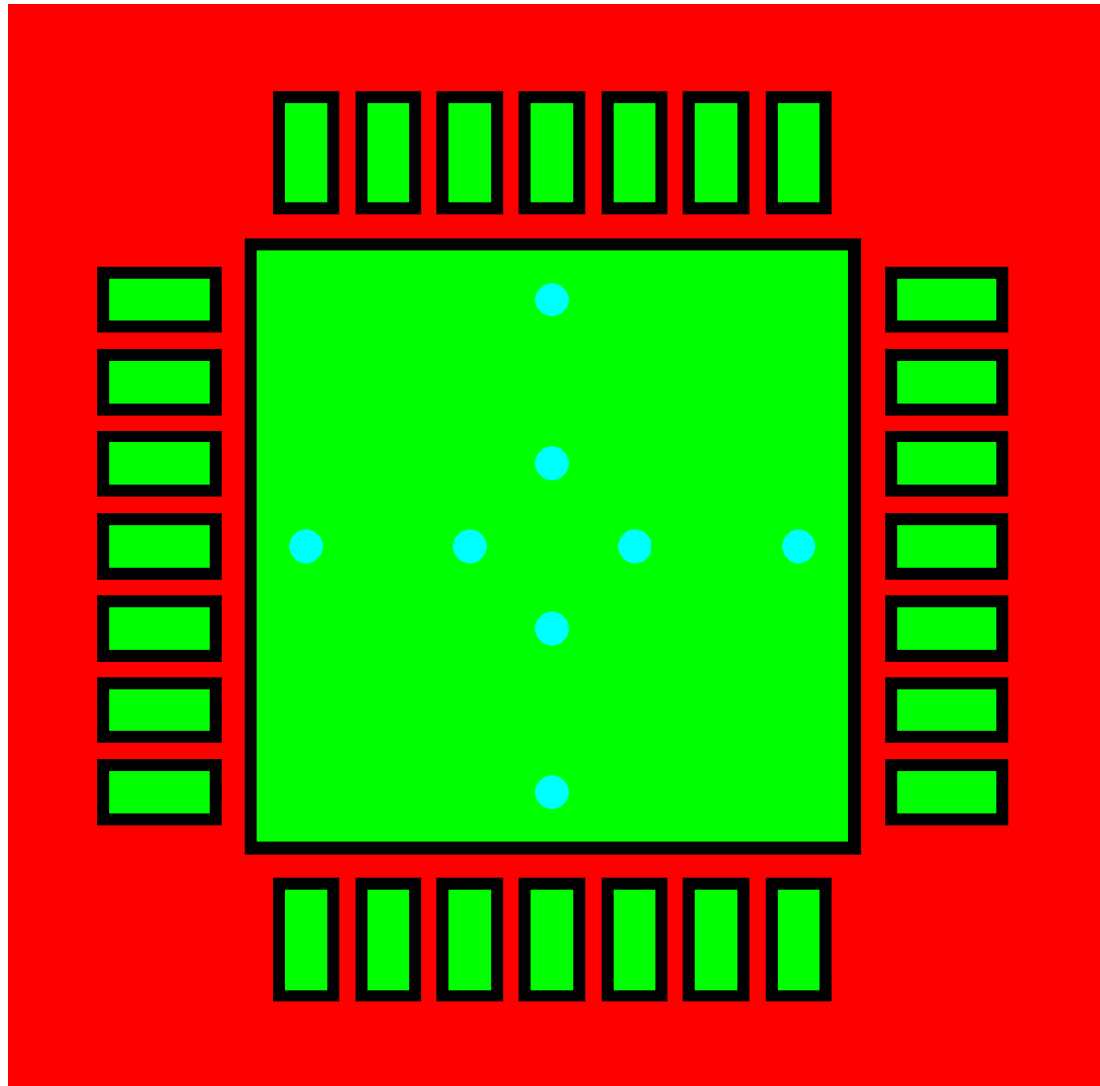


**TOP SOLDERMASK**


0.4 x 0.75 mm  
Typ 28 places

 = Exposed FR4


 = Mask over FR4



## TOP ETCH + SOLDERMASK + VIAS

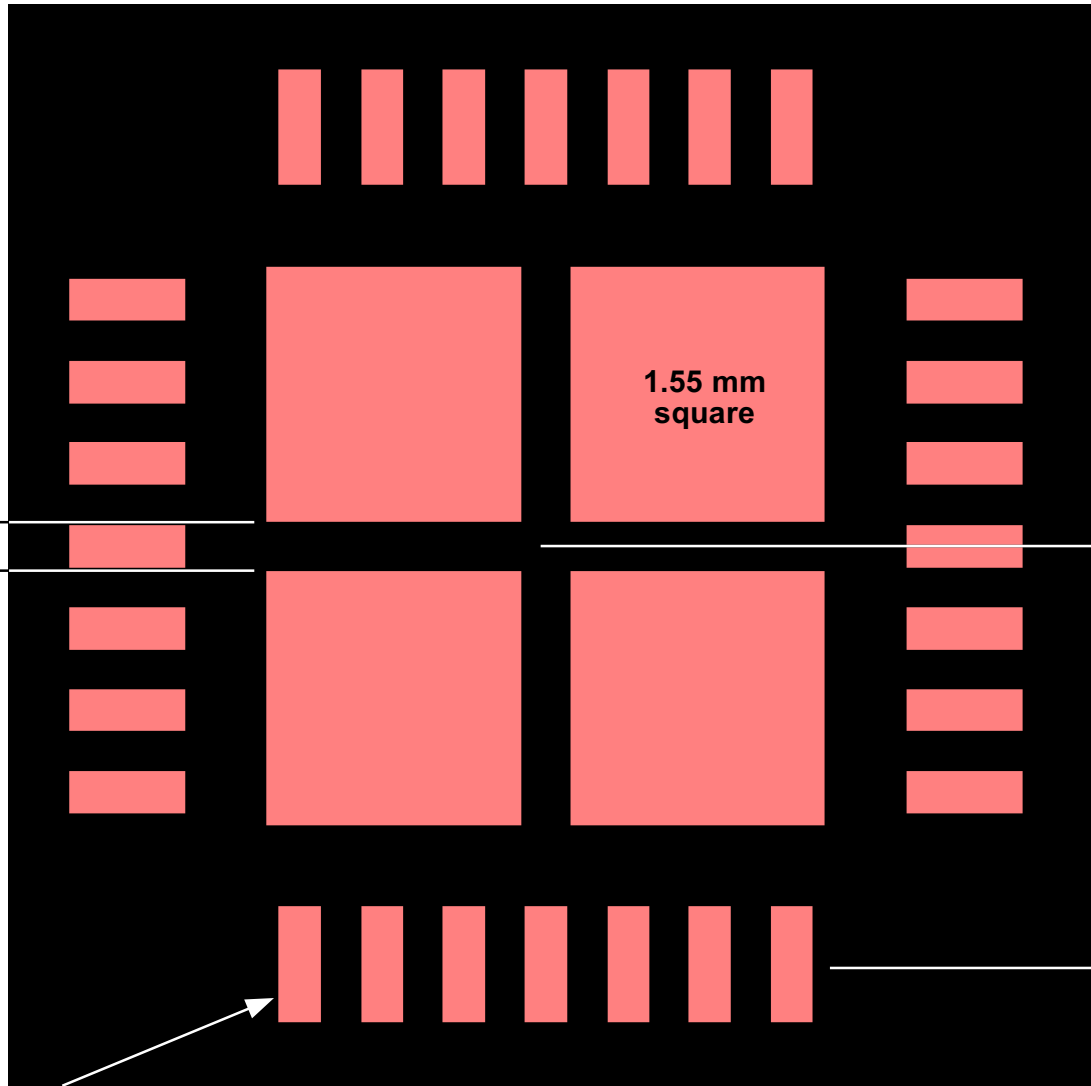
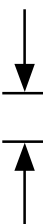
 = Exposed FR4

 = Exposed metal

 = Thermal Vias

 = Mask over FR4

0.3 mm  
spacing  
typ



1.55 mm  
square


⌀

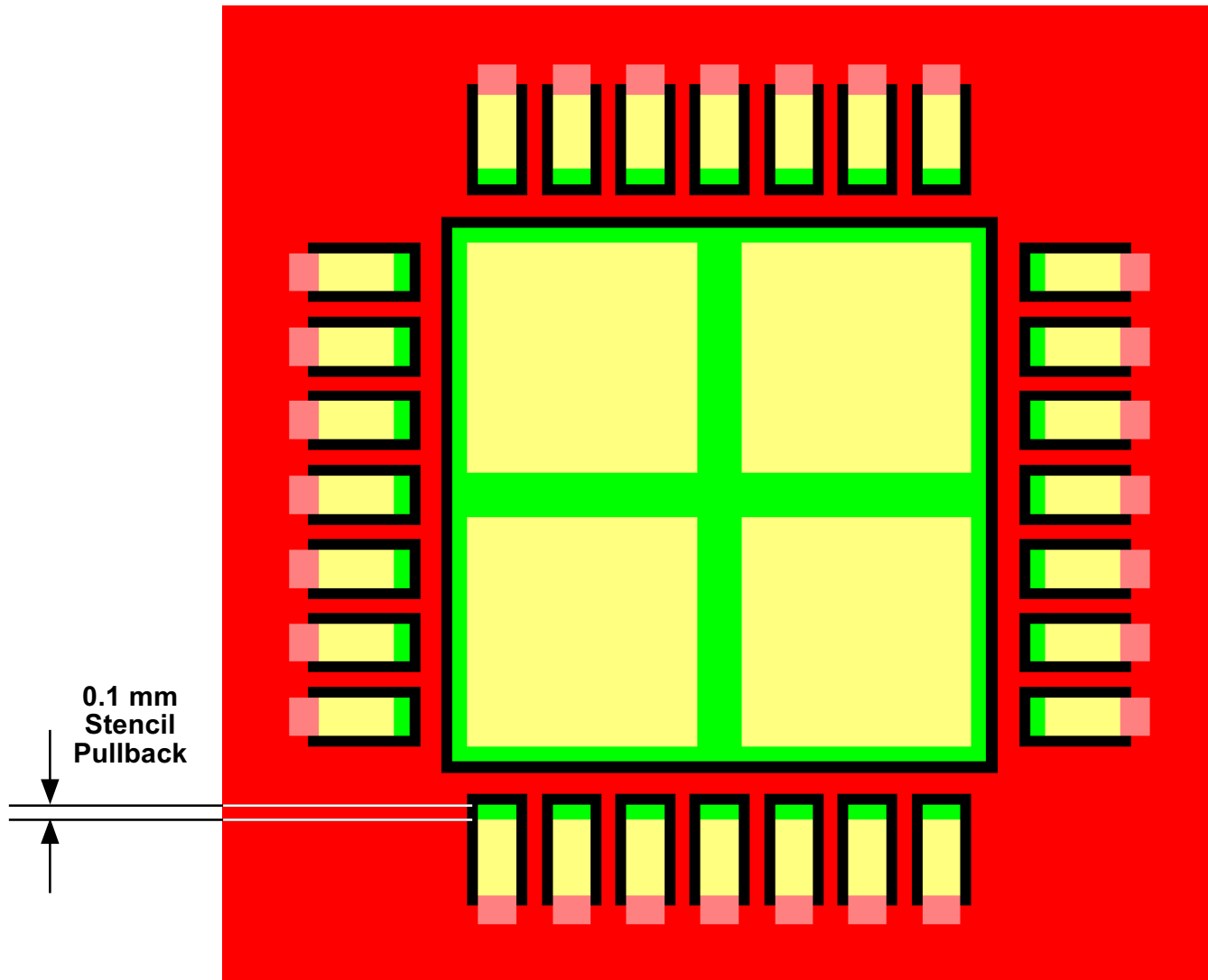
2.55 mm  
typ

⌀

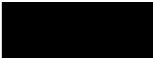



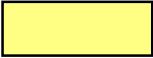
0.25  
x  
0.70 mm  
typ 28 places

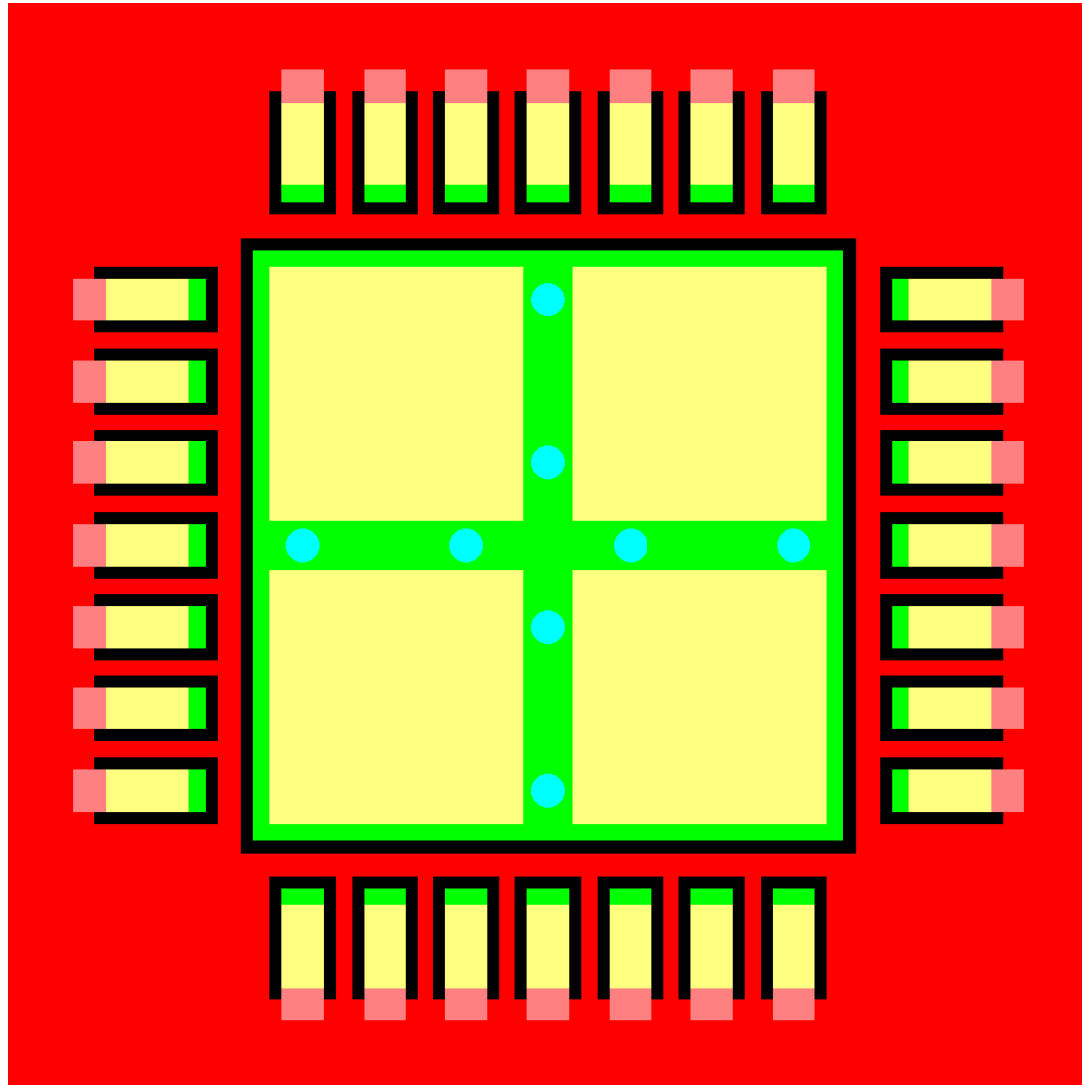
# TOP SOLDERPASTE

 = Paste



## TOP ETCH + SOLDERMASK + SOLDERPASTE

- |   |                 |   |                       |   |                                    |
|---|-----------------|---|-----------------------|---|------------------------------------|
|  | = Exposed FR4   |    | = Exposed metal       |  | = Paste over FR4<br>(0.2mm offset) |
|  | = Mask over FR4 |  | = Paste over<br>Metal |   |                                    |



## TOP ETCH + MASK + SOLDERPASTE with VIAS

