

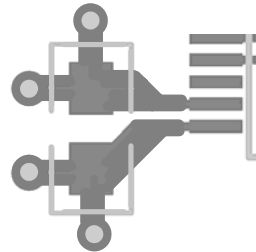


## Bypass Capacitors

- ◆ DO NOT Have Vias Between Bypass Caps And Active Device – Visualize The Current Flow
- ◆ Ensure Bypass Caps Are On Same Layer As Active Component For Best Results.
- ◆ Route Vias Into The Bypass Caps And Then Into The Active Component.
- ◆ The More Vias The Better.
- ◆ The Wider The Traces The Better.
- ◆ The Closer The Better (<0.5cm, <0.2")
- ◆ Length To Width Should Not Exceed 3:1



Poor Bypassing

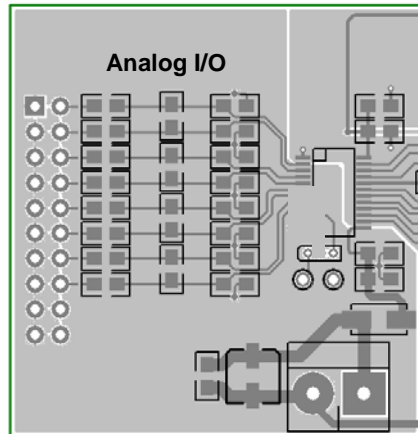


Good Bypassing



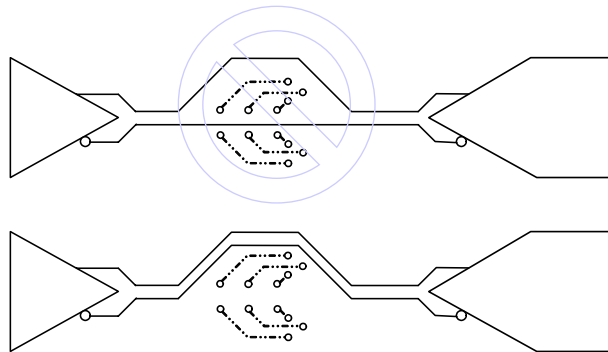
## Analog I/O

- ◆ Keep Analog I/O Symmetrical
- ◆ Avoid Putting Heat Sources Near The Analog I/O
- ◆ Route Digital Signals Away From The Analog Signals





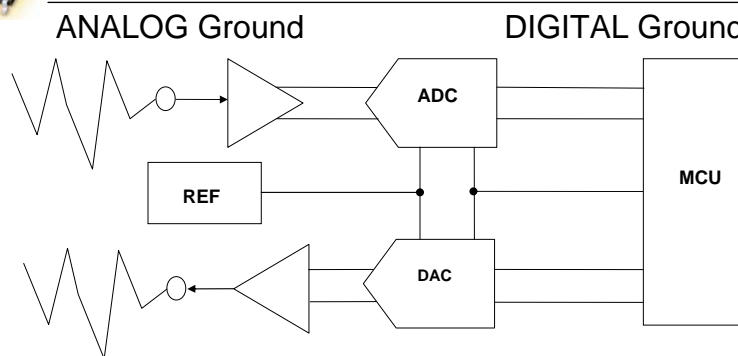
## Routing Differential Traces



- ◆ Keep Differential Traces Close Together. Keeps Noise Injection As A Common-Mode Signal Which Is Attenuated In The Differential System
- ◆ Route Differential Traces Around Obstacles Together, Do Not Separate
- ◆ Try To Keep Trace Lengths The Exact Same Length To Keep Delays Equal



## Paying Attention to GND



- ◆ Analog Ground Should Be Kept Free From Digital “Noise”.
- ◆ Analog Ground Includes Signal Conditioning Circuits, Voltage References And The Analog Power Source For The Data Converter