## Folding Diagram for Aliasing Calculations

Instructions for using the folding diagram:

- Calculate the folding frequency,  $f_{\text{folding}} = f_s/2$ .
- Locate  $f/f_{\text{folding}}$  on the folding diagram, as plotted below. *Note*: For values of  $f/f_{\text{folding}}$  greater than 5.0, the folding diagram can easily be extended, following the obvious pattern.
- Read straight down from the value of  $f/f_{\text{folding}}$  to obtain the value of  $f_a/f_{\text{folding}}$  on the bottom (horizontal) axis.
- Finally, calculate the aliasing frequency,  $f_a =$

$$f_a = \left(\frac{f_a}{f_{\text{folding}}}\right) f_{\text{folding}}$$



Alternative – an equation instead of the folding diagram:

- General equation to determine the perceived frequency of *any* signal frequency *f* when sampled at *any* sampling frequency *f<sub>s</sub>*, whether there is aliasing or not:  $f_{\text{perceived}} = \left| f f_s \cdot \text{NINT} \left( \frac{f}{f_s} \right) \right|$ , where
  - NINT is the "nearest integer" function.
  - In Excel, use ROUND(x,0) to round real number x to the nearest integer.