

[Accelerate](#) / [vDSP](#) / vDSP.FFT

## Class

# vDSP.FFT

A 1D single- and double-precision fast Fourier transform.

iOS 13.0+ | iPadOS 13.0+ | Mac Catalyst | macOS 10.15+ | tvOS 13.0+ | visionOS | watchOS 6.0+

```
class FFT<T> where T : vDSP_FourierTransformable
```

## Topics

### Initializers

`init?(log2n: vDSP_Length, radix: vDSP.Radix, ofType: T.Type)`

Initializes a new fast Fourier transform instance.

### Instance Methods

`func forward(input: DSPSplitComplex, output: inout DSPSplitComplex)`

Computes an out-of-place forward fast Fourier transform.

`func inverse(input: DSPSplitComplex, output: inout DSPSplitComplex)`

Computes an out-of-place inverse fast Fourier transform.

`func transform<T>(input: T, output: inout T, direction: vDSP.FourierTransformDirection)`

Computes an out-of-place fast Fourier transform.

### Variables

```
var FFT_FORWARD: Int
    Forward FFT.

var FFT_INVERSE: Int
    Inverse FFT.

var FFT_RADIX2: Int

var FFT_RADIX3: Int

var FFT_RADIX5: Int

var kFFTDirection_Forward: Int

var kFFTDirection_Inverse: Int

var kFFTRadix2: Int

var kFFTRadix3: Int

var kFFTRadix5: Int
```

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## Relationships

### Inherited By

vDSP.FFT2D

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## See Also

### Objects that Simplify FFTs

```
class FFT2D
    A 2D single- and double-precision fast Fourier transform.

enum FourierTransformDirection
    Fast Fourier transform directions.

enum Radix
```

Fast Fourier transform radices.