

NAME

csinh, csinhf, csinhl – complex hyperbolic sine

LIBRARY

Math library (*libm*, *-lm*)

SYNOPSIS

```
#include <complex.h>
```

```
double complex csinh(double complex z);
```

```
float complex csinhf(float complex z);
```

```
long double complex csinhl(long double complex z);
```

DESCRIPTION

These functions calculate the complex hyperbolic sine of *z*.

The complex hyperbolic sine function is defined as:

$$\operatorname{csinh}(z) = (\exp(z) - \exp(-z)) / 2$$

ATTRIBUTES

For an explanation of the terms used in this section, see [attributes\(7\)](#).

Interface	Attribute	Value
csinh(), csinhf(), csinhl()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

glibc 2.1. C99, POSIX.1-2001.

SEE ALSO

[cabs\(3\)](#), [casinh\(3\)](#), [ccosh\(3\)](#), [ctanh\(3\)](#), [complex\(7\)](#)