

NAME

`csinh`, `csinhf`, `csinhl` – complex hyperbolic sine

SYNOPSIS

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

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

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

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

Link with `-lm`.

DESCRIPTION

These functions calculate the complex hyperbolic sine of z .

The complex hyperbolic sine function is defined as:

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

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

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

Interface	Attribute	Value
<code>csinh()</code> , <code>csinhf()</code> , <code>csinhl()</code>	Thread safety	MT-Safe

CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

SEE ALSO

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

COLOPHON

This page is part of release 5.05 of the Linux *man-pages* project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.