

NAME

casinh, casinhf, casinhl – complex arc sine hyperbolic

LIBRARY

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

SYNOPSIS

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

```
double complex casinh(double complex z);
```

```
float complex casinhf(float complex z);
```

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

DESCRIPTION

These functions calculate the complex arc hyperbolic sine of z . If $y = \text{casinh}(z)$, then $z = \text{csinh}(y)$. The imaginary part of y is chosen in the interval $[-\pi/2, \pi/2]$.

One has:

$$\text{casinh}(z) = \text{clog}(z + \text{csqrt}(z * z + 1))$$

ATTRIBUTES

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

Interface	Attribute	Value
casinh(), casinhf(), casinhl()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

glibc 2.1. C99, POSIX.1-2001.

SEE ALSO

[asinh\(3\)](#), [cabs\(3\)](#), [cimag\(3\)](#), [csinh\(3\)](#), [complex\(7\)](#)