

NAME

`casinh`, `casinhf`, `casinhl` – complex arc sine hyperbolic

SYNOPSIS

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

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

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

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

Link with `-lm`.

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:

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

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>casinh()</code> , <code>casinhf()</code> , <code>casinhl()</code>	Thread safety	MT-Safe

CONFORMING TO

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

SEE ALSO

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

COLOPHON

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