

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

The **casinh()** function calculates 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.

CONFORMING TO

C99.

SEE ALSO

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

COLOPHON

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