

NAME

`clog`, `clogf`, `clogl` – natural logarithm of a complex number

SYNOPSIS

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

```
double complex clog(double complex z);
```

```
float complex clogf(float complex z);
```

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

Link with `-lm`.

DESCRIPTION

These functions calculate the complex natural logarithm of z , with a branch cut along the negative real axis.

The logarithm `clog()` is the inverse function of the exponential `cexp(3)`. Thus, if $y = \text{clog}(z)$, then $z = \text{cexp}(y)$. The imaginary part of y is chosen in the interval $[-\pi, \pi]$.

One has:

$$\text{clog}(z) = \log(\text{cabs}(z)) + I * \text{carg}(z)$$

Note that z close to zero will cause an overflow.

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>clog()</code> , <code>clogf()</code> , <code>clogl()</code>	Thread safety	MT-Safe

CONFORMING TO

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

SEE ALSO

`cabs(3)`, `cexp(3)`, `clog10(3)`, `clog2(3)`, `complex(7)`

COLOPHON

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