NAG Library Routine Document

F06CCF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of ***bold italicised*** terms and other implementation-dependent details.

1 Purpose

F06CCF reconstructs the parameters c (real) and s (complex) of a complex plane rotation from the tangent of that rotation.

2 Specification

```
SUBROUTINE F06CCF(T, C, S)
double precision      C
complex*16            T, S
```

3 Description

F06CCF reconstructs the parameters c (real) and s (complex) of a complex plane rotation, from the value of the tangent t, as returned by F06CAF:

$$c = \frac{1}{\sqrt{1+|t|^2}}, \qquad s = ct,$$

so that c is always real and non-negative.

If $|t| < \sqrt{\epsilon}$, where ϵ is the ***machine precision***, the routine sets $c = 1$ and $s = t$.

4 References

None.

5 Parameters

1: T – ***complex*16*** *Input*

On entry: the value t, the tangent of the rotation.

2: C – ***double precision*** *Output*

On exit: the value c, the cosine of the rotation.

3: S – ***complex*16*** *Output*

On exit: the value s, the sine of the rotation.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.