Octave Filter
Front Page

TITLE OCTAVE_FILTER

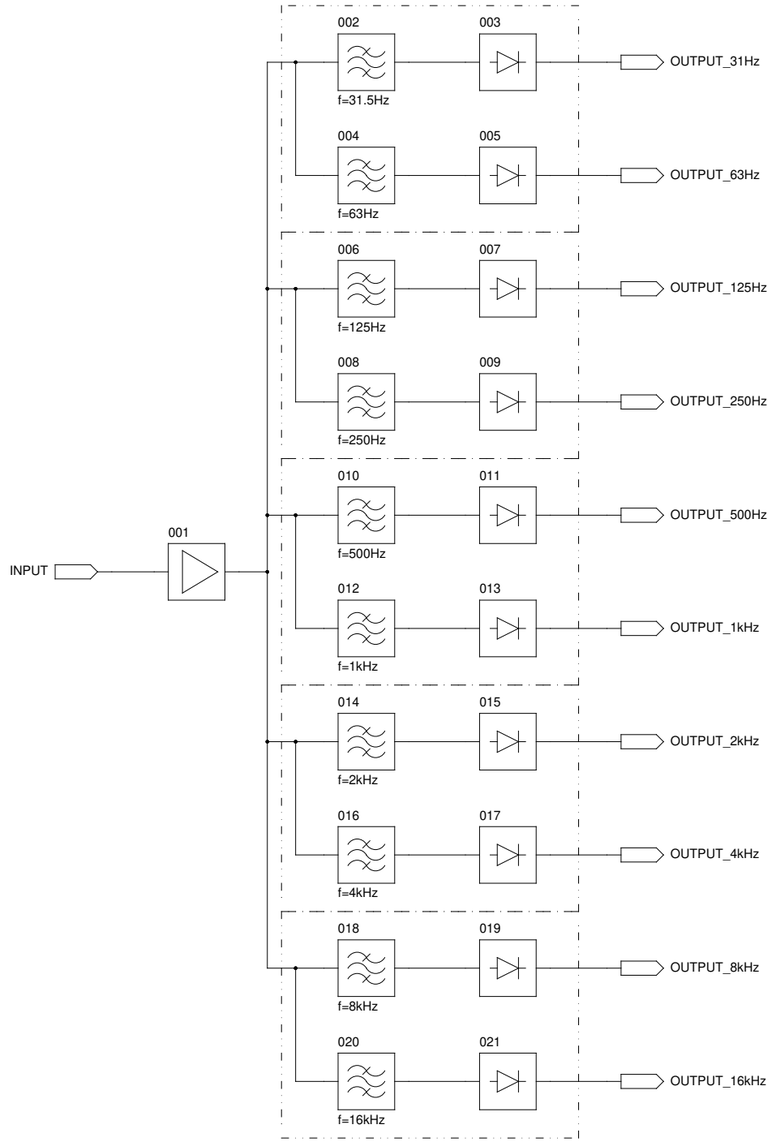
FILE: 26.000.00.00.01.sch

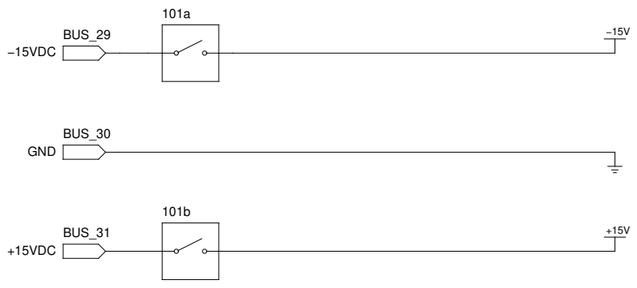
PAGE 01 OF 01

REVISION: 20220422

DRAWN BY: Bert Timmerman

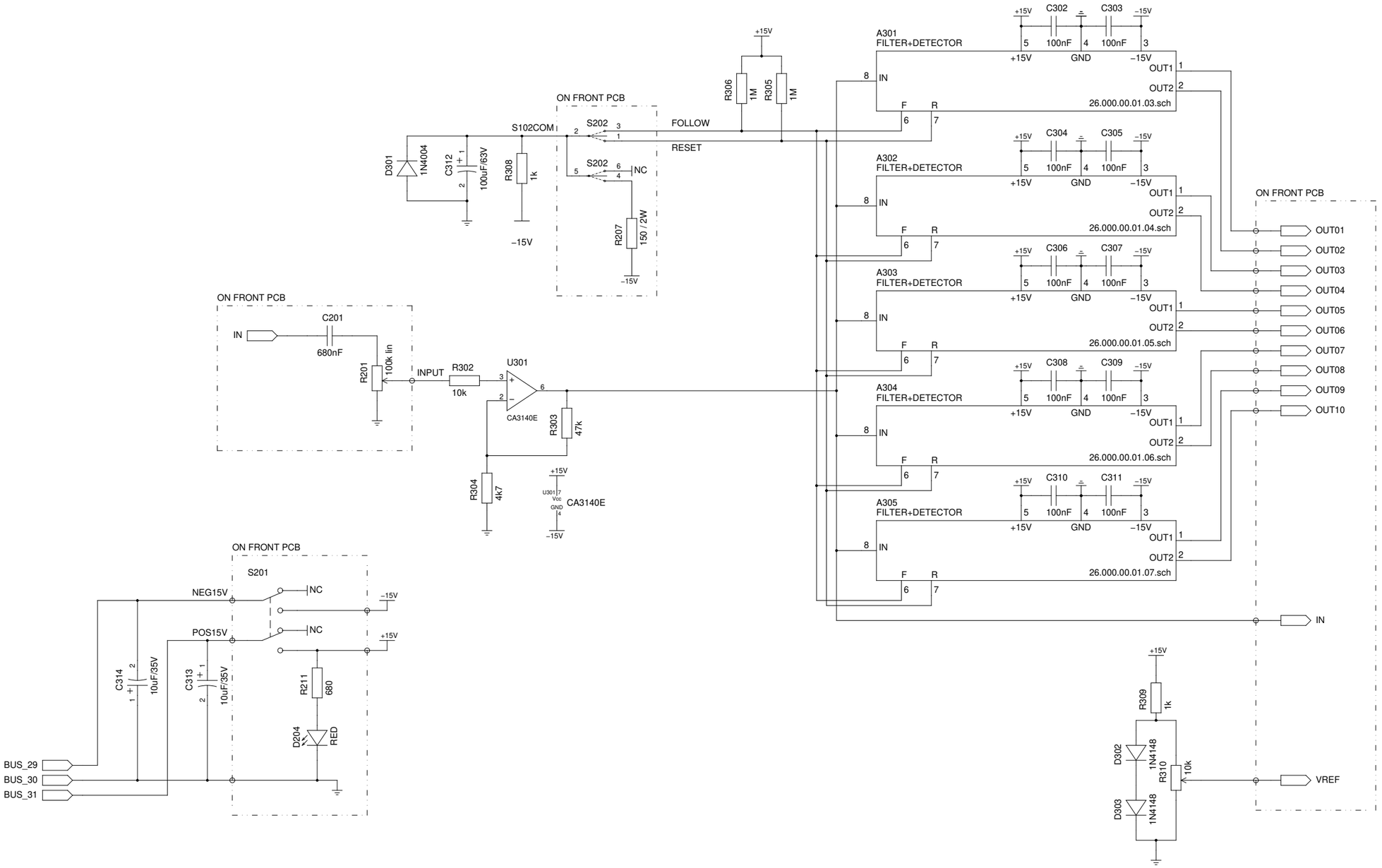
A3





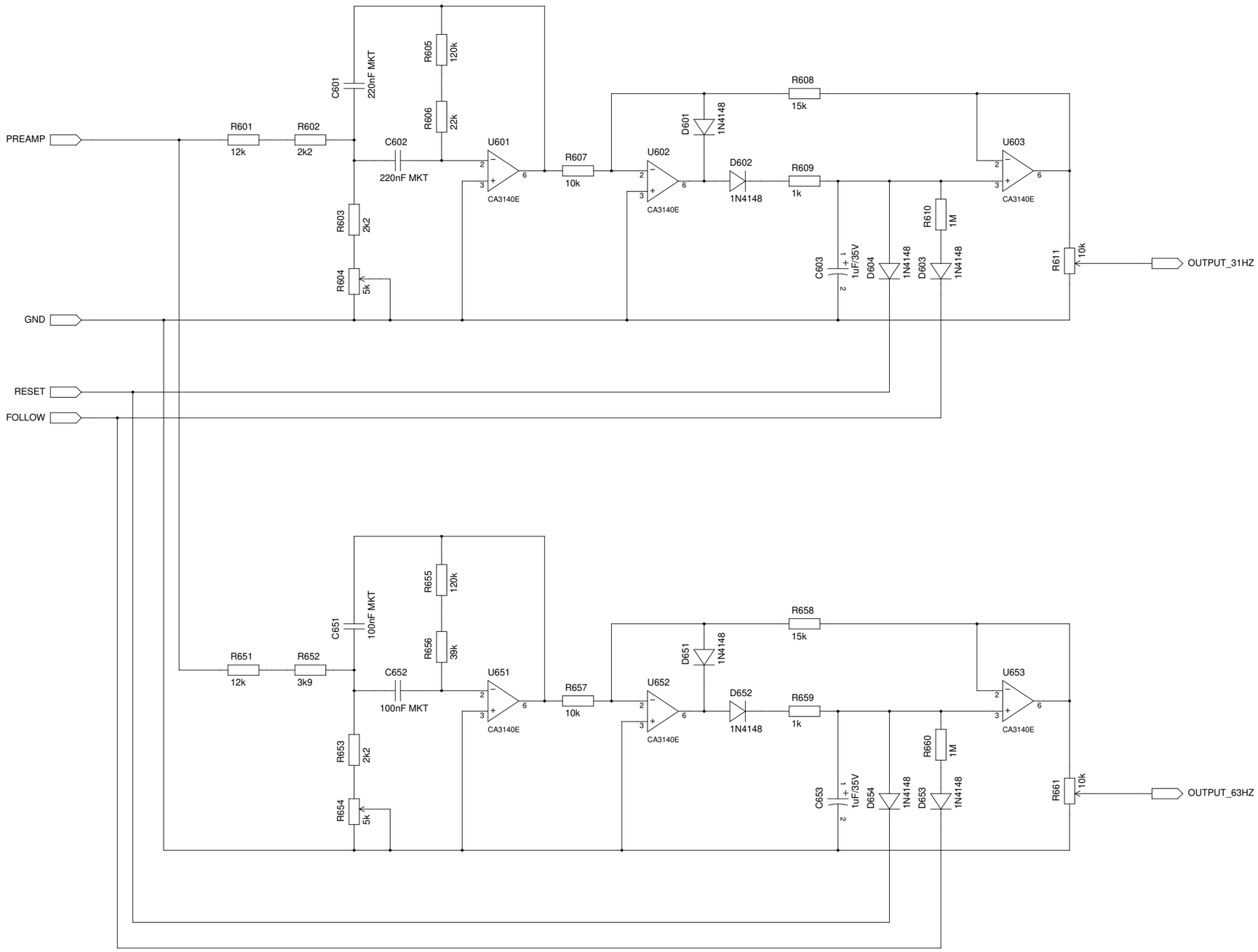
TITLE	Octave Filter block diagram OCTAVE_FILTER		
FILE:	26.000.00.01.01.sch	REVISION:	20220422
PAGE	01 OF 07	DRAWN BY:	Bert Timmerman

A1



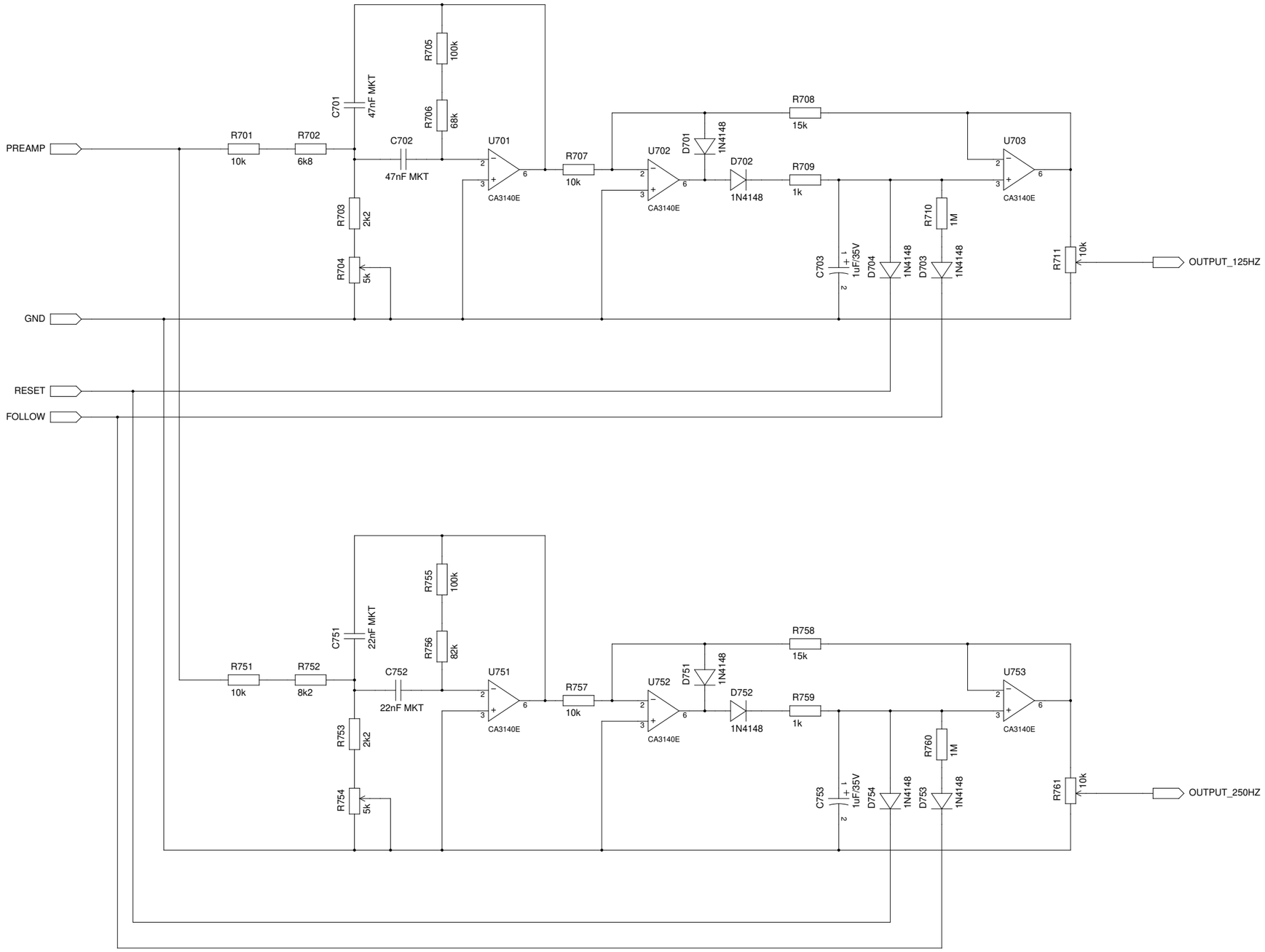
TITLE	Octave Filter schematic OCTAVE_FILTER		
FILE:	26.000.00.01.02.sch	REVISION:	20220422
PAGE	02 OF 07	DRAWN BY:	Bert Timmerman

A1



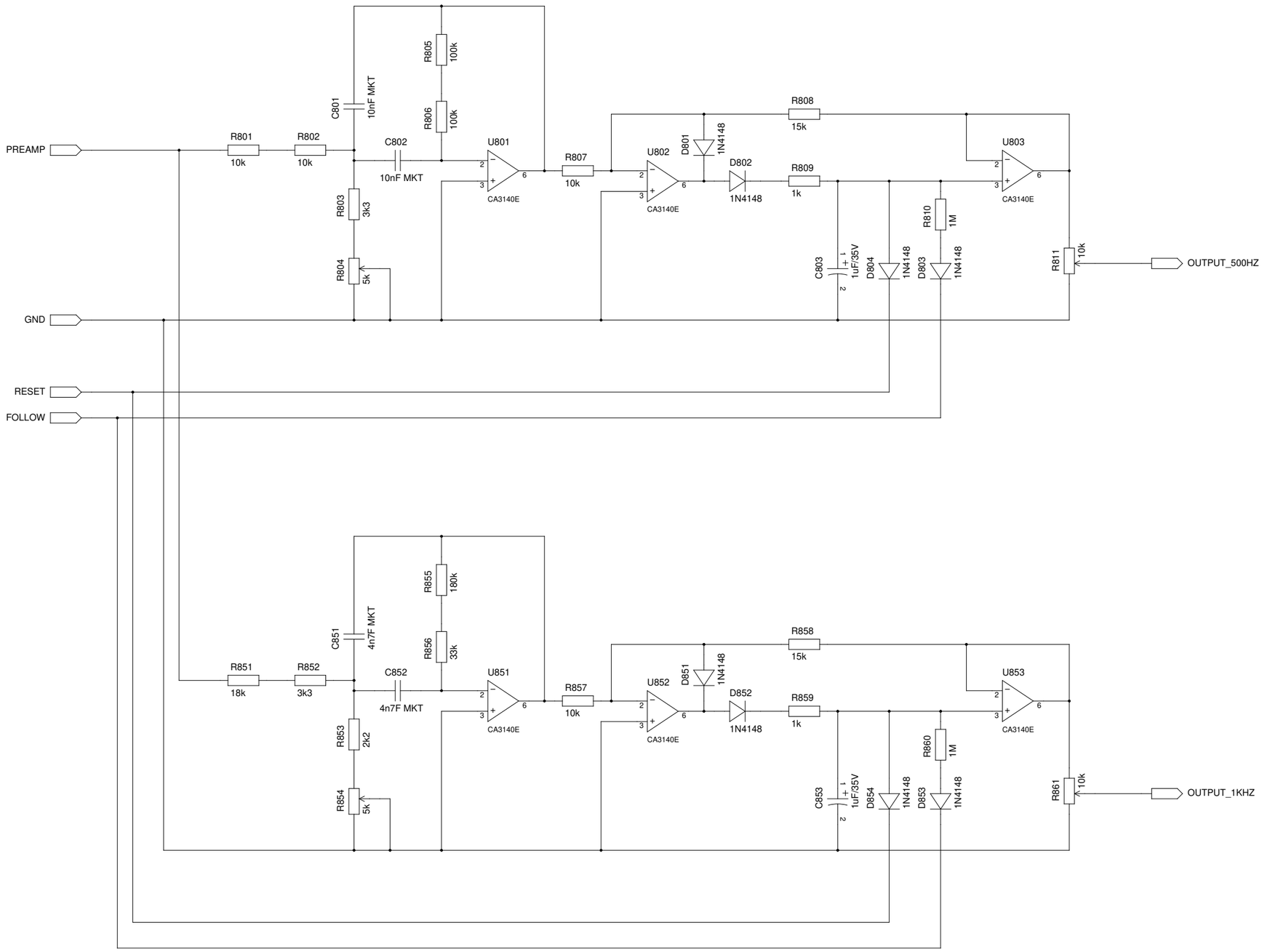
TITLE	Octave Filter 31.5 Hz and 63 Hz module schematic OCTAVE_FILTER		
FILE:	26.000.00.01.03.sch	REVISION:	20220422
PAGE	03 OF 07	DRAWN BY:	Bert Timmerman

A1



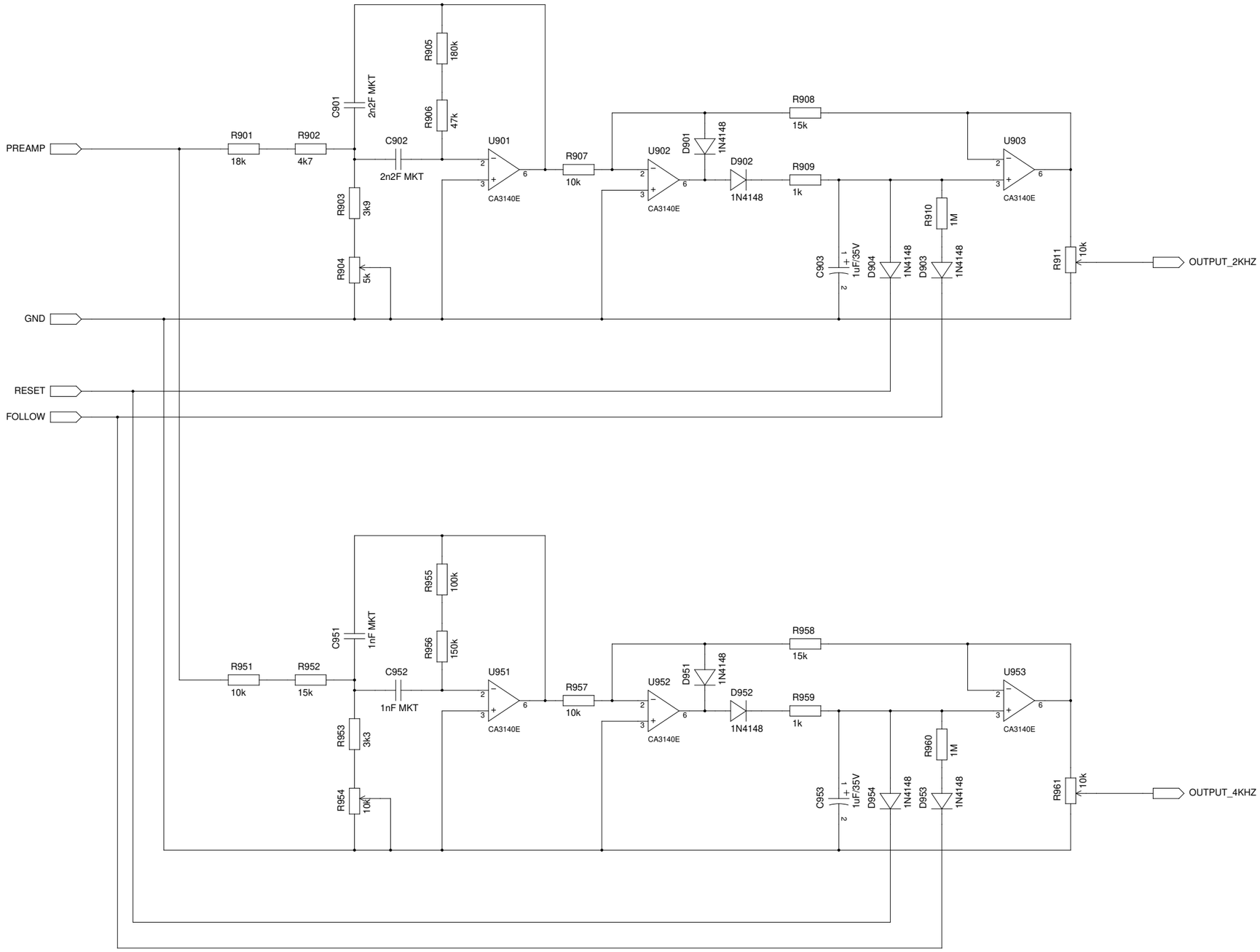
TITLE	Octave Filter 125 Hz and 250 Hz module schematic OCTAVE_FILTER		
FILE:	26.000.00.01.04.sch	REVISION:	20220422
PAGE	04 OF 07	DRAWN BY:	Bert Timmerman

A1



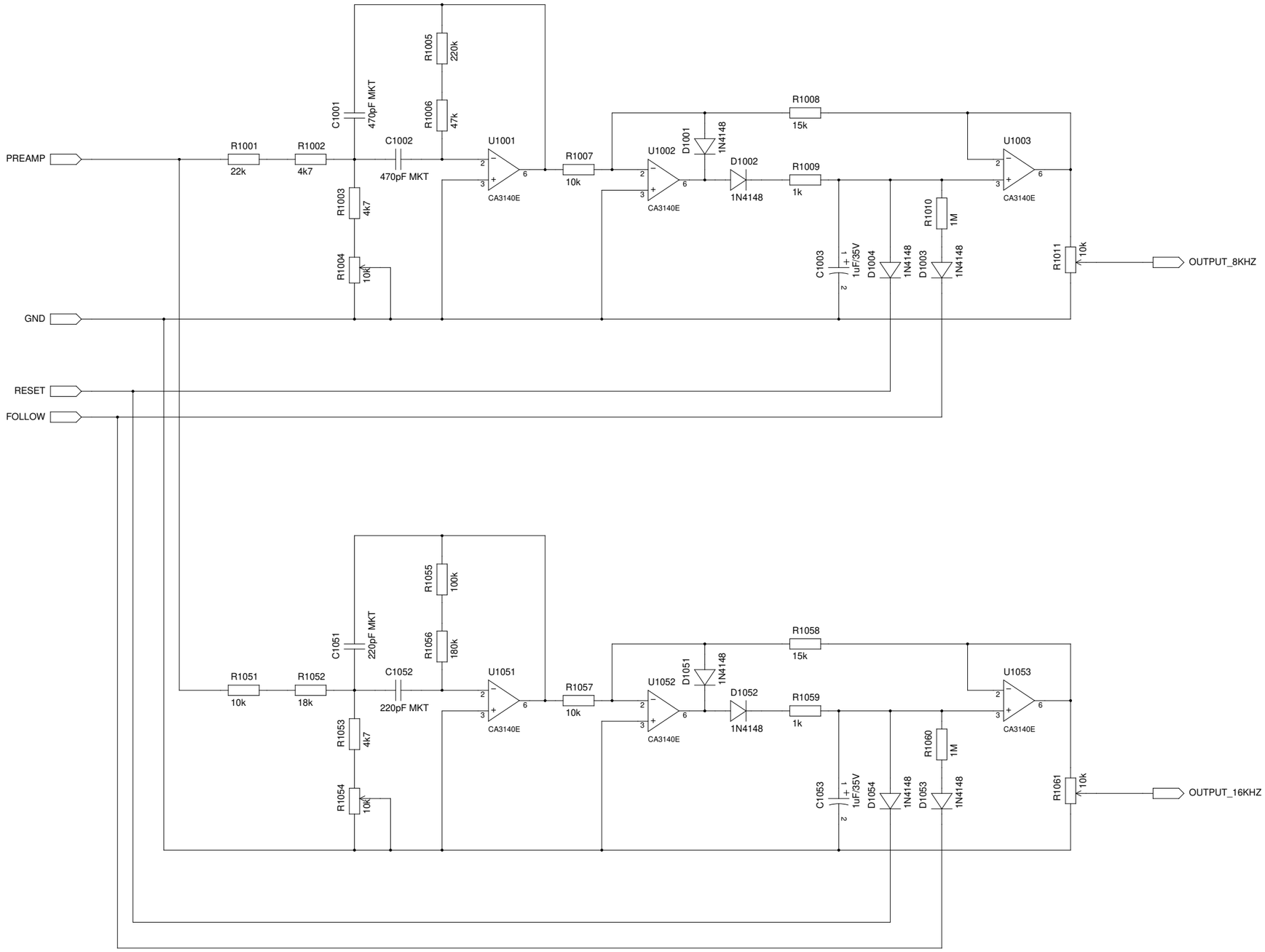
TITLE	Octave Filter 500 Hz and 1 kHz module schematic OCTAVE_FILTER		
FILE:	26.000.00.01.05.sch	REVISION:	20220422
PAGE	05 OF 07	DRAWN BY:	Bert Timmerman

A1



TITLE	Octave Filter 2 kHz and 4 kHz module schematic OCTAVE_FILTER		
FILE:	26.000.00.01.06.sch	REVISION:	20220422
PAGE	06 OF 07	DRAWN BY:	Bert Timmerman

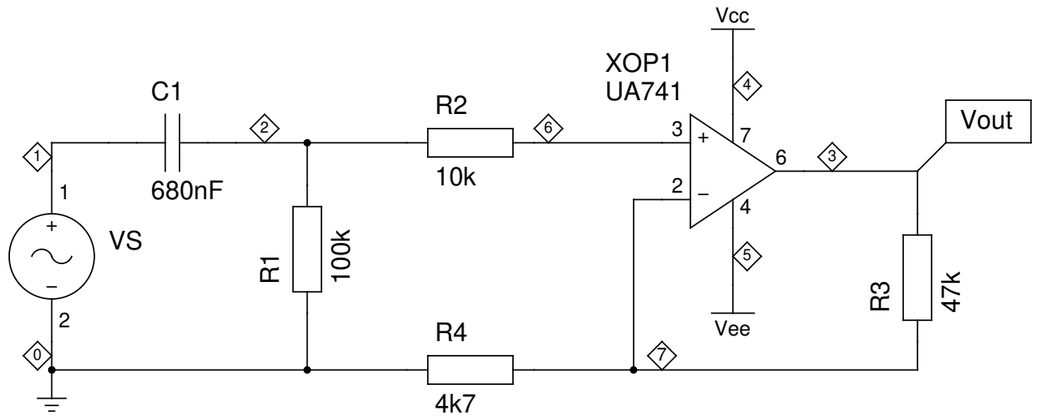
A1



TITLE	Octave Filter 8 kHz and 16 kHz module schematic OCTAVE_FILTER		
FILE:	26.000.00.01.07.sch	REVISION:	20220422
PAGE	07 OF 07	DRAWN BY:	Bert Timmerman

A1

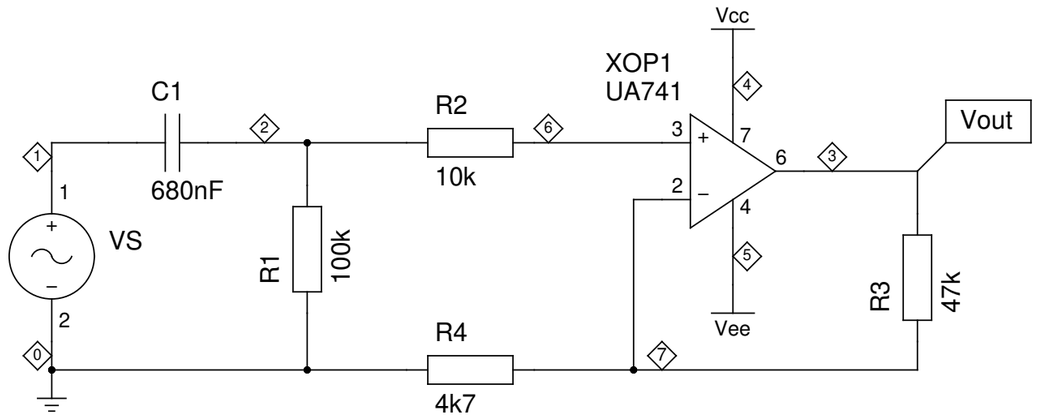
```
.TITLE OCTAVE FILTER – MAIN BOARD – INPUT STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 100)
C1 1 2 680n
R1 0 2 100k
R2 2 6 10K
R3 3 7 47k
R4 7 0 4700
XOP1 6 7 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3)

*     FROM      TO   STEP
.TRAN 0.00001   0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20           0.01   10Meg

.END
```



TITLE	Octave Filter – Main board – Input stage (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

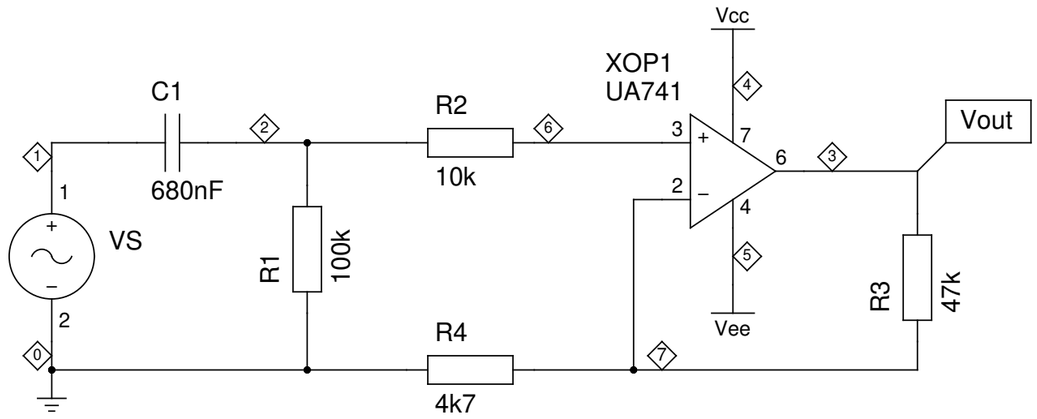
```
.TITLE OCTAVE FILTER – MAIN BOARD – INPUT STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 31.5)
C1 1 2 680n
R1 0 2 100k
R2 2 6 10K
R3 3 7 47k
R4 7 0 4700
XOP1 6 7 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.4  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – Main board – Input stage (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.02.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

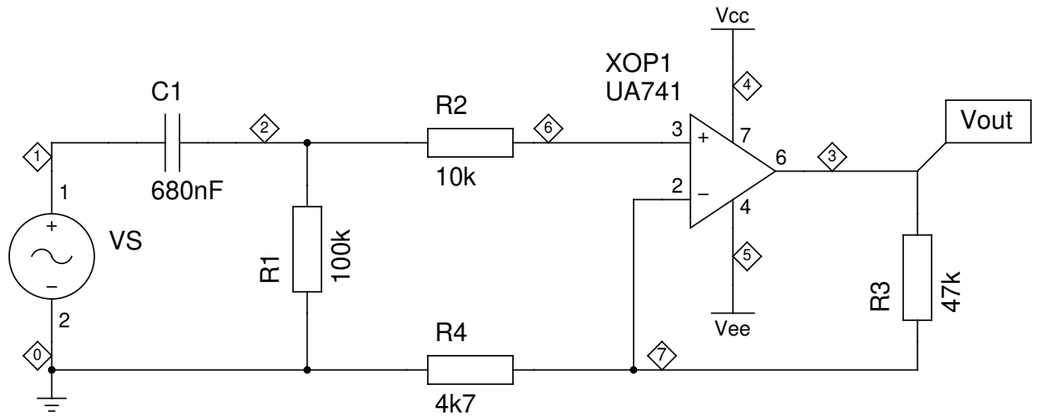
```
.TITLE OCTAVE FILTER – MAIN BOARD – INPUT STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1 16k)
C1 1 2 680n
R1 0 2 100k
R2 2 6 10K
R3 3 7 47k
R4 7 0 4700
XOP1 6 7 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO    STEP
.TRAN 0     0.01  0.000001 TRACE ALL

.END
```



TITLE	Octave Filter – Main board – Input stage (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.03.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

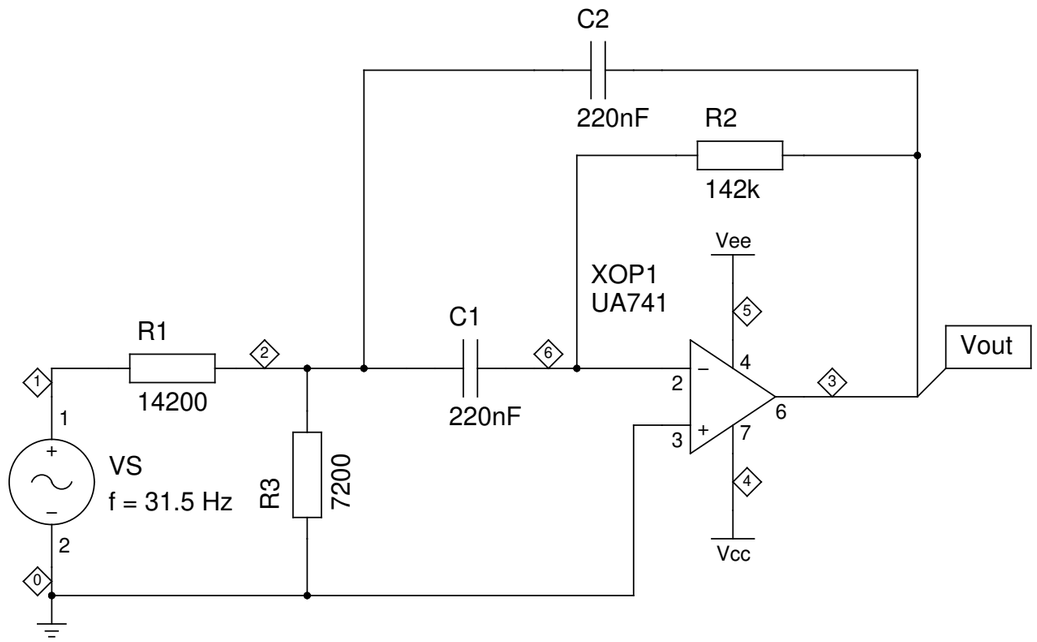
```
.TITLE OCTAVE FILTER – MAIN BOARD – INPUT STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 1k)
C1 1 2 680n
R1 0 2 100k
R2 2 6 10K
R3 3 7 47k
R4 7 0 4700
XOP1 6 7 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO    STEP
.TRAN 0     0.02  0.000001 TRACE ALL

.END
```



TITLE	Octave Filter – Main board – Input stage (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.04.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

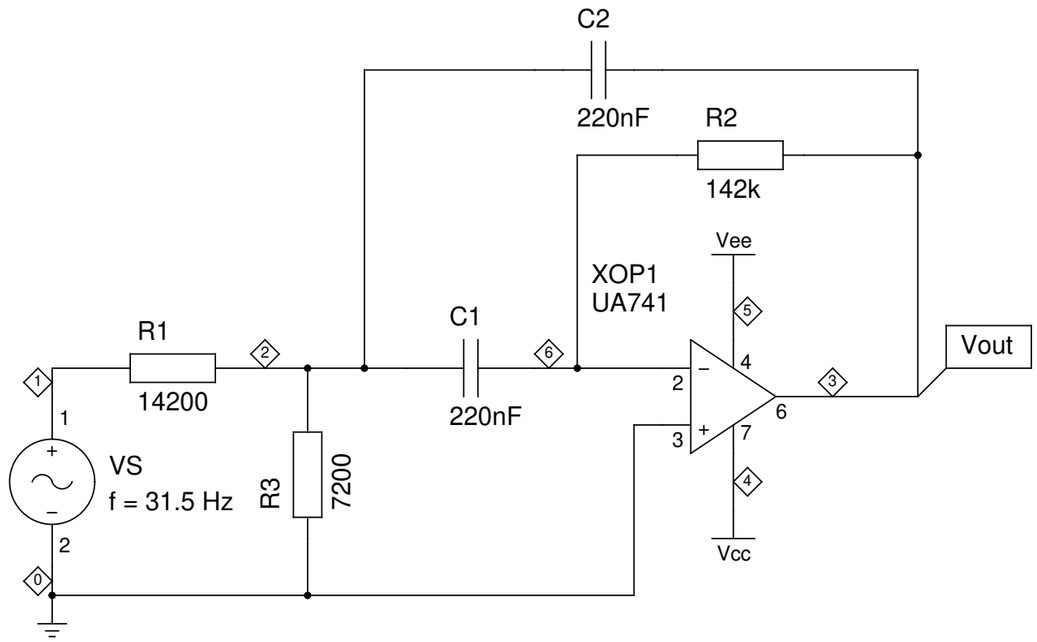
A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 100)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3)

*     FROM      TO   STEP
.TRAN 0.00001   0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20           0.1    100k

.END
```



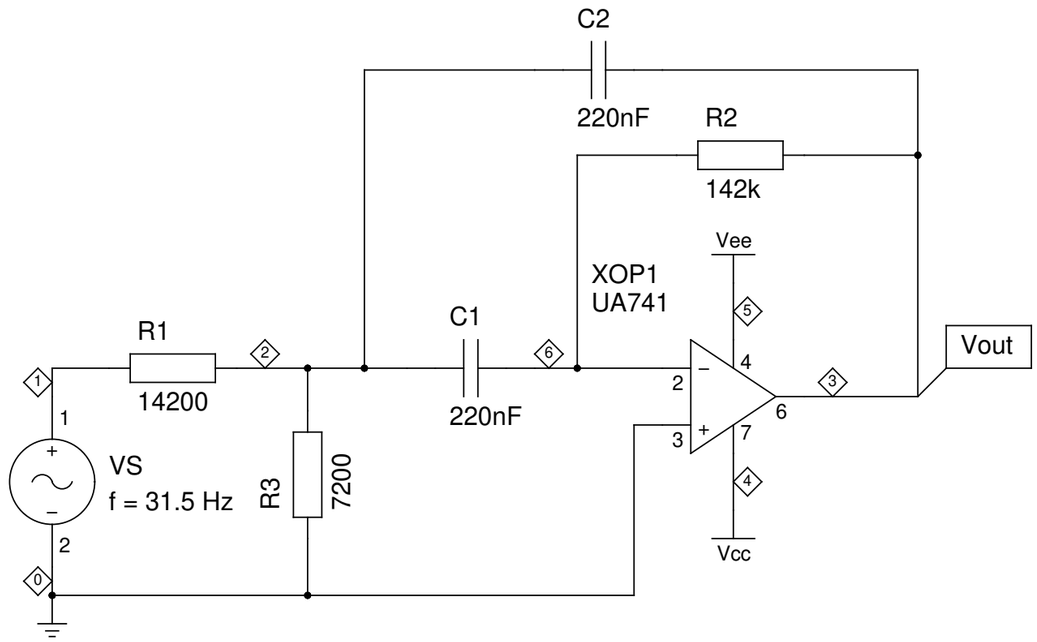
TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.05.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.2  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.06.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

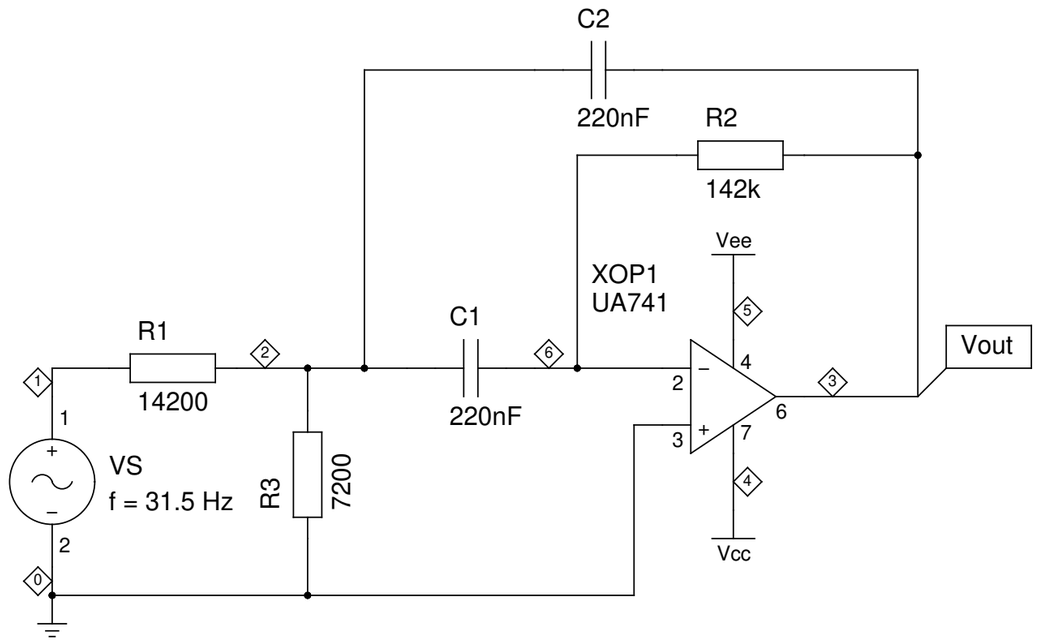
```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.2  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.07.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

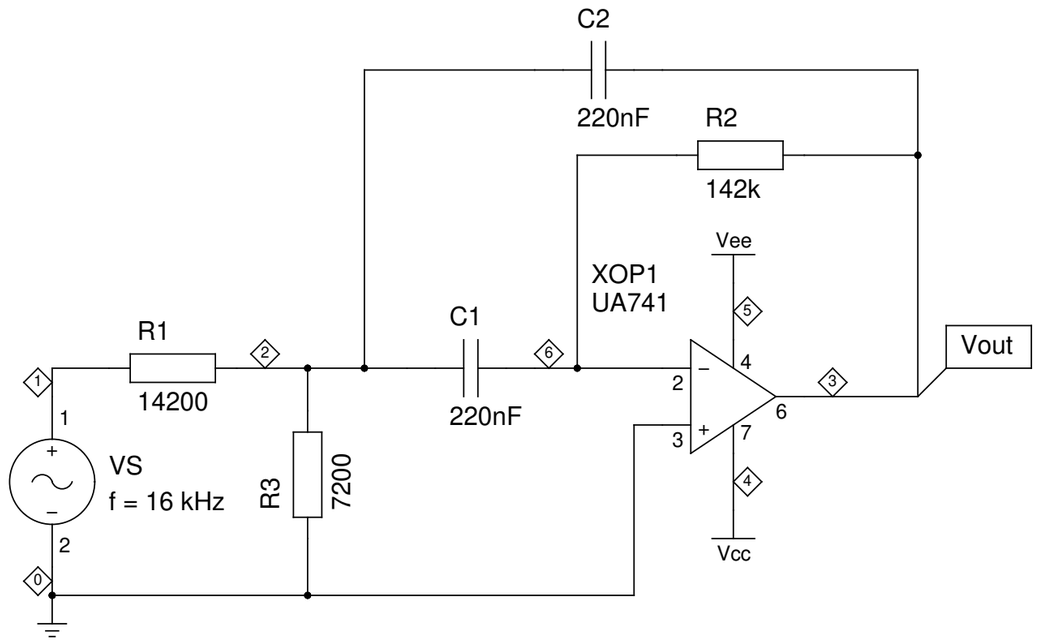
A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.2  0.00001 TRACE ALL

.END
```



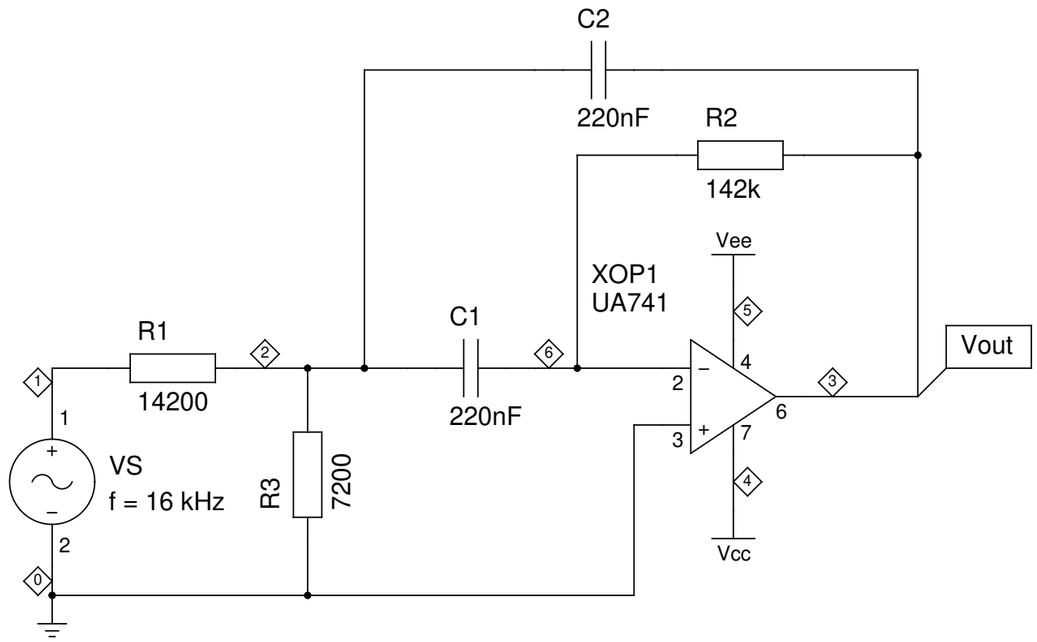
TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.08.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.01 0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.09.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

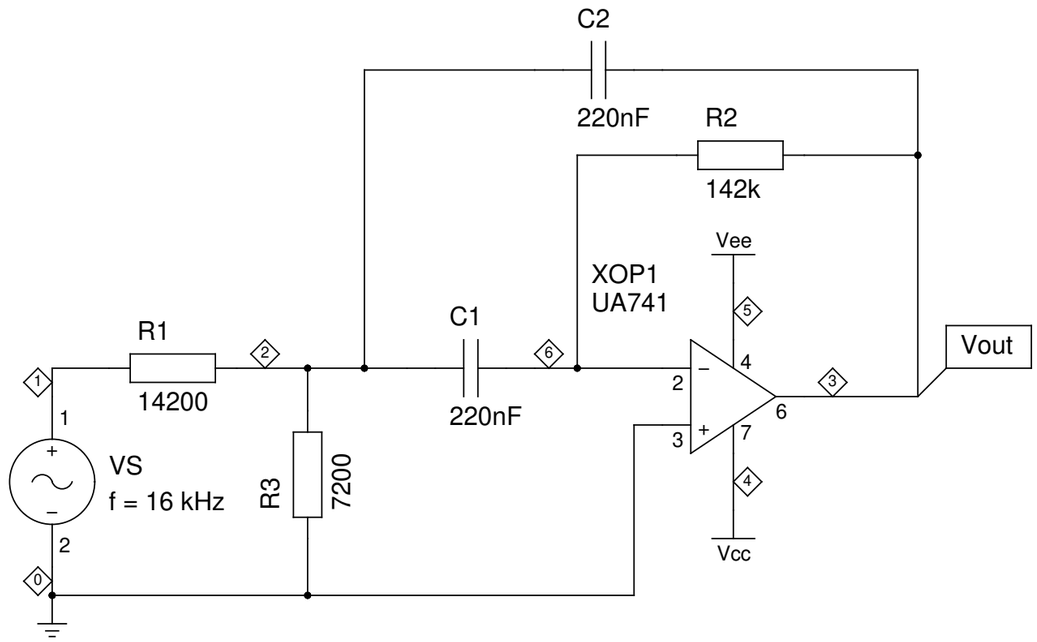
```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.001  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.10.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

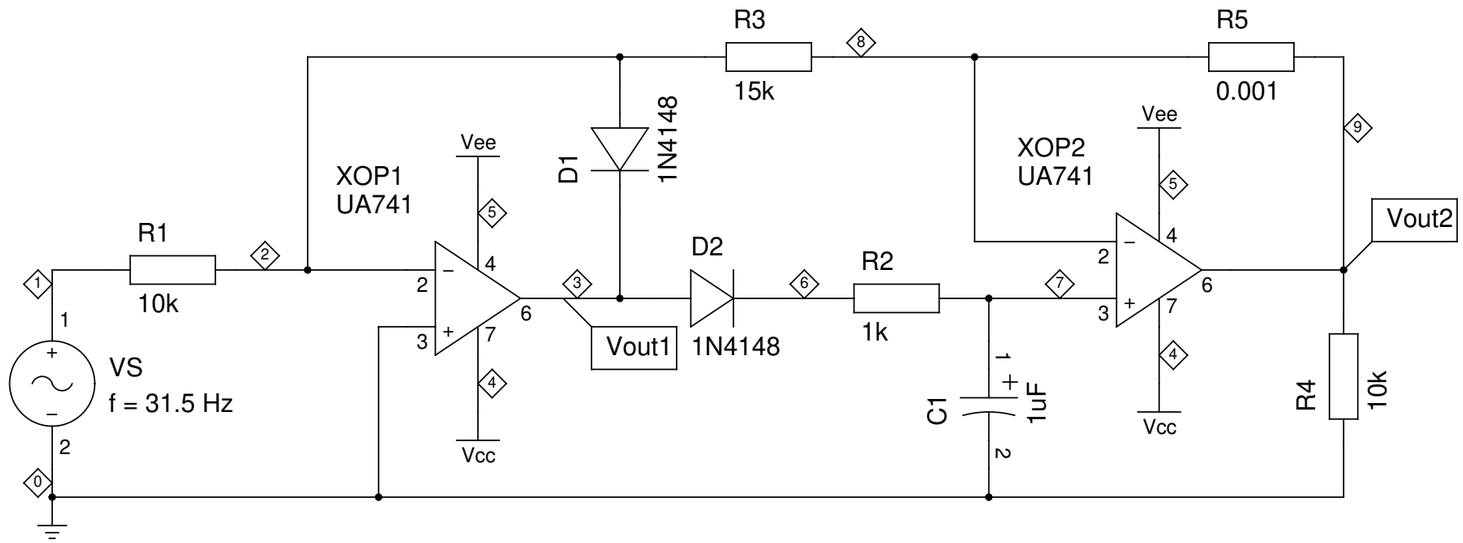
```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 14200
R2 3 6 142K
R3 0 2 7200
C1 2 6 220nF
C2 3 2 220nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.001  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.11.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

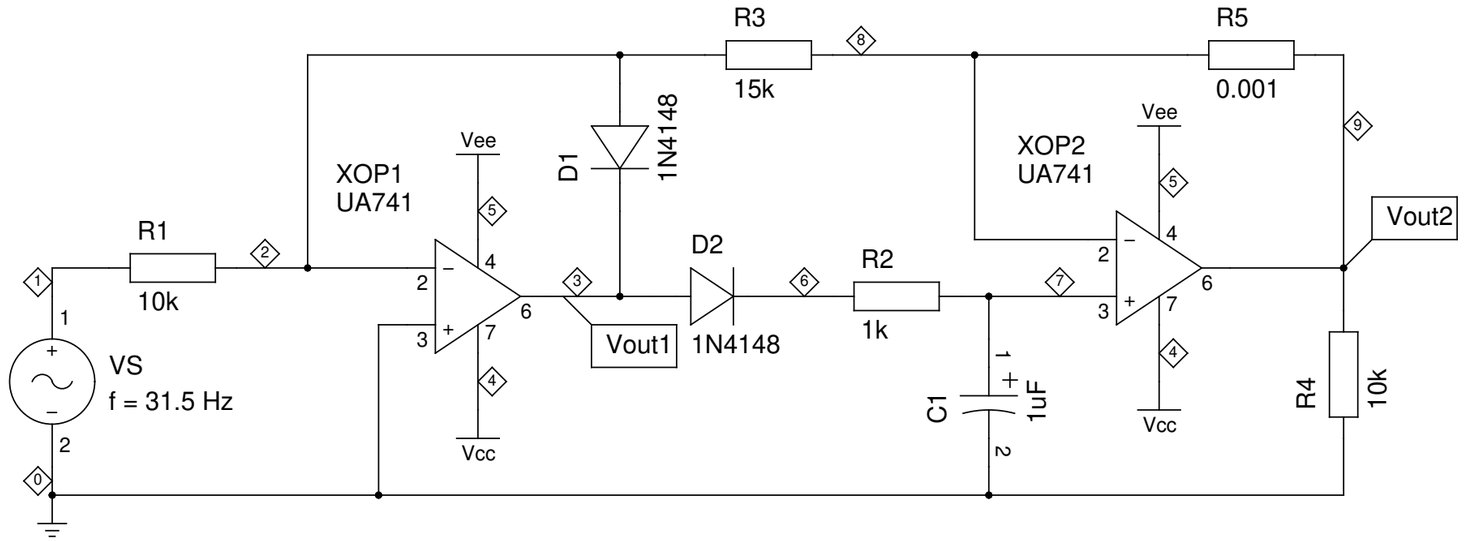
A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – DETECTOR STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 31.5)

C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3) VDB(9)

*     FROM     TO   STEP
.TRAN 0.00001  0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20            0.1    100k

.END
```



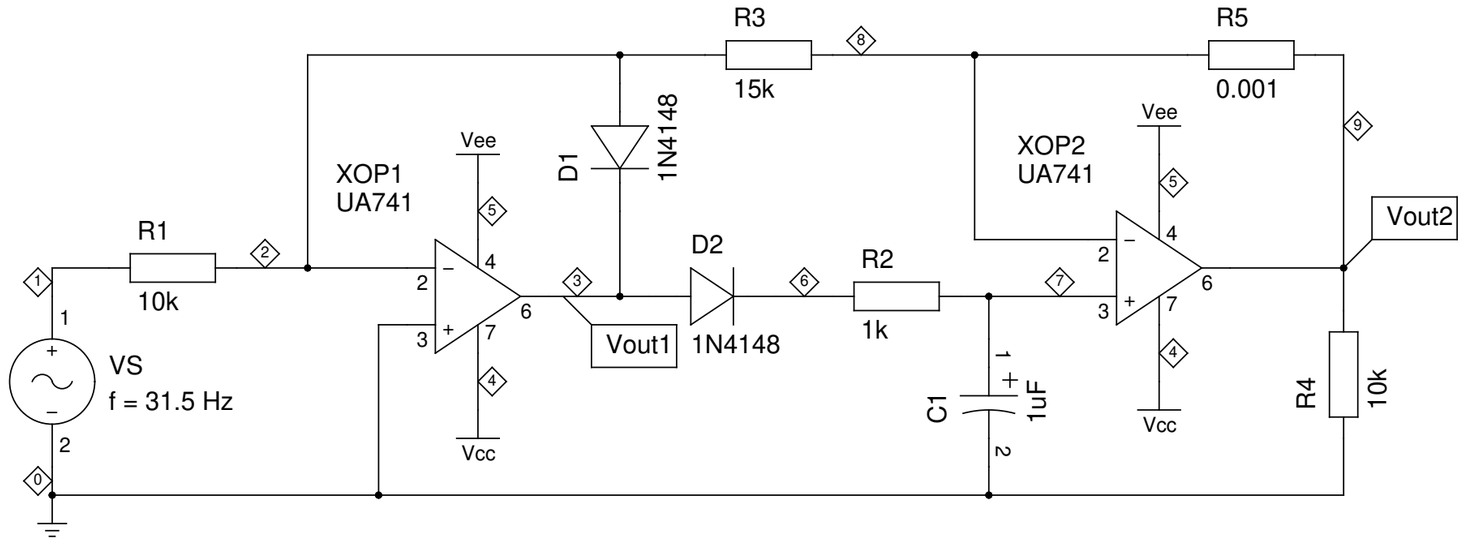
	Octave Filter – Second stage of the 31.5 Hz module (for simulation) schematic
TITLE	OCTAVE_FILTER
FILE:	26.000.00.02.12.sch
PAGE	01 OF 01
REVISION:	20220422
DRAWN BY:	Bert Timmerman
	A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14

VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(9) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.4  0.00001 TRACE ALL

.END
```



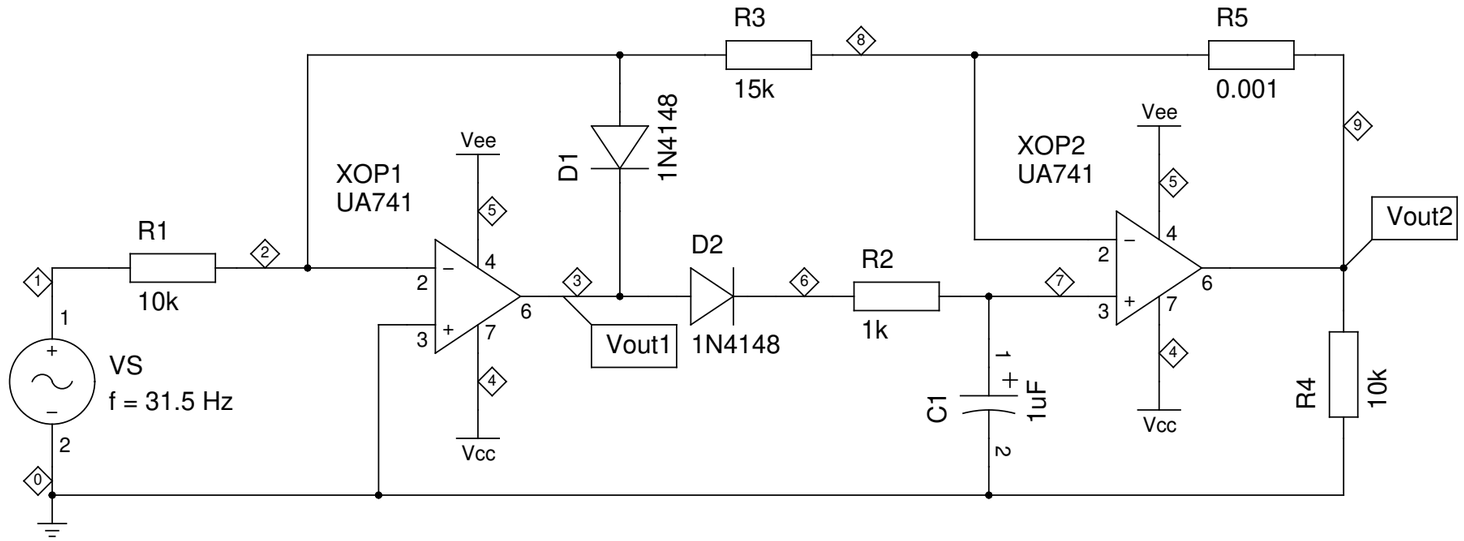
TITLE	Octave Filter – Second stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.13.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14

VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3) I(R4) I(R5)

*     FROM  TO   STEP
.TRAN 0     0.4  0.00001 TRACE ALL

.END
```



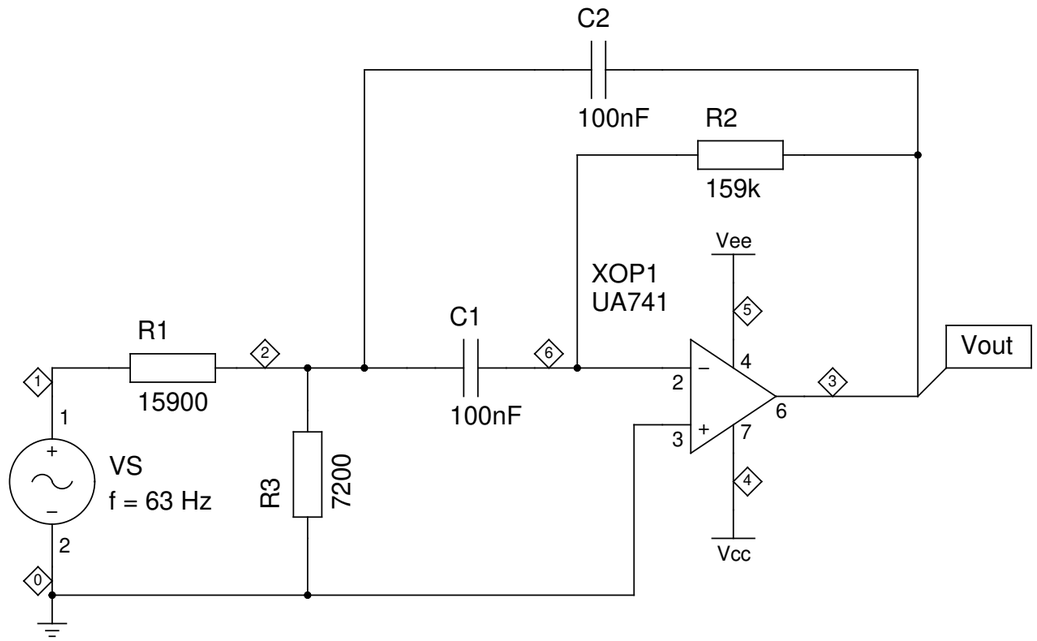
TITLE	Octave Filter – Second stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.14.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

```
.TITLE OCTAVE FILTER – 31.5 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14

VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 31.5)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3) P(R4) P(R5) P(D1) P(D2)

*     FROM  TO   STEP
.TRAN 0     0.4  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – Second stage of the 31.5 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.15.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

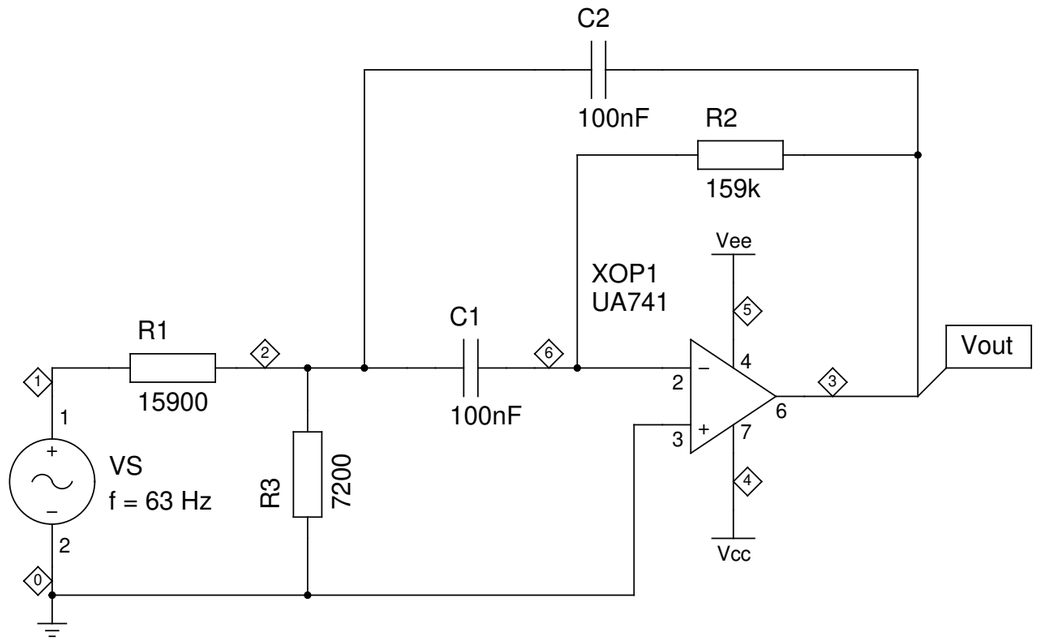
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 100)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3)

*     FROM      TO   STEP
.TRAN 0.00001   0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20           0.1    100k

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.16.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

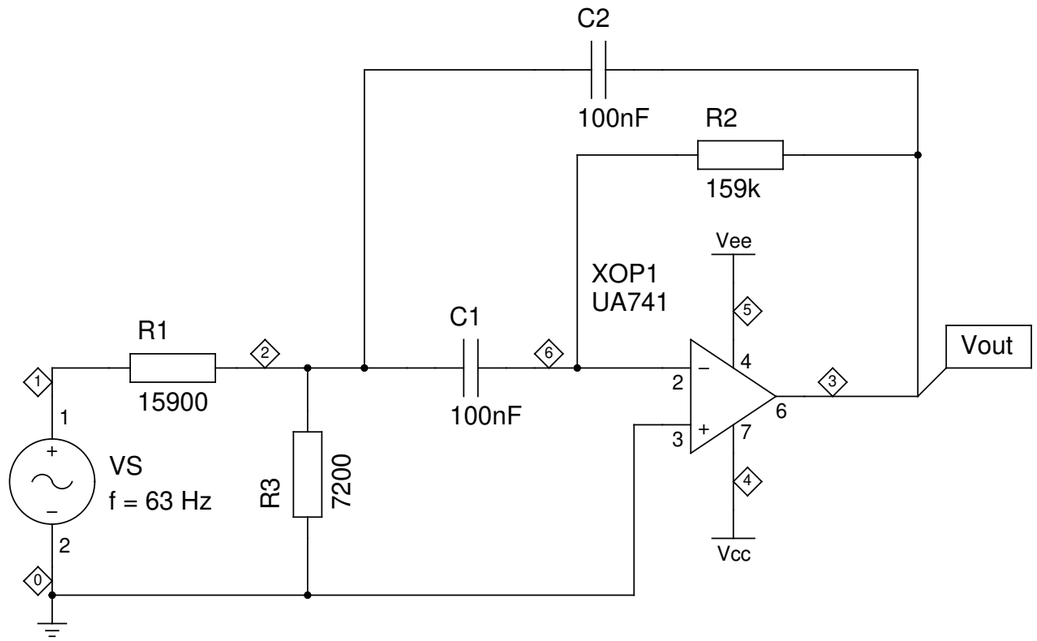
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 63)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.2  0.0001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.17.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

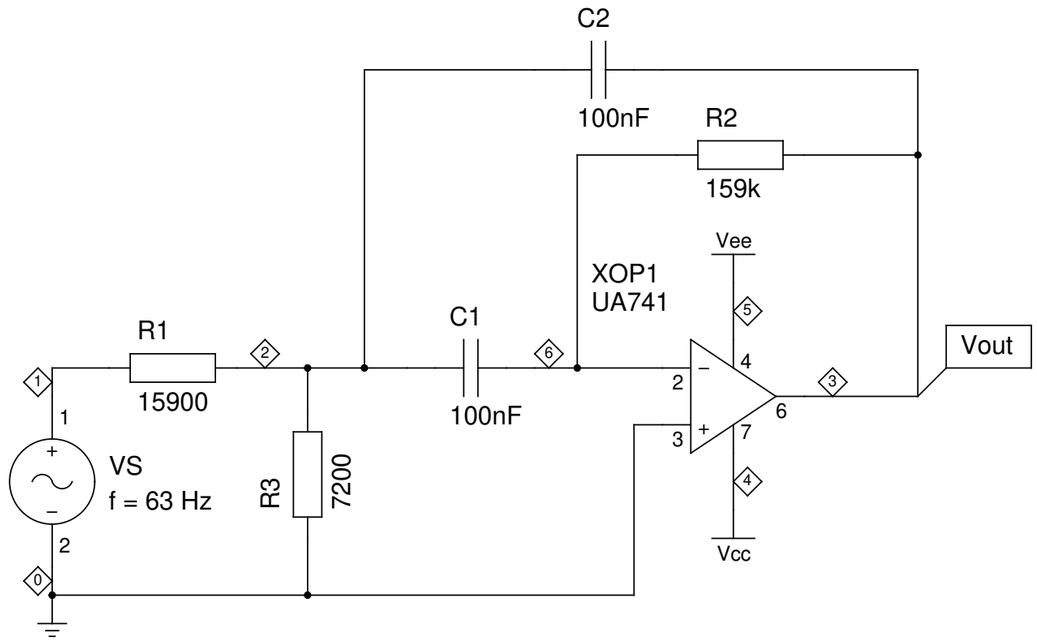
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 63)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.2  0.0001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.18.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

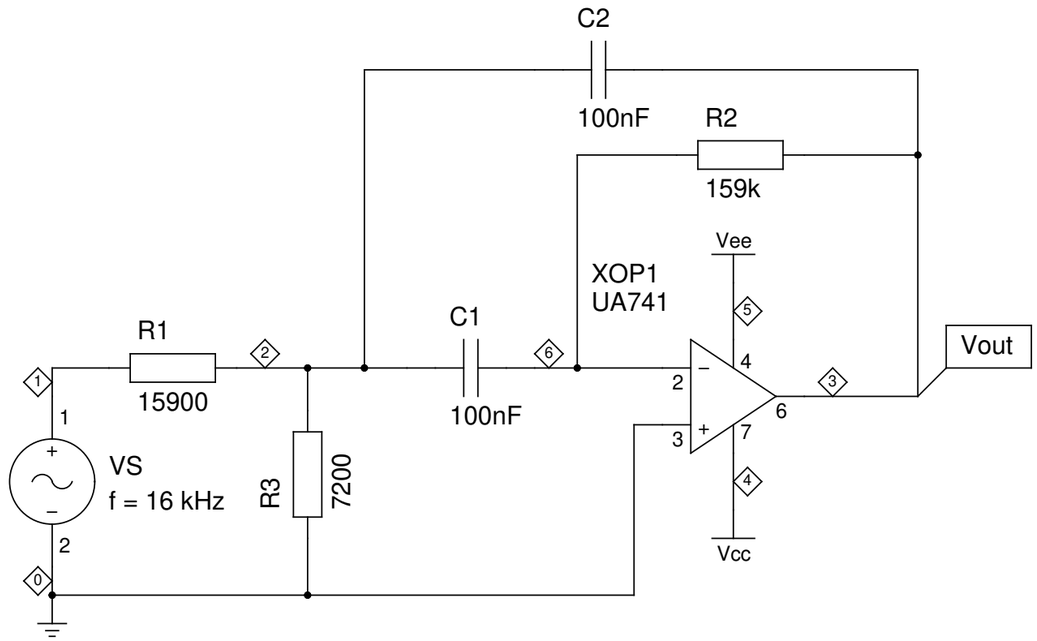
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 63)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.2  0.0001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.19.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

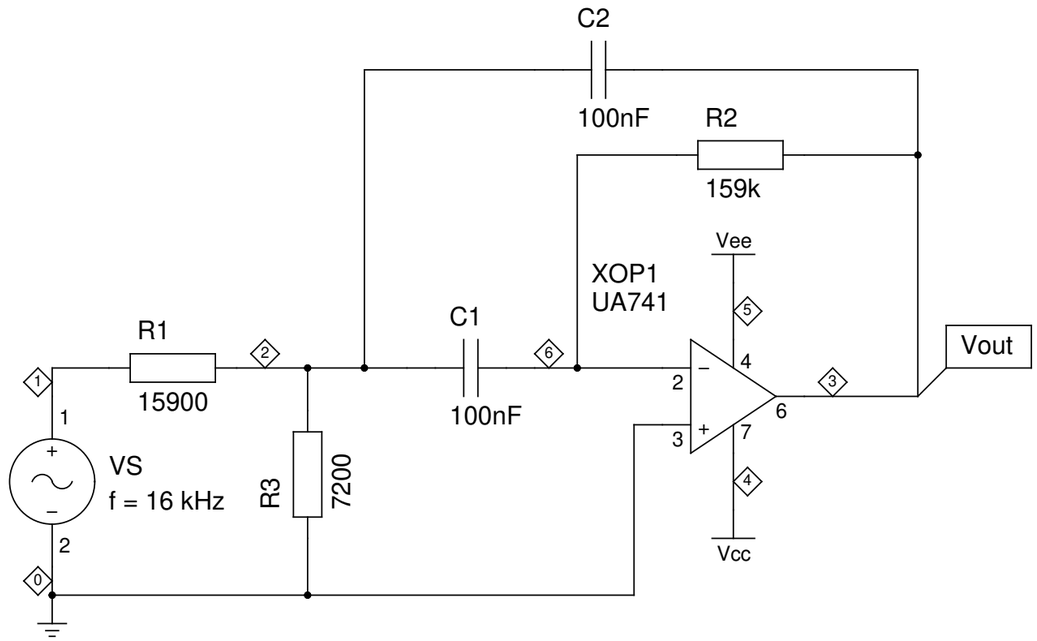
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 16k)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.01  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.20.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

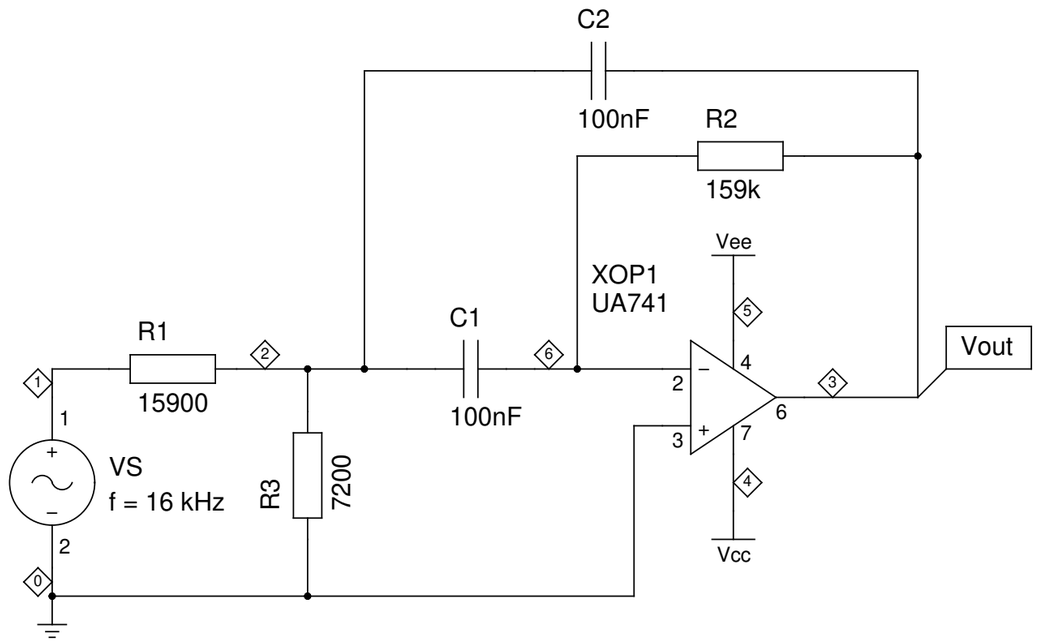
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 16k)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.01  0.0001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.21.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

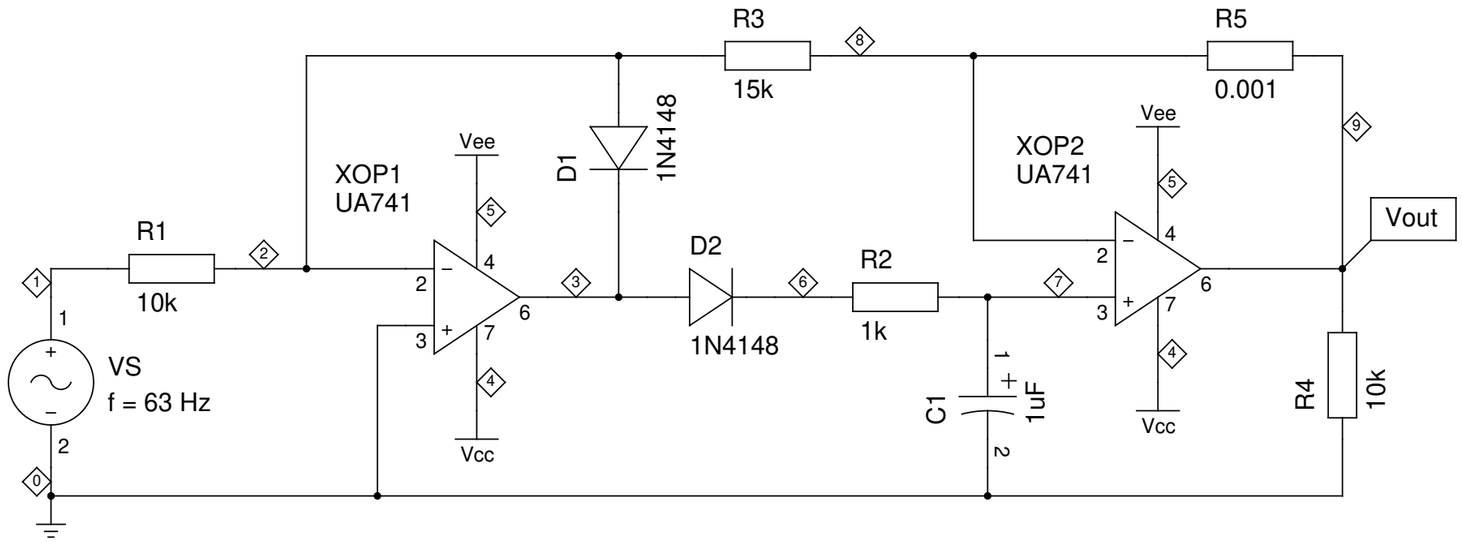
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 0.141 16k)
R1 1 2 15900
R2 3 6 159K
R3 0 2 7200
C1 2 6 100nF
C2 3 2 100nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.01  0.0001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.22.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

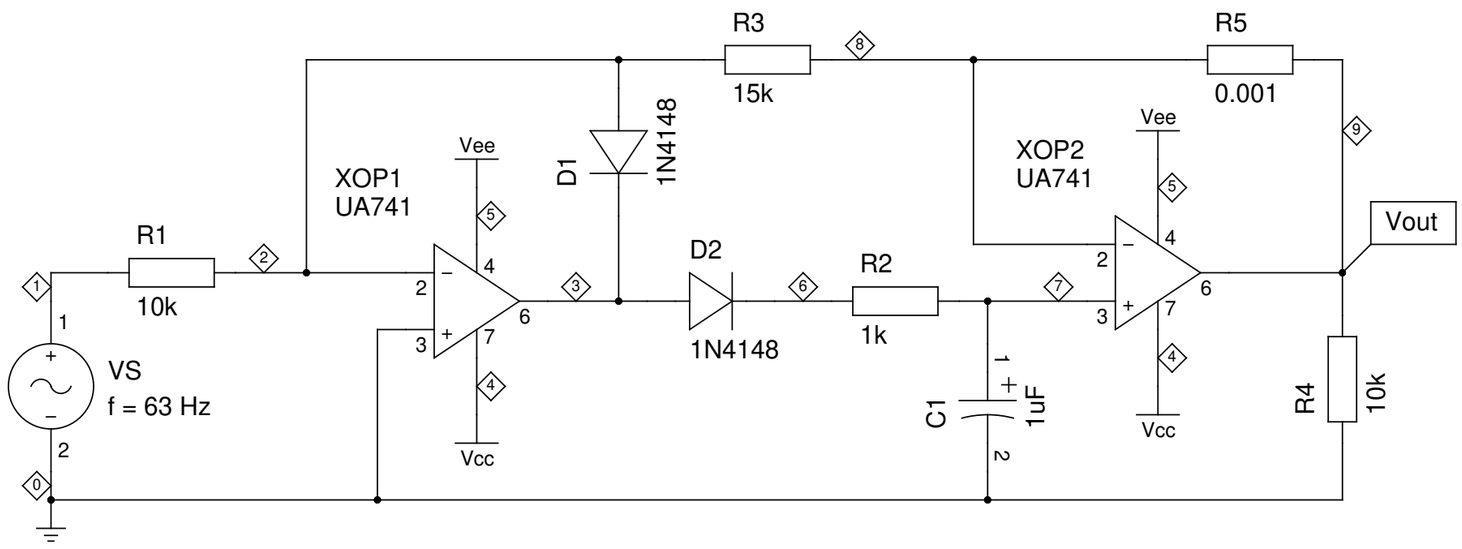
A3

```
.TITLE OCTAVE FILTER – 63 HZ SECTION – DETECTOR STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 63)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3) VDB(9)

*     FROM     TO   STEP
.TRAN 0.00001  0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20            0.1    100k

.END
```



TITLE	Octave Filter – Second stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.23.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman
			A3

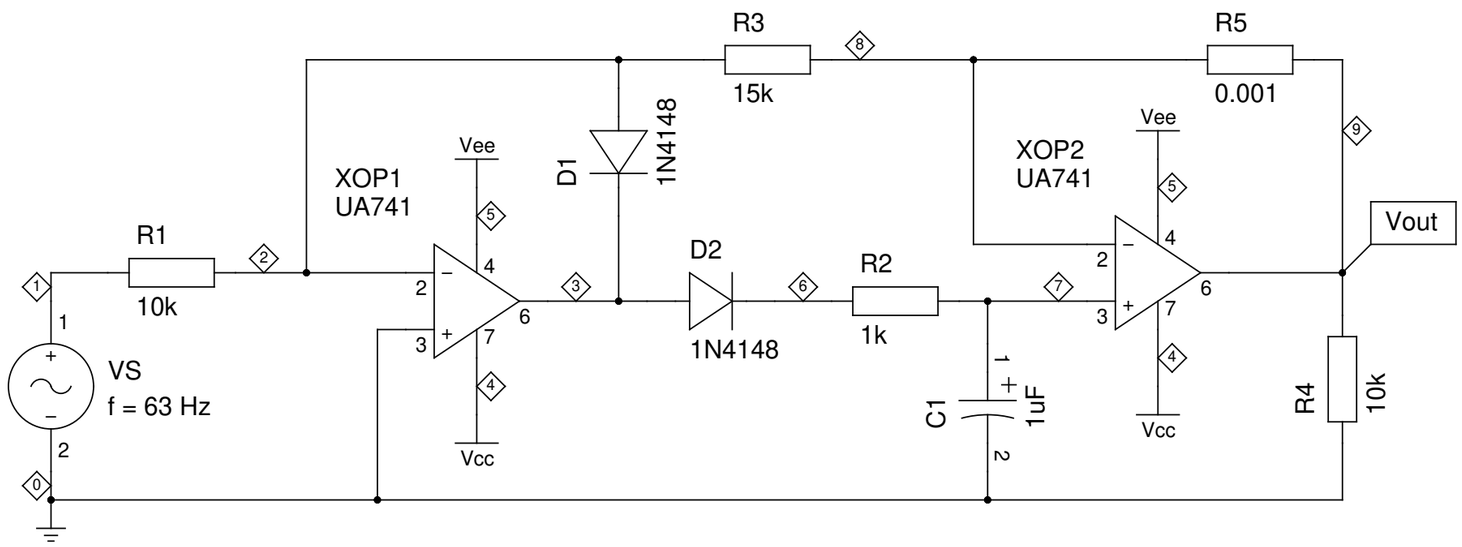
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 63)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(9) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.4  0.00001

.END
```



TITLE	Octave Filter – Second stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.24.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

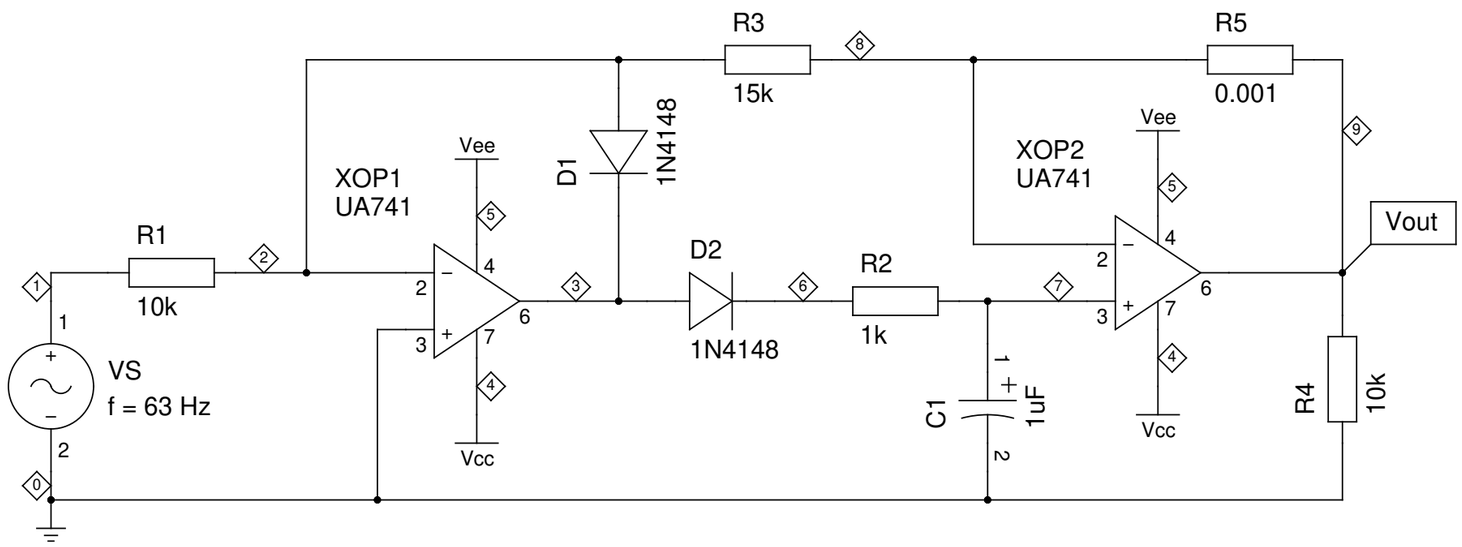
```
.TITLE OCTAVE FILTER – 63 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 63)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3) I(R4) I(R5) I(D1) I(D2)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001

.END
```



TITLE	Octave Filter – Second stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.25.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

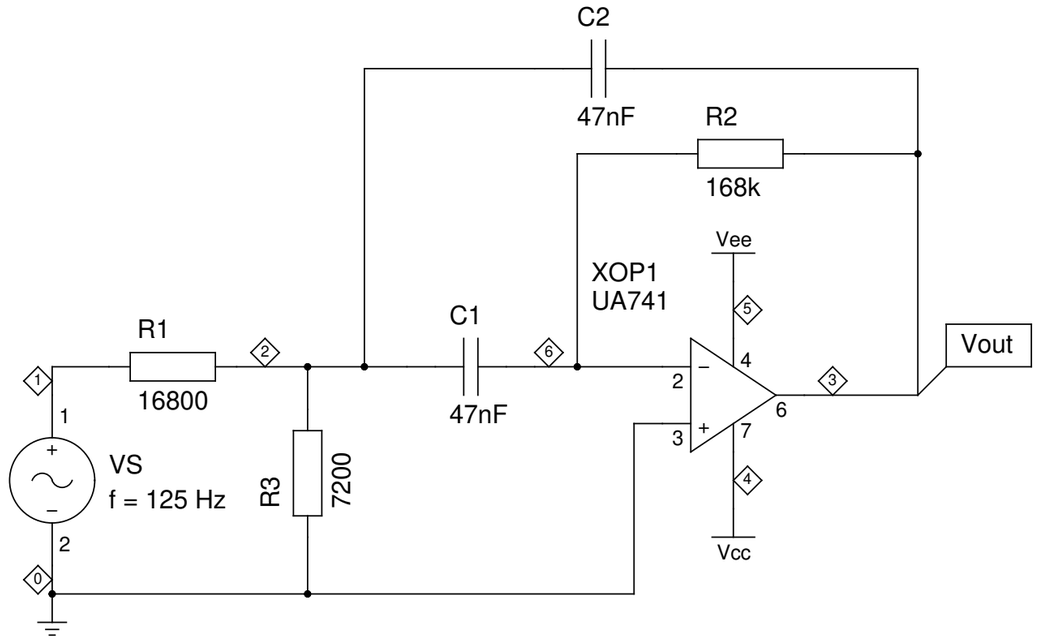
A3

```
.TITLE OCTAVE FILTER – 63 HZ SECTION – DETECTOR STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt

.MODEL 1N4148 D IS=2e–14


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 63)
C1 0 7 1uF
D1 2 3 1N4148
D2 3 6 1N4148
R1 1 2 10000
R2 6 7 1000
R3 8 2 15000
R4 0 9 10000
R5 8 9 .001
XOP1 0 2 0 4 5 3 UA741
XOP2 7 8 0 4 5 9 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3) P(R4) P(R5) P(D1) P(D2)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001

.END
```



TITLE	Octave Filter – Second stage of the 63 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE: 26.000.00.02.26.sch		REVISION: 20220422	A3
PAGE 01	OF 01	DRAWN BY: Bert Timmerman	

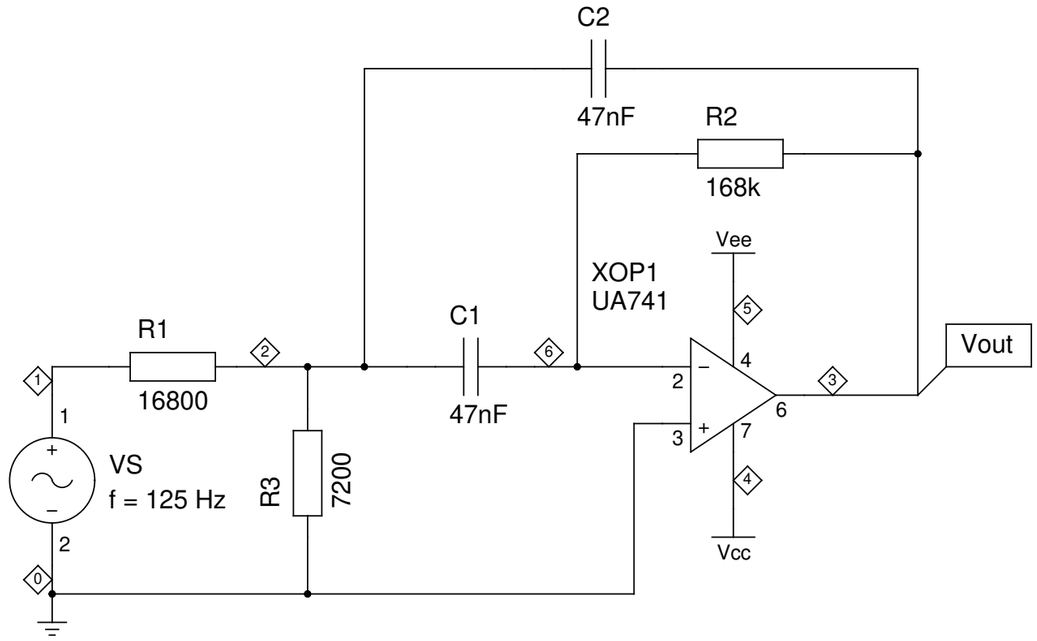
```
.TITLE OCTAVE FILTER – 125 HZ MODULE – FIRST STAGE – FREQUENCY RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 15
VEE 5 0 –15

VS 1 0 AC 1 SIN(0 0.1 100)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT AC VDB(3)

*     FROM      TO   STEP
.TRAN 0.00001   0.2  0.0001

*       #STEPS/DECADE FROM   TO
.AC DEC 20           0.1    100k

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.27.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

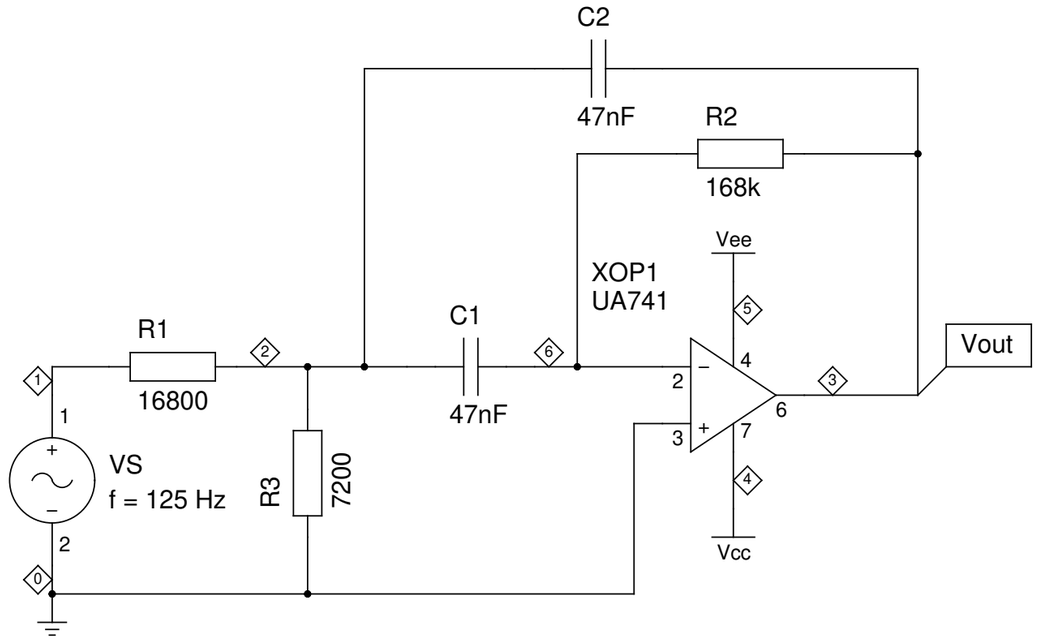
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 125)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.28.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

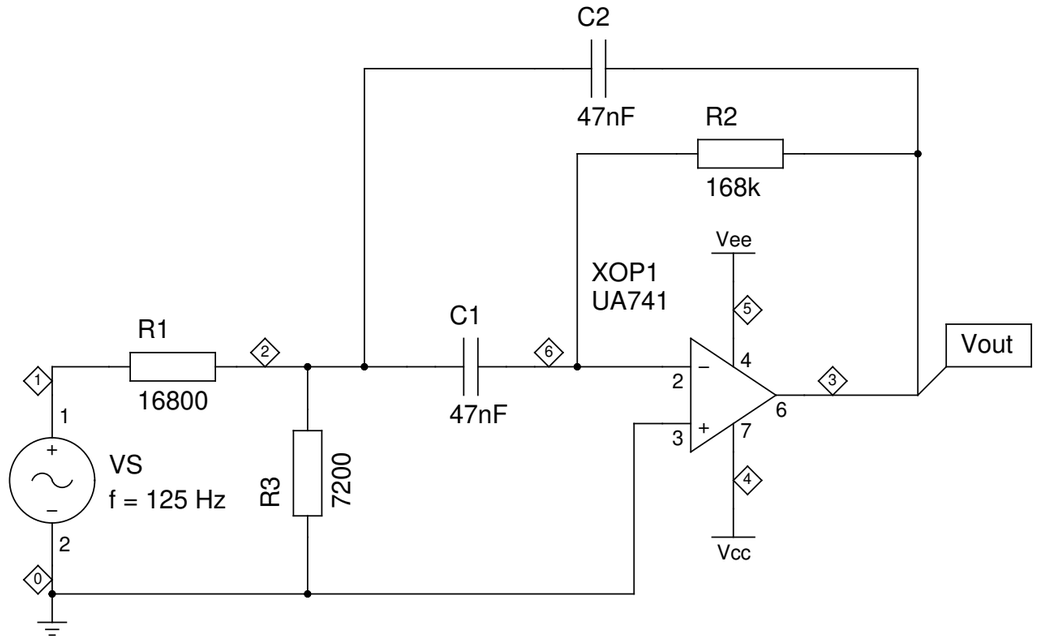
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 125)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.29.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

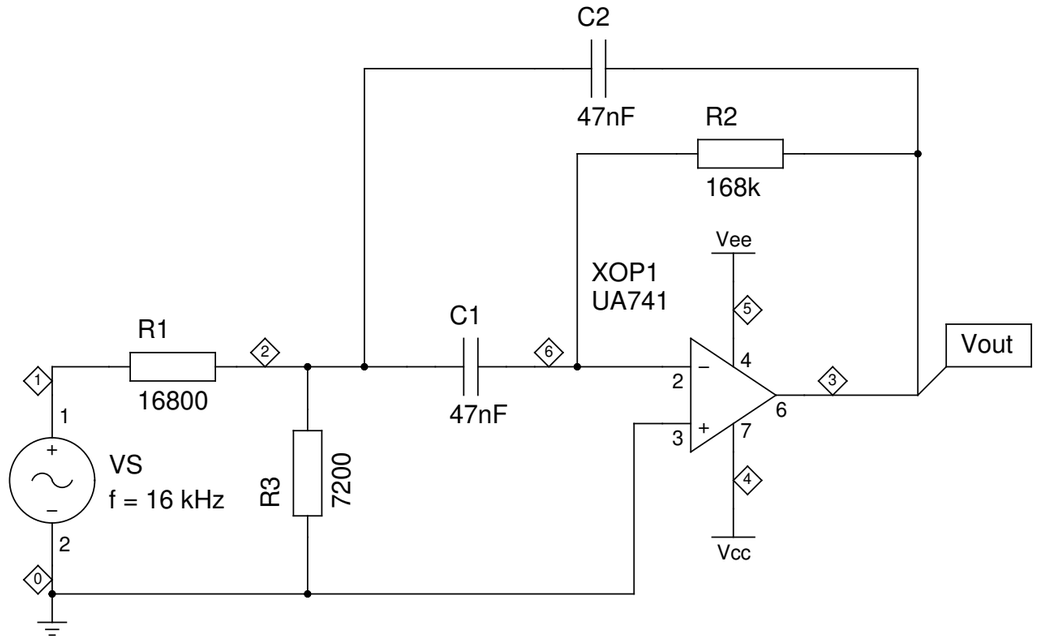
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 125)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.30.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

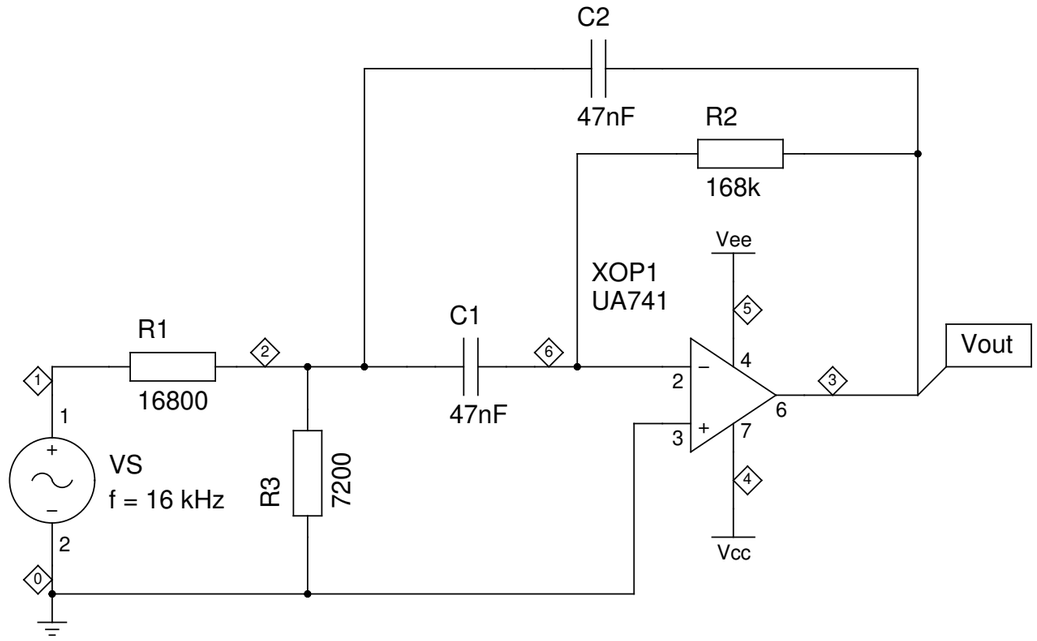
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN V(1) V(3) V(4) V(5)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.31.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

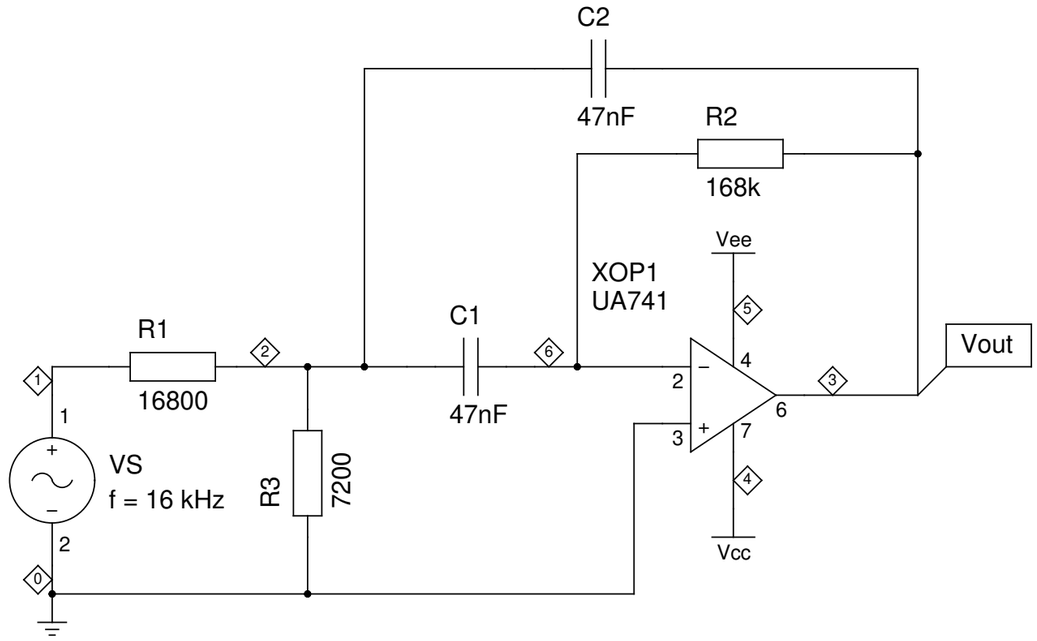
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN I(R1) I(R2) I(R3)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.32.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

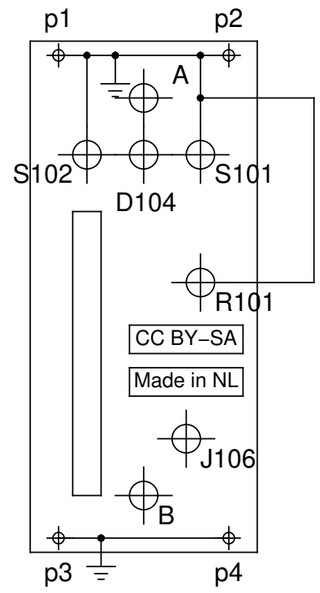
```
.TITLE OCTAVE FILTER – 125 HZ SECTION – BPF STAGE – TRANSIENT RESPONSE

.INCLUDE UA741.subckt


VCC 4 0 pulse(iv=0 pv=15 rise=.01)
VEE 5 0 pulse(iv=0 pv=–15 rise=.01)

VS 1 0 AC 1 SIN(0 1.41 16k)
R1 1 2 16800
R2 3 6 168K
R3 0 2 7200
C1 2 6 47nF
C2 3 2 47nF
XOP1 0 6 0 4 5 3 UA741


.PRINT OP Iter(0) V(3)

.PRINT TRAN P(R1) P(R2) P(R3)

*     FROM  TO   STEP
.TRAN 0     0.1  0.00001 TRACE ALL

.END
```



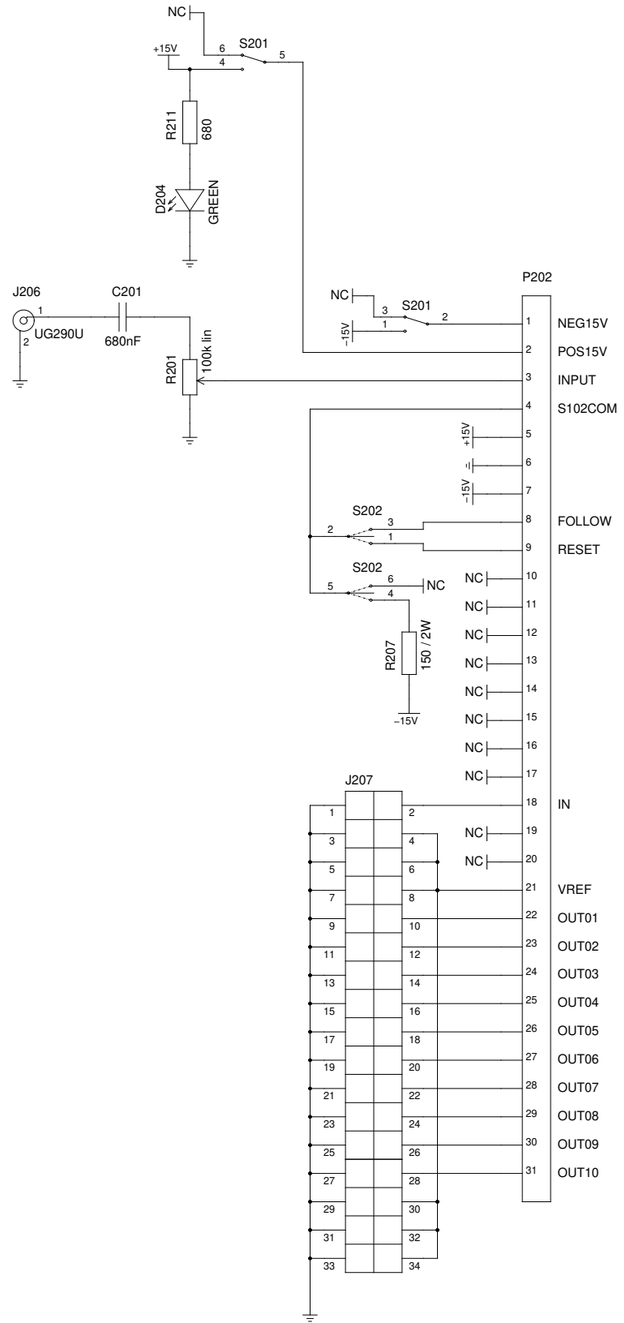
TITLE	Octave Filter – First stage of the 125 Hz module (for simulation) schematic OCTAVE_FILTER		
FILE:	26.000.00.02.33.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A3

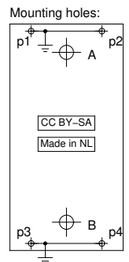
Mounting holes:



TITLE	Octave Filter Front Panel OCTAVE_FILTER	
FILE: 26.001.00.01.01.sch PAGE 01 OF 01	REVISION: 20220422 DRAWN BY: Bert Timmerman	A3



Mounting holes:



TITLE	Octave Filter front pcb (DFM) schematic OCTAVE_FILTER		
FILE:	26.002.00.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1

P300
DIN41617 31p

BUS_29
BUS_30
BUS_31

C313 10uF/63V
C314 10uF/63V

D301 1N4004
C312 100uF/63V
R308 1k

R305 1M
R306 1M

U301 CA3140E
R302 10k
R303 47k
R304 4k7

C315 100nF
C316 100nF

C302 100nF
C303 100nF
J301

C304 100nF
C305 100nF
J302

C306 100nF
C307 100nF
J303

C308 100nF
C309 100nF
J304

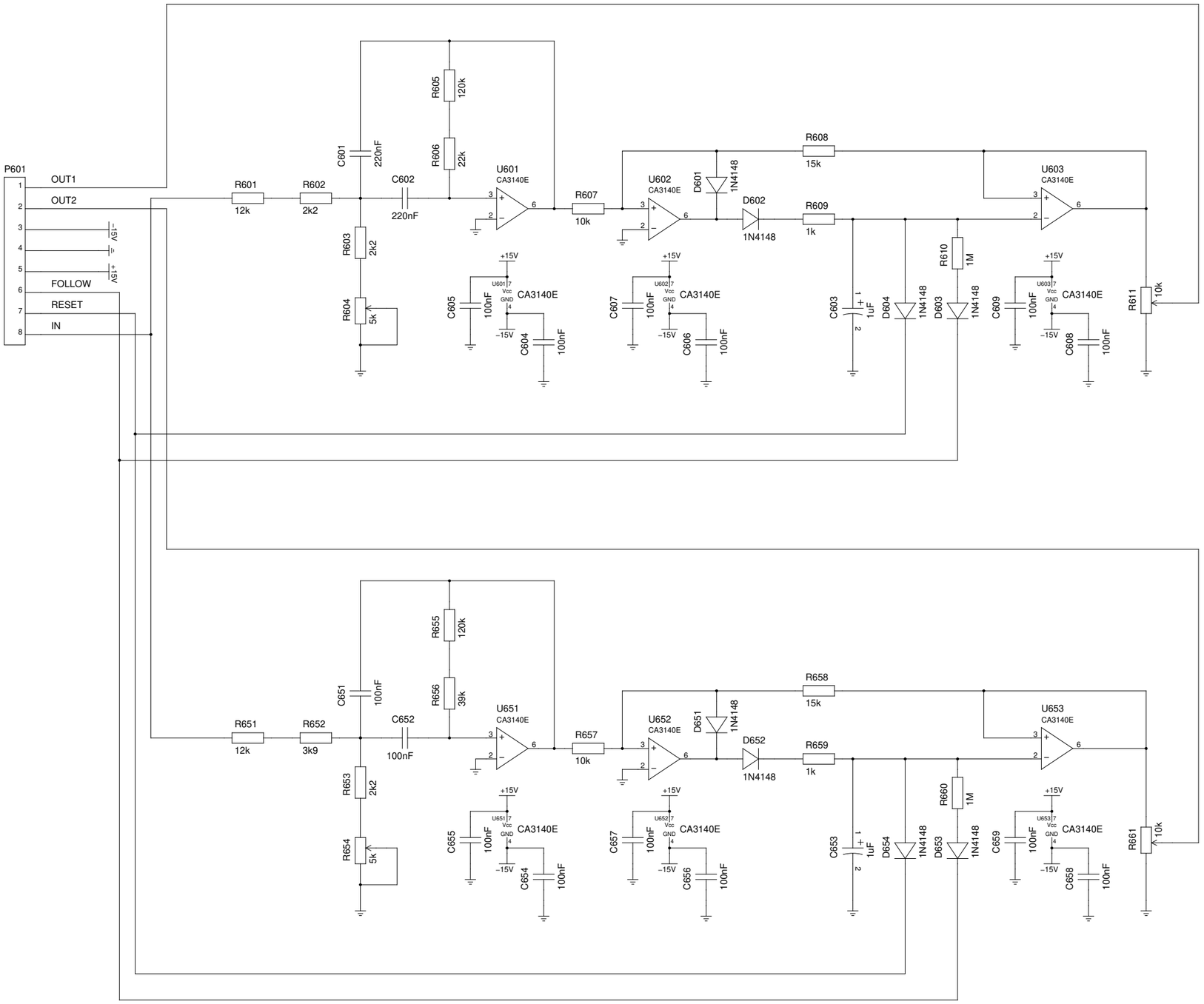
C310 100nF
C311 100nF
J305

R309 1k
D302 1N4148
R310 10k
D303 1N4148

J300
1 NEG15V
2 POS15V
3 INPUT
4 S102COM
5 +15V
6 GND
7 −15V
8 FOLLOW
9 RESET
10 NC
11 NC
12 NC
13 NC
14 NC
15 NC
16 NC
17 NC
18 IN
19 NC
20 NC
21 VREF
22 OUT01
23 OUT02
24 OUT03
25 OUT04
26 OUT05
27 OUT06
28 OUT07
29 OUT08
30 OUT09
31 OUT10

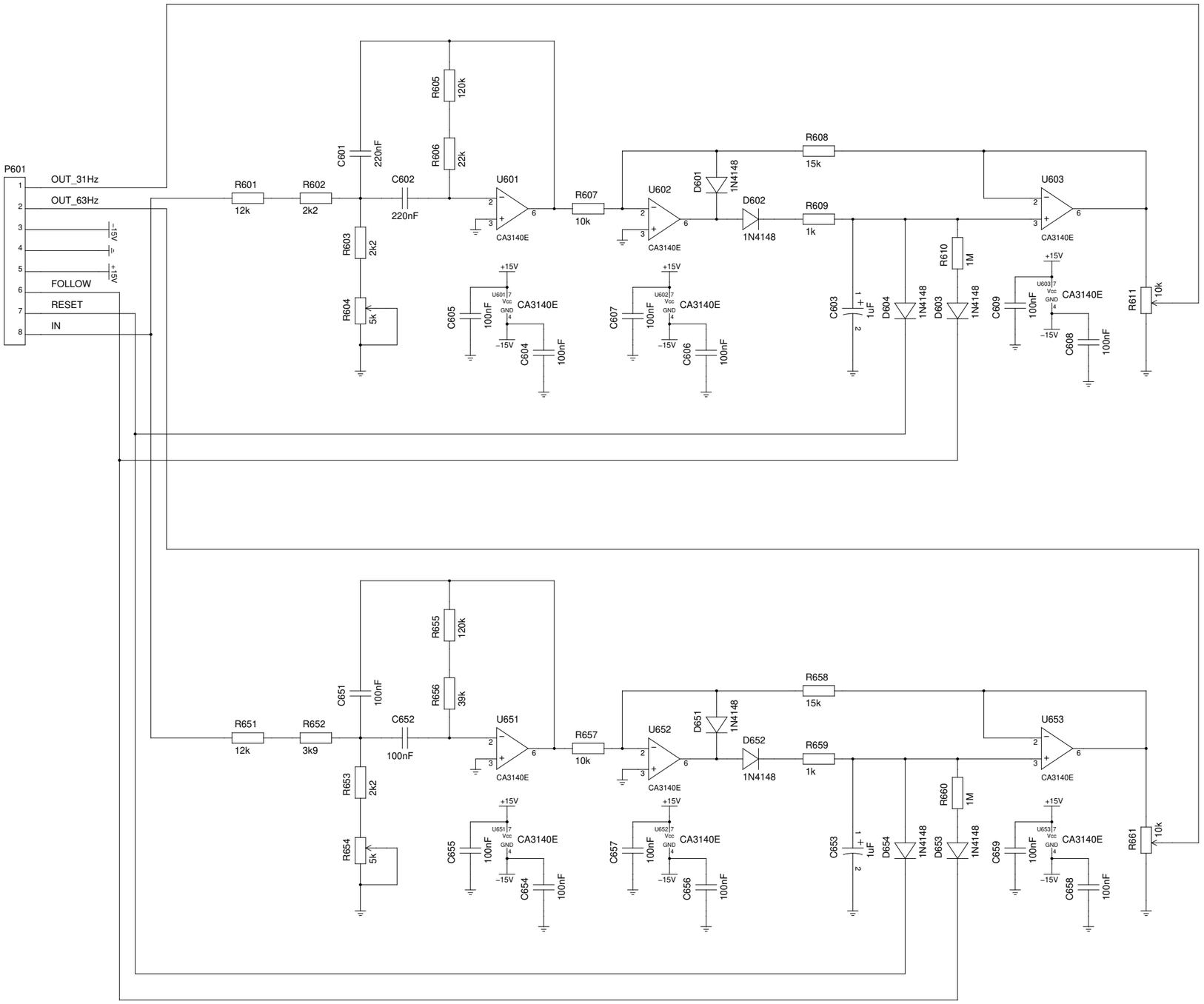
Mounting holes:
p1 p2 B A
p3 p4 C GND

Octave Filter – Main pcb (DFM)
schematic
TITLE OCTAVE_FILTER
FILE: 26.003.00.01.01.sch
PAGE 01 OF 01
REVISION: 20220422
DRAWN BY: Bert Timmerman
A1



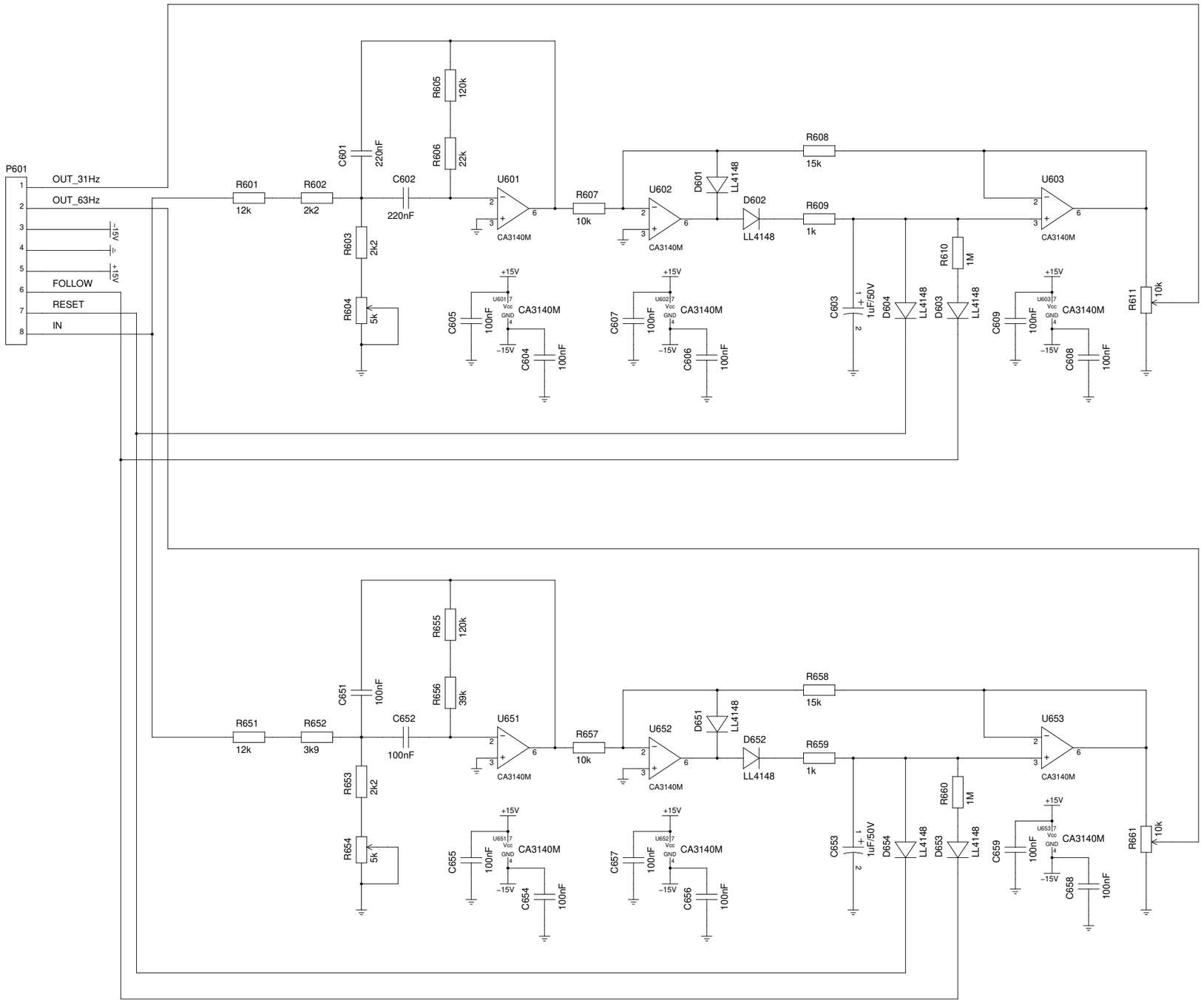
TITLE	Octave Filter 31.5 Hz and 63 Hz module (DFM – PTH) schematic OCTAVE_FILTER		
FILE:	26.006.00.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1



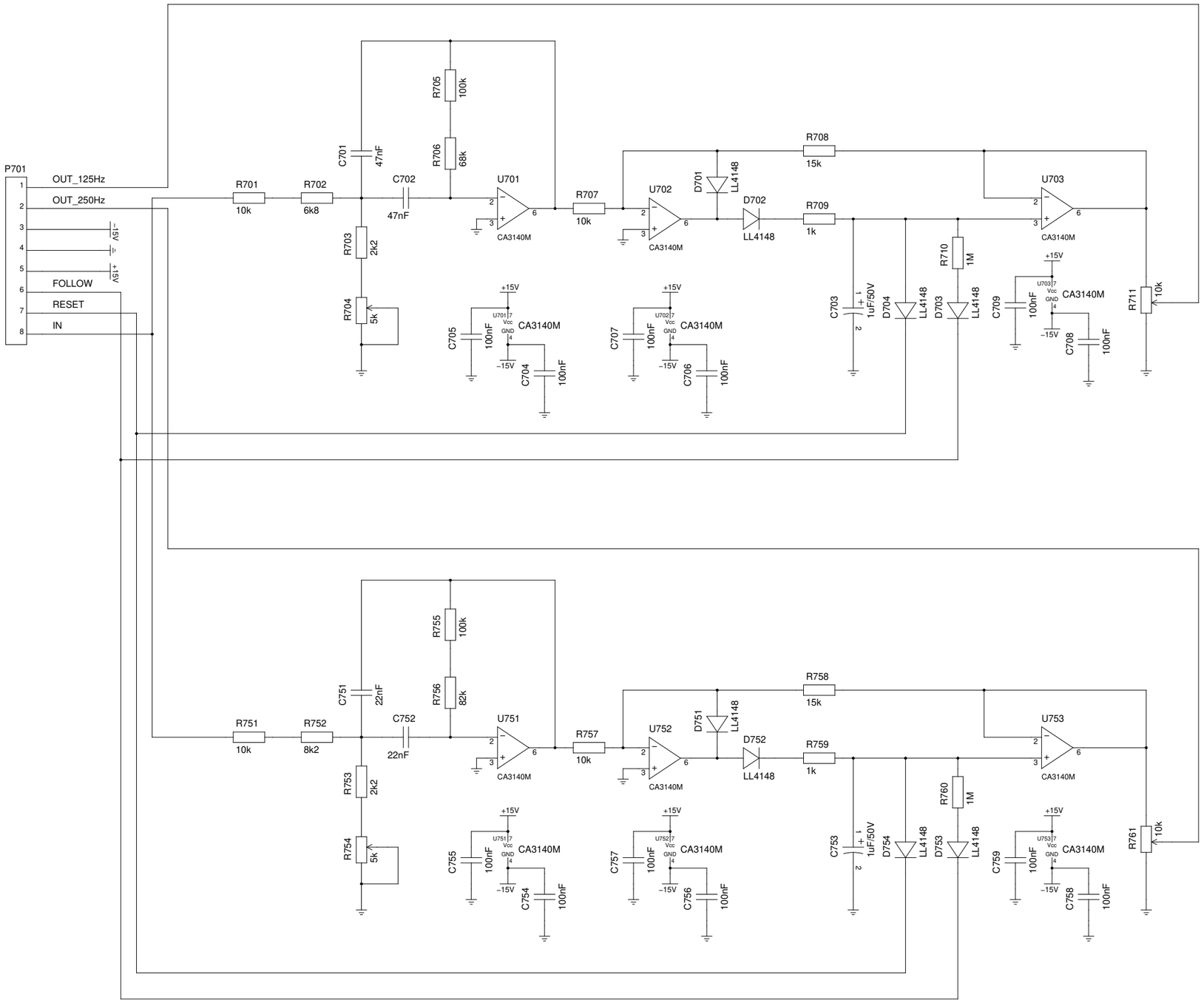
TITLE	Octave Filter 31.5 Hz and 63 Hz module (DFM – PTH) schematic OCTAVE_FILTER		
FILE:	26.006.01.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1



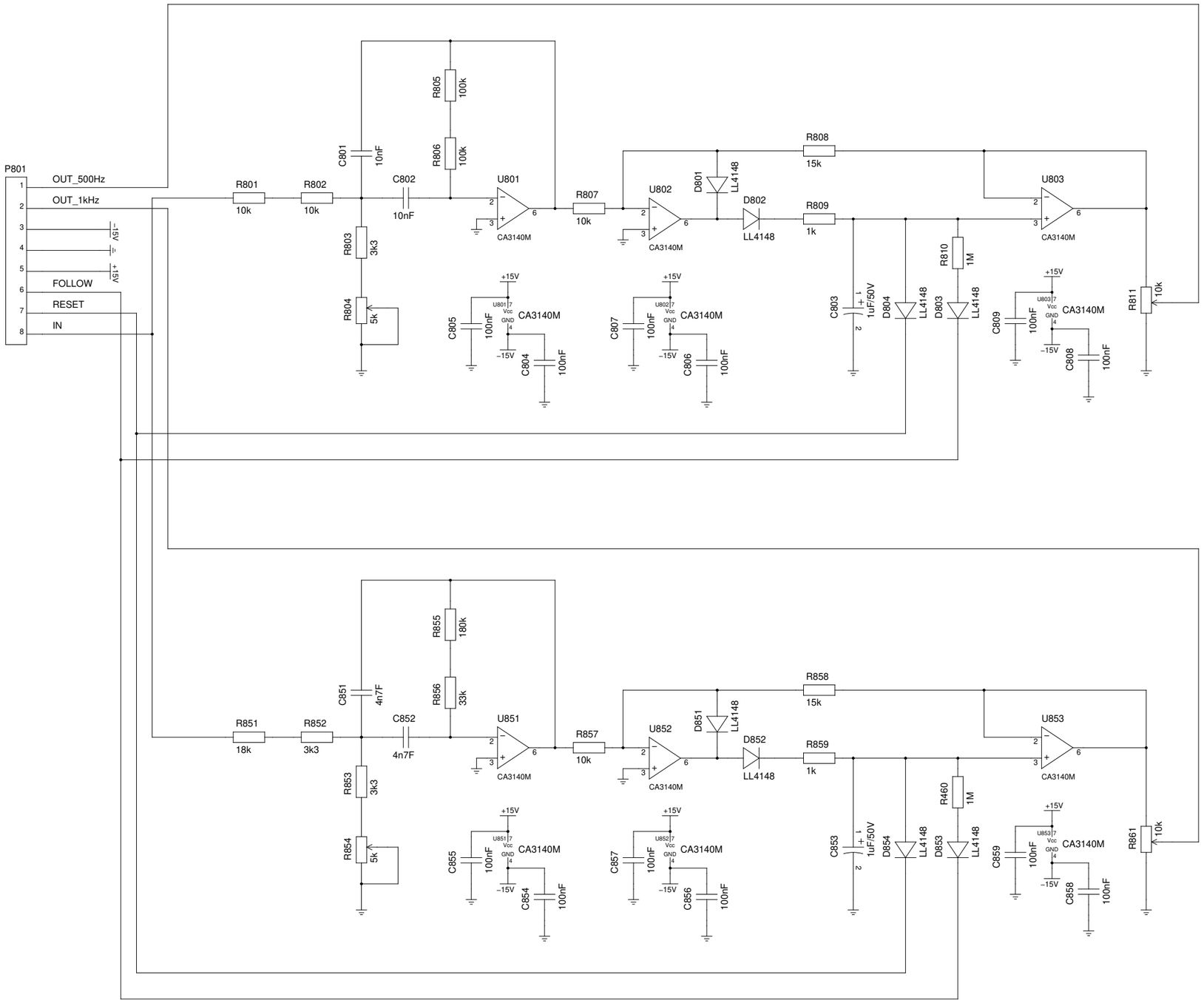
TITLE	Octave Filter 31.5 Hz and 63 Hz module (DFM – PTH+SMT) schematic OCTAVE_FILTER		
FILE:	26.006.02.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1



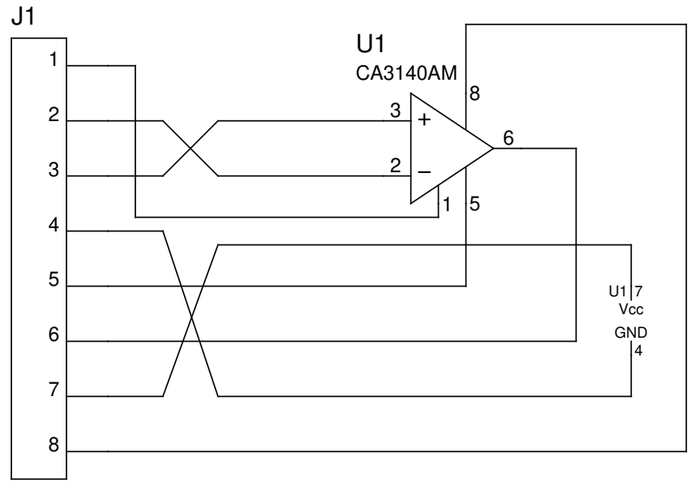
TITLE	Octave Filter 125 Hz and 250 Hz module (DFM – PTH+SMT) schematic OCTAVE_FILTER		
FILE:	26.007.01.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1

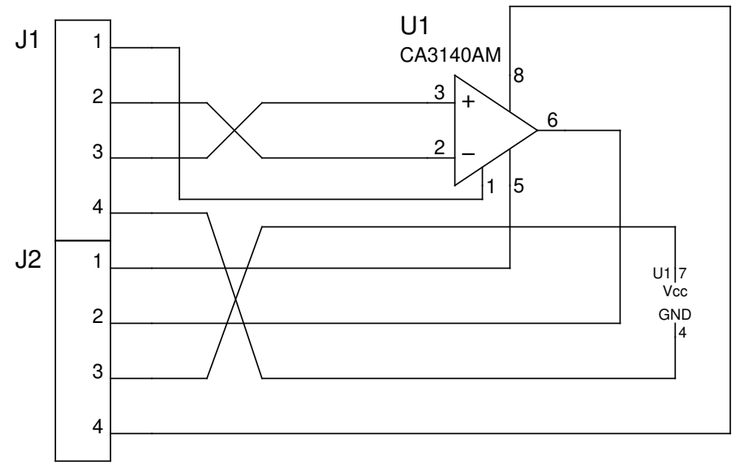


TITLE	Octave Filter 500 Hz and 1 kHz module (DFM – PTH+SMT) schematic OCTAVE_FILTER		
FILE:	26.008.01.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman

A1



TITLE	Octave Filter – CA3140M breakout pcb (DFM) schematic OCTAVE_FILTER
FILE:	26.999.00.01.01.sch
PAGE	01 OF 01
REVISION:	20220422
DRAWN BY:	Bert Timmerman



Octave Filter – CA3140M breakout pcb (DFM)
schematic

TITLE OCTAVE_FILTER

FILE:	26.999.01.01.01.sch	REVISION:	20220422
PAGE	01 OF 01	DRAWN BY:	Bert Timmerman