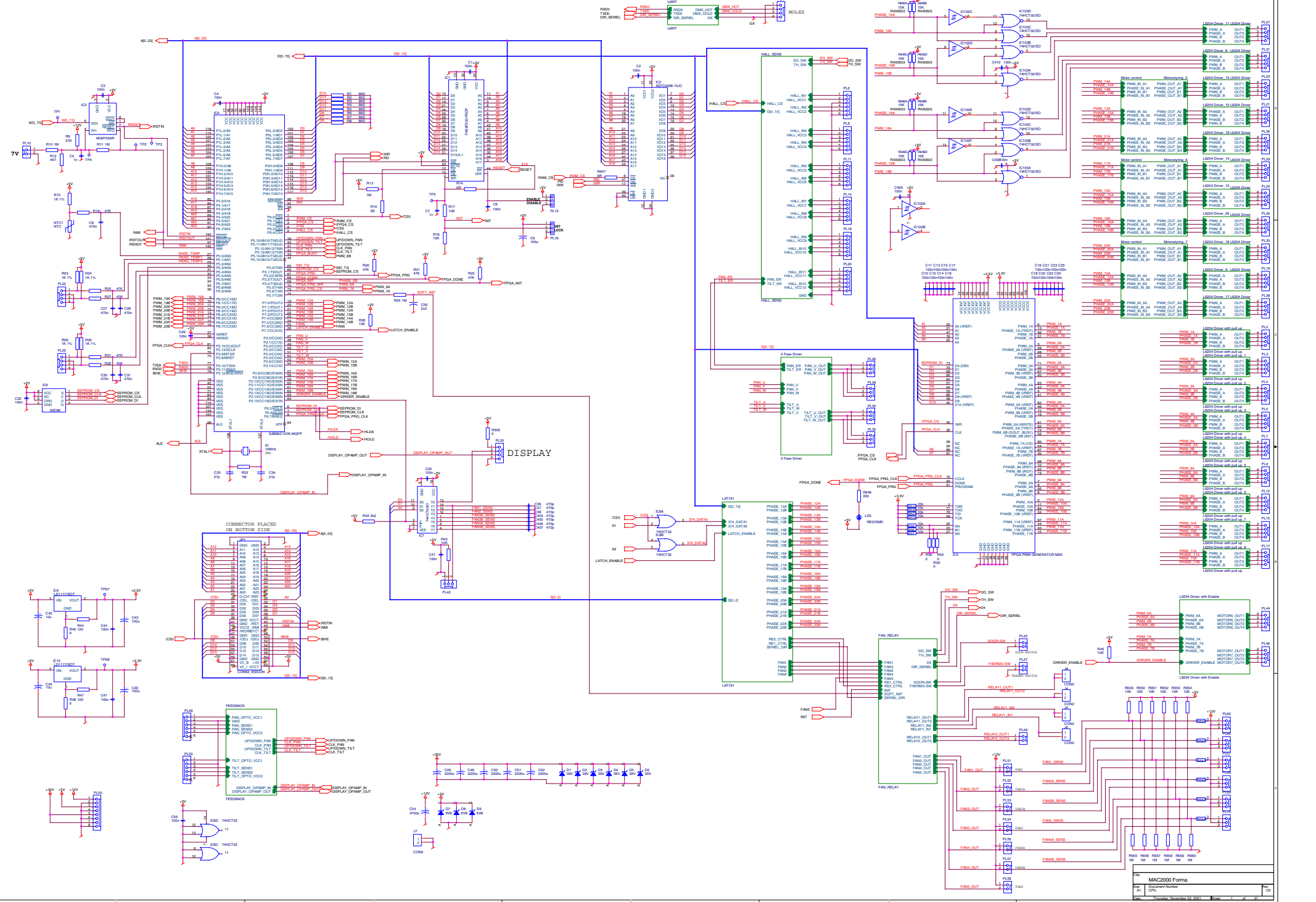
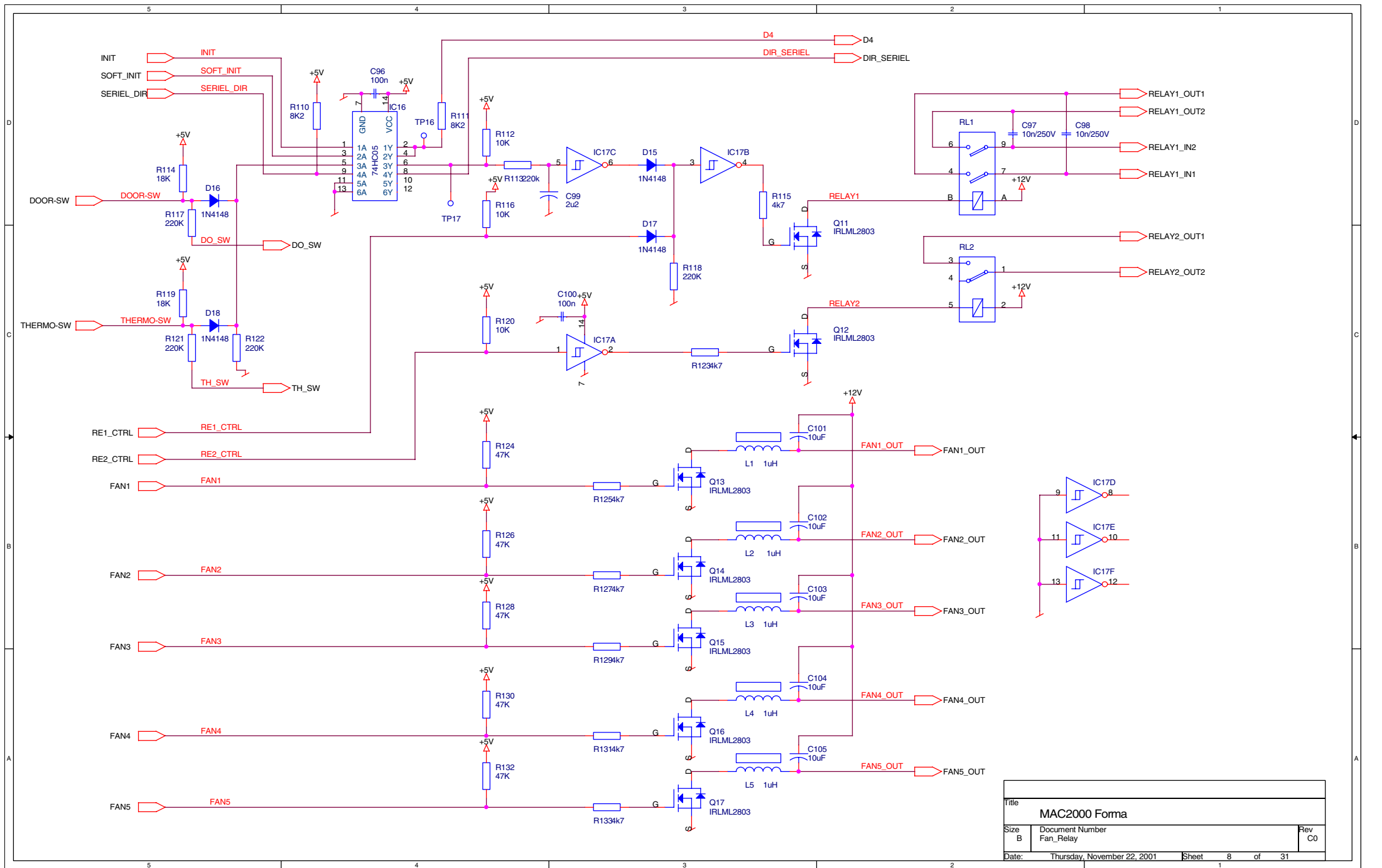


|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
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| Date:         | Thursday, November 22, 2001 | Sheet 23 of 31 |

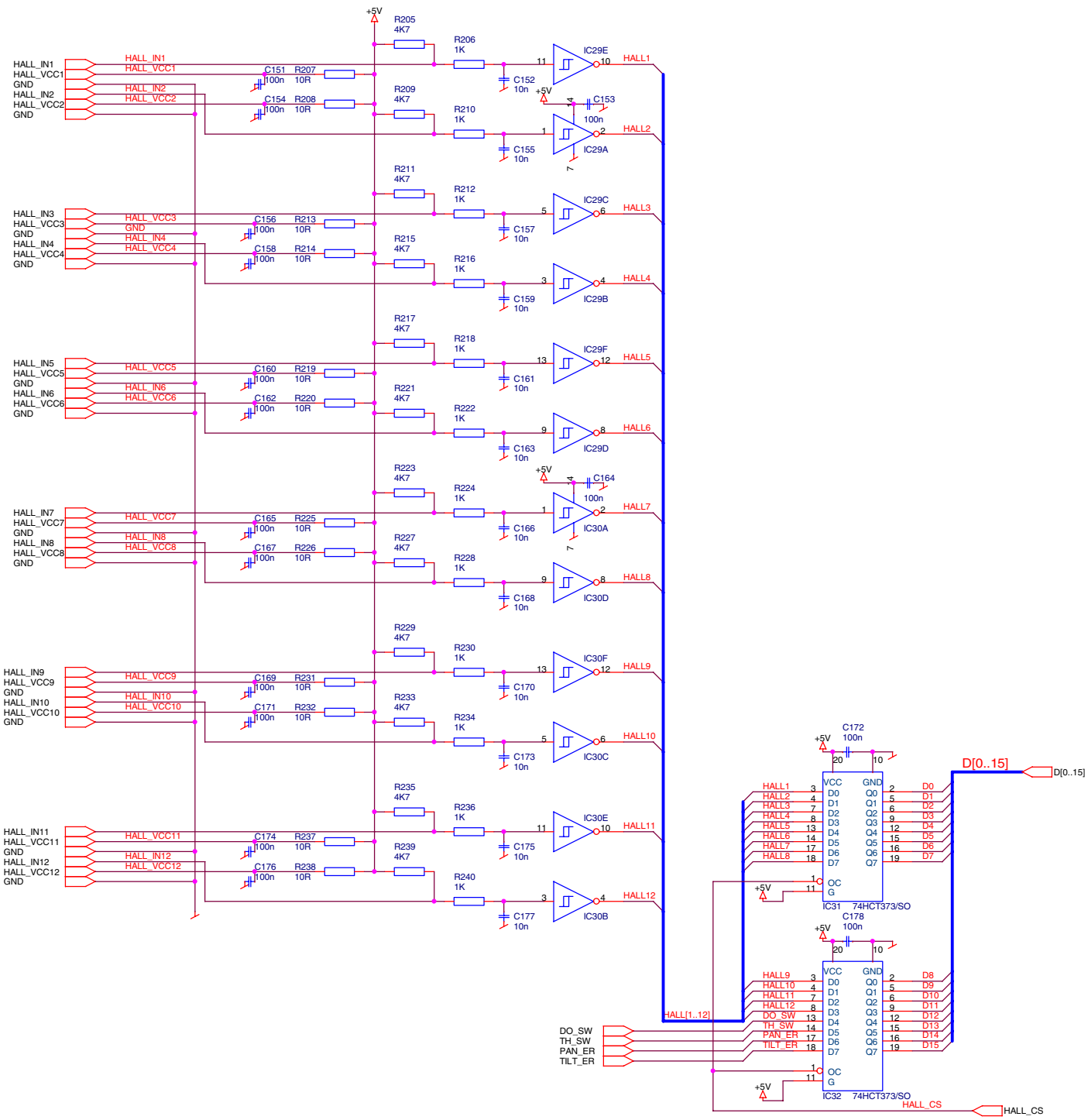


| MAC2000 Form A |                  |
|----------------|------------------|
| 1              | Component Number |
| 2              | CPU              |
| 3              | IO               |
| 4              | IO               |
| 5              | IO               |
| 6              | IO               |
| 7              | IO               |
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| 99             | IO               |
| 100            | IO               |



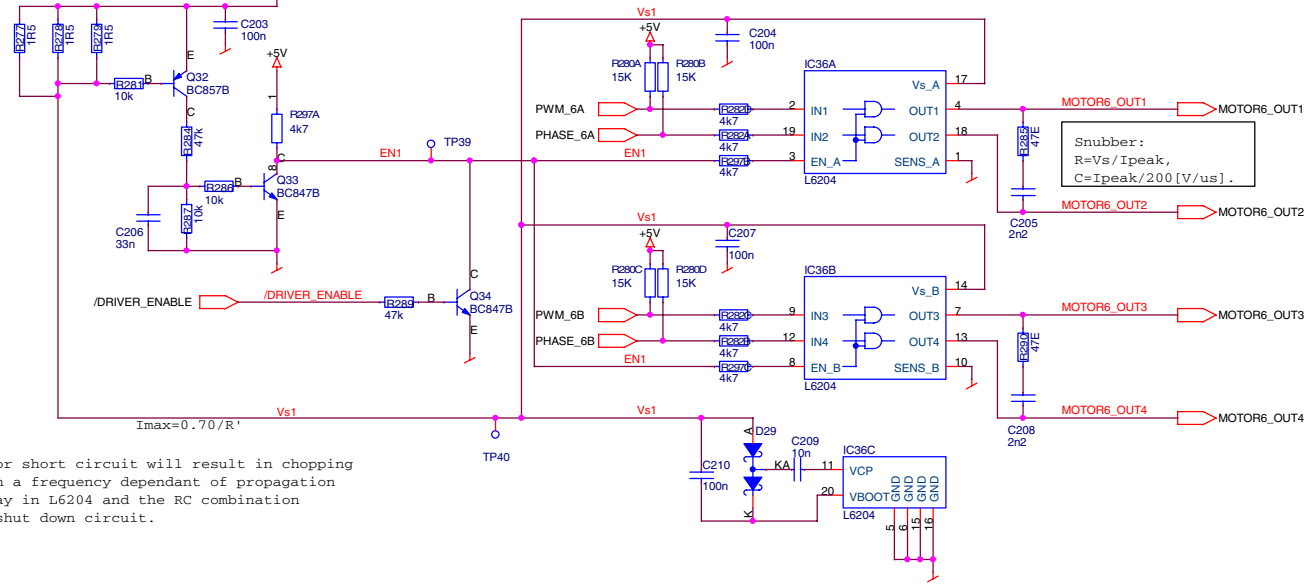
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|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| B             | Fan_Relay                   | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 8 of 31 |





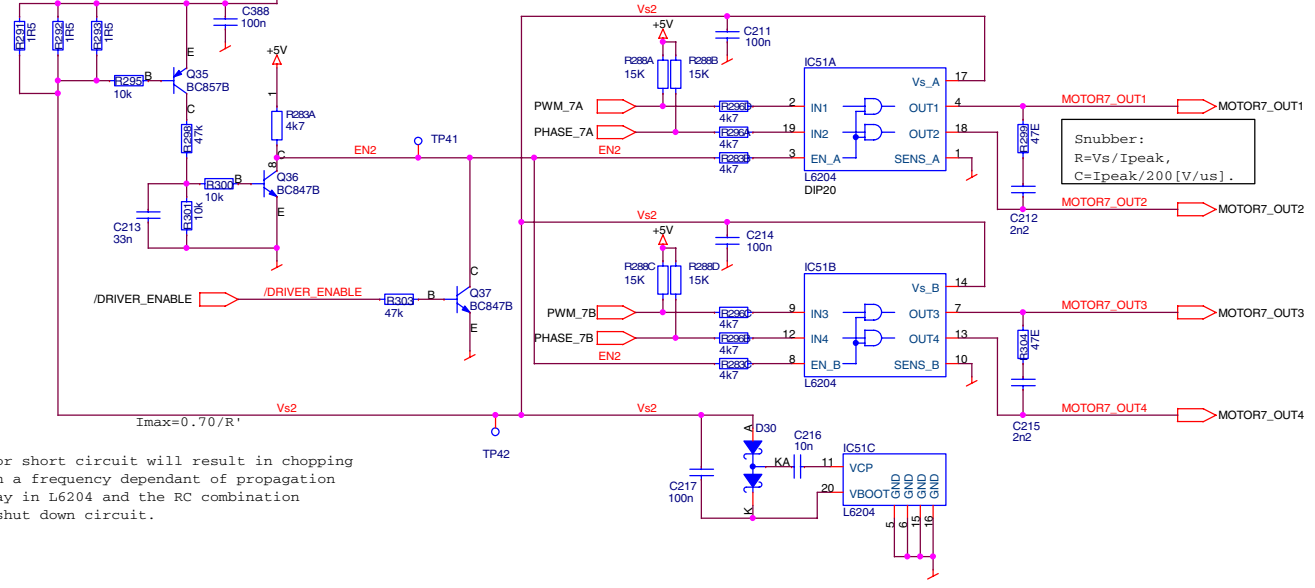
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|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A3            | Hall Sens                   | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 13 of 31 |

CURRENT LIMMITER WITH DELAYED SHUTDOWN



Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

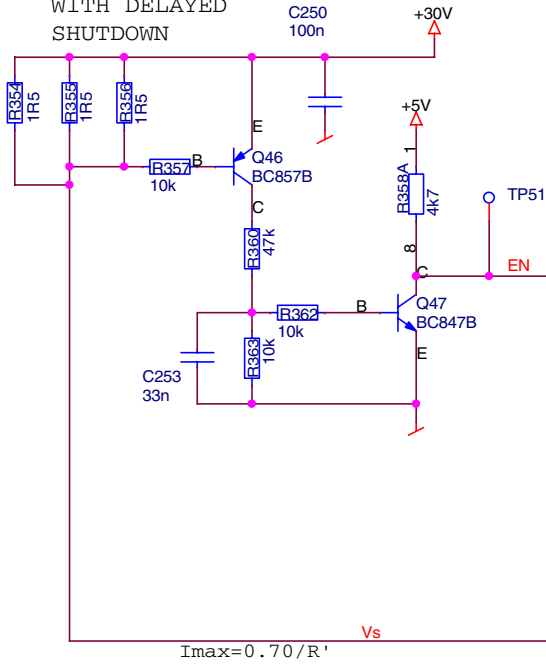
CURRENT LIMMITER WITH DELAYED SHUTDOWN



Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

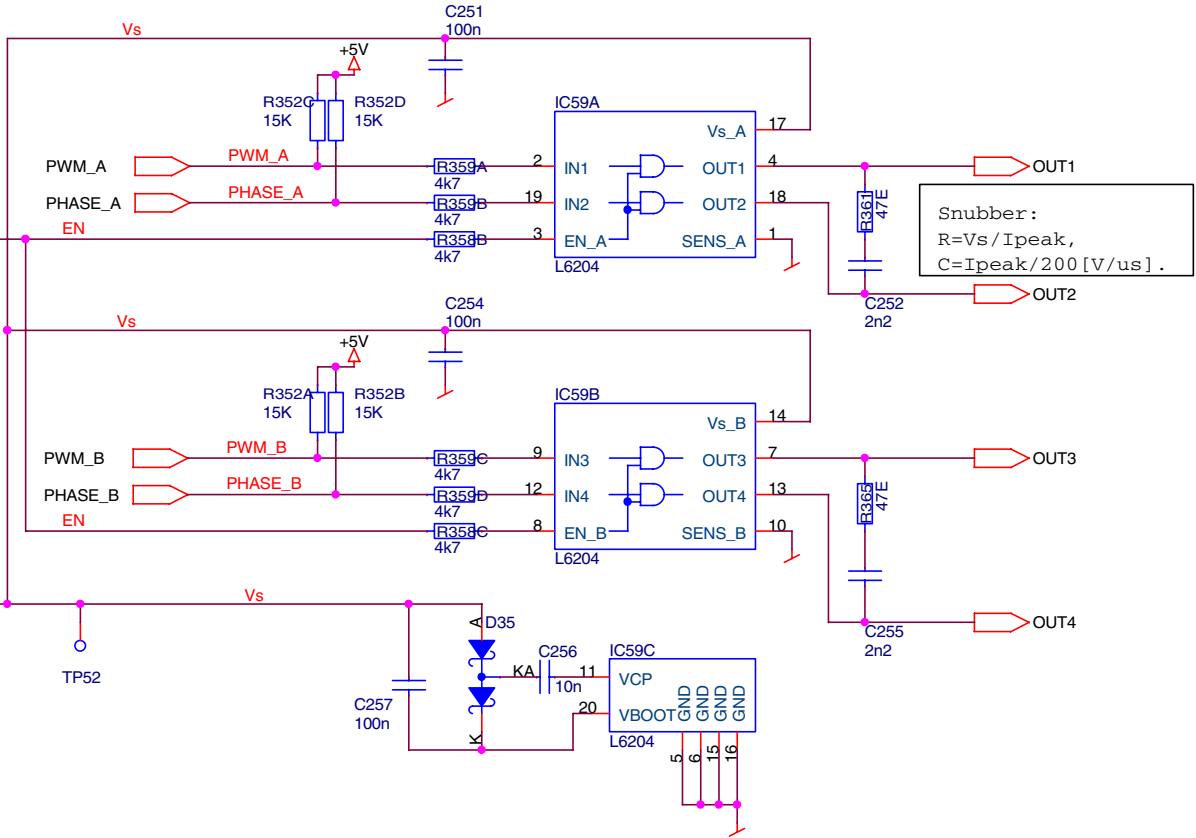
|                                      |   |           |
|--------------------------------------|---|-----------|
| Title<br>MAC2000 Forma               |   |           |
| Size<br>A3                           | Document Number<br>L6204 Driver with Enable | Rev<br>Co |
| Date:<br>Thursday, November 22, 2001 | Sheet<br>25                                 | of<br>31  |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

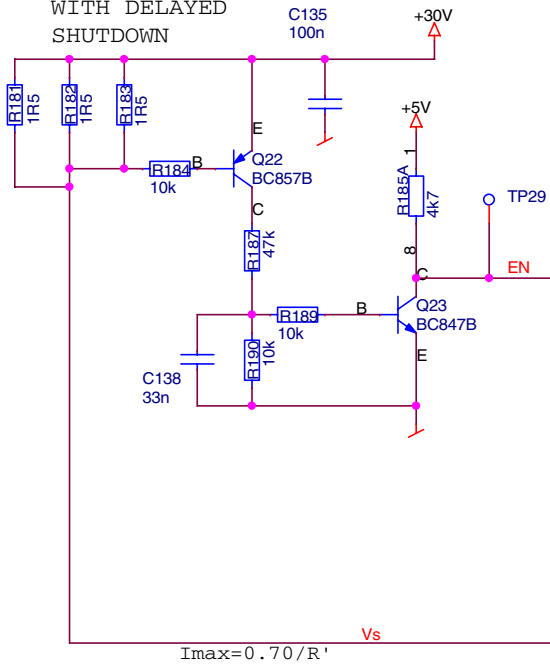


Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|              |                             |               |
|--------------|-----------------------------|---------------|
| Title        |                             |               |
| MAC2000Forma |                             |               |
| Size         | Document Number             | Rev           |
| A4           | L6204 Driver with pull up   | C0            |
| Date:        | Thursday, November 22, 2001 | Sheet 5 of 31 |

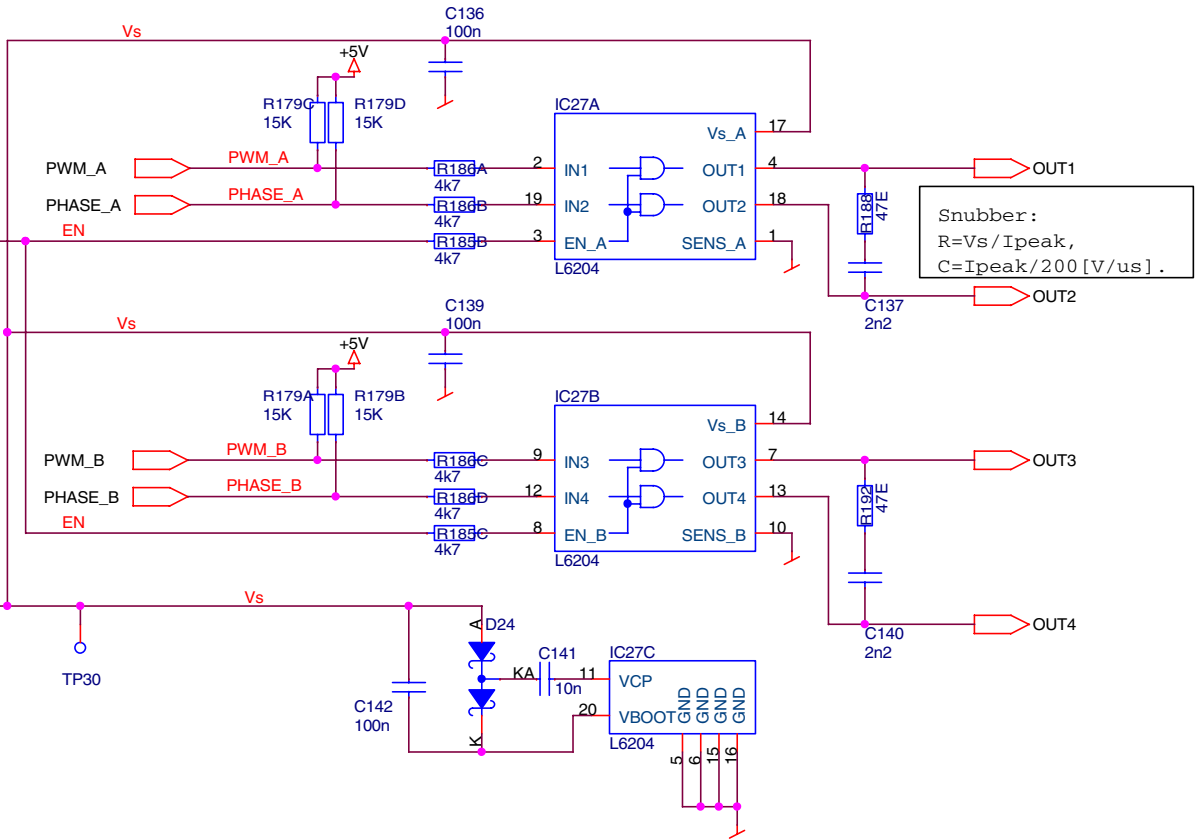


CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$$I_{max} = 0.70 / R'$$

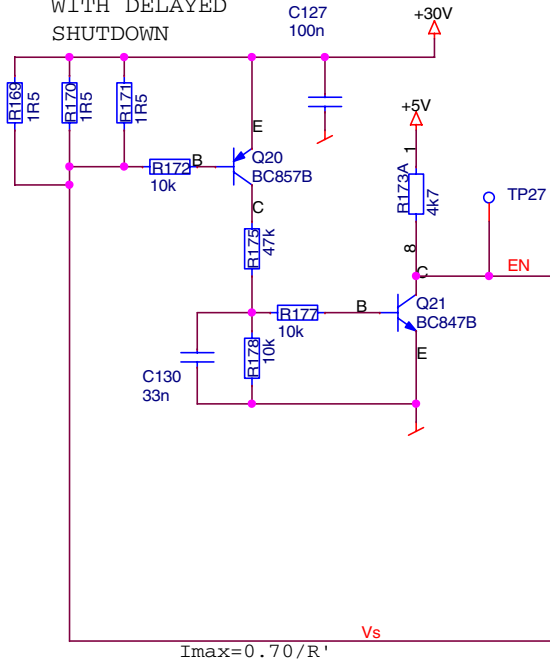
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



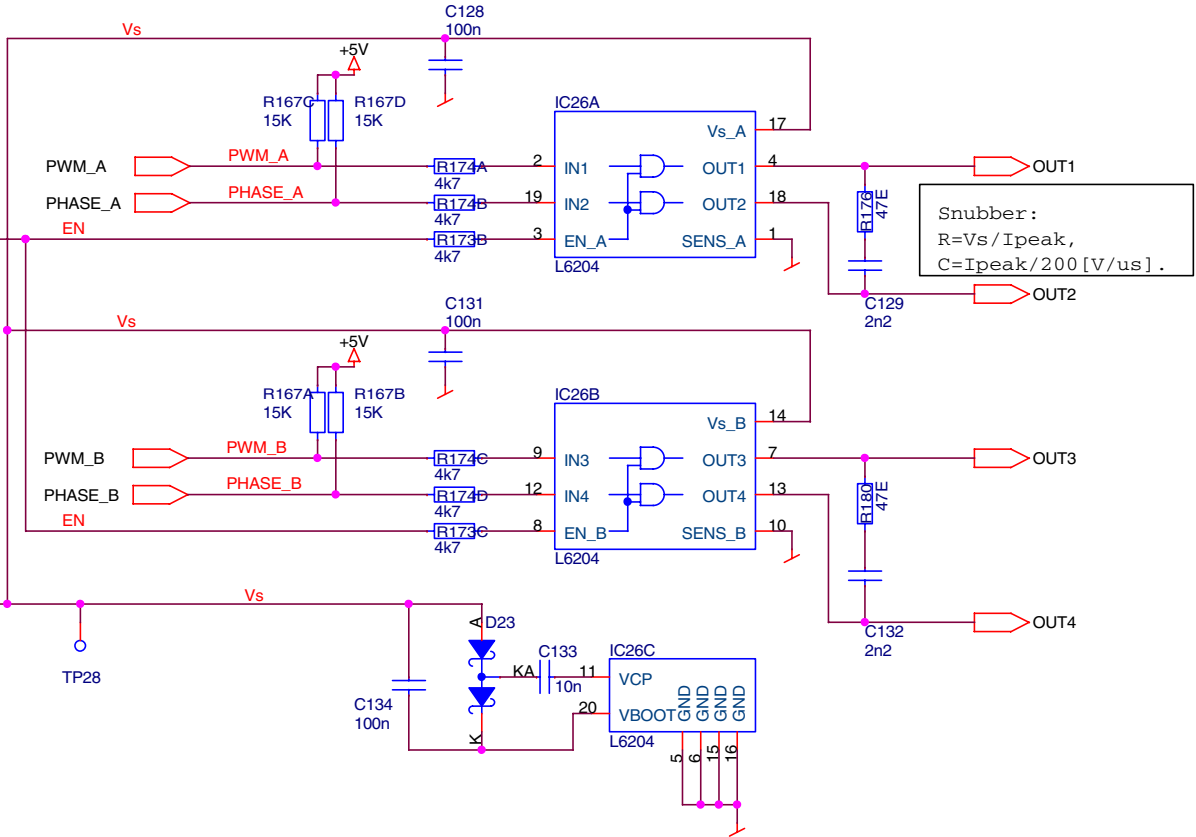
Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|              |                             |                |
|--------------|-----------------------------|----------------|
| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 14 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



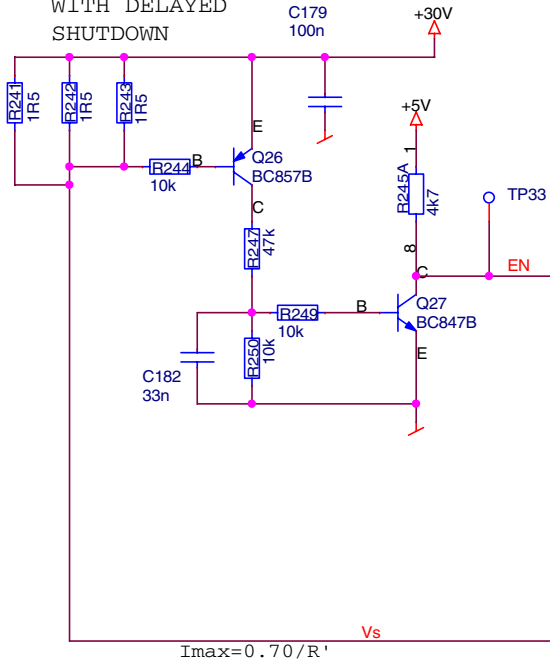
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
R=Vs/Ipeak,  
C=Ipeak/200 [V/us].

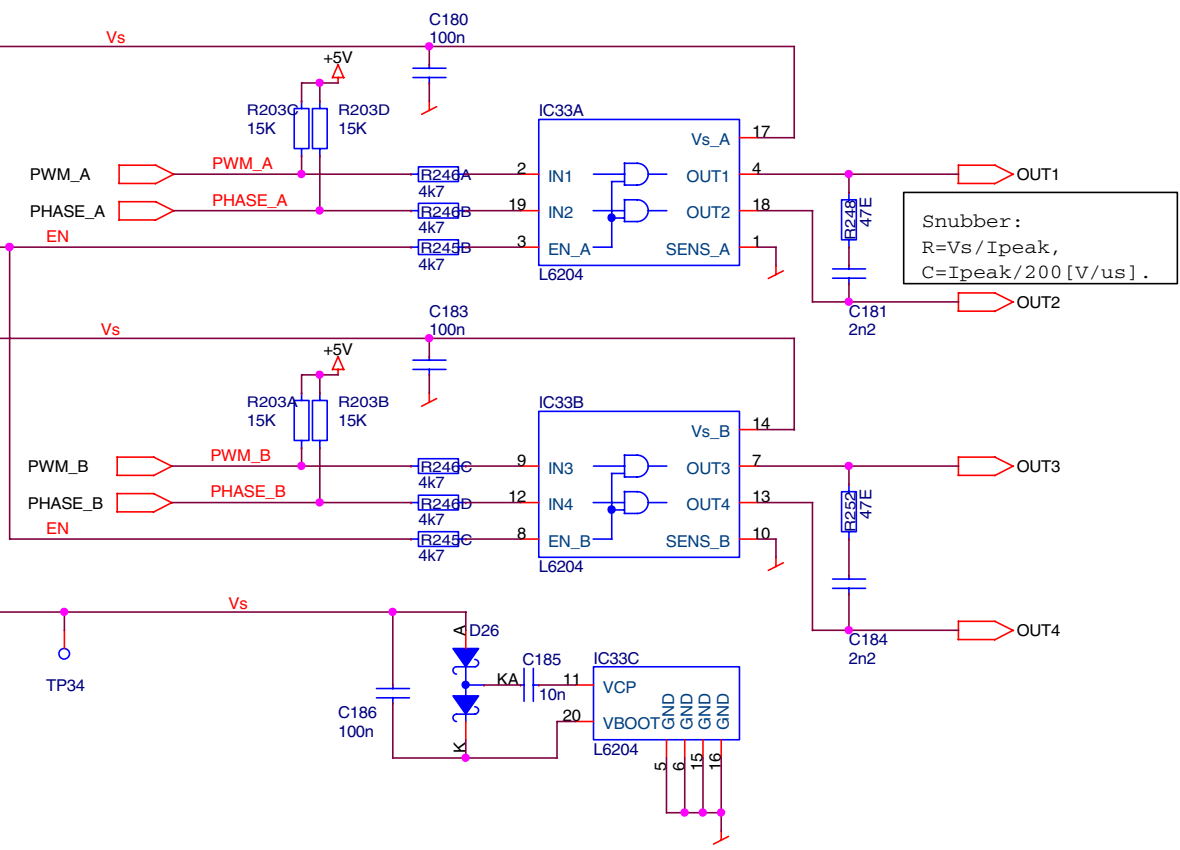
|              |                             |                |
|--------------|-----------------------------|----------------|
| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 17 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

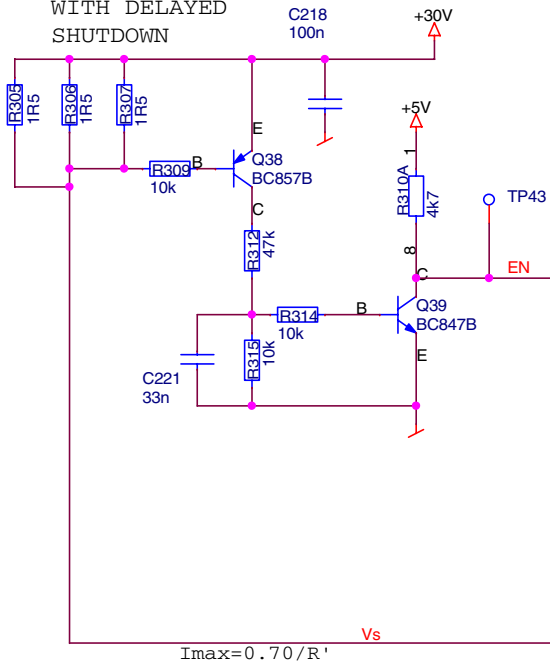
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

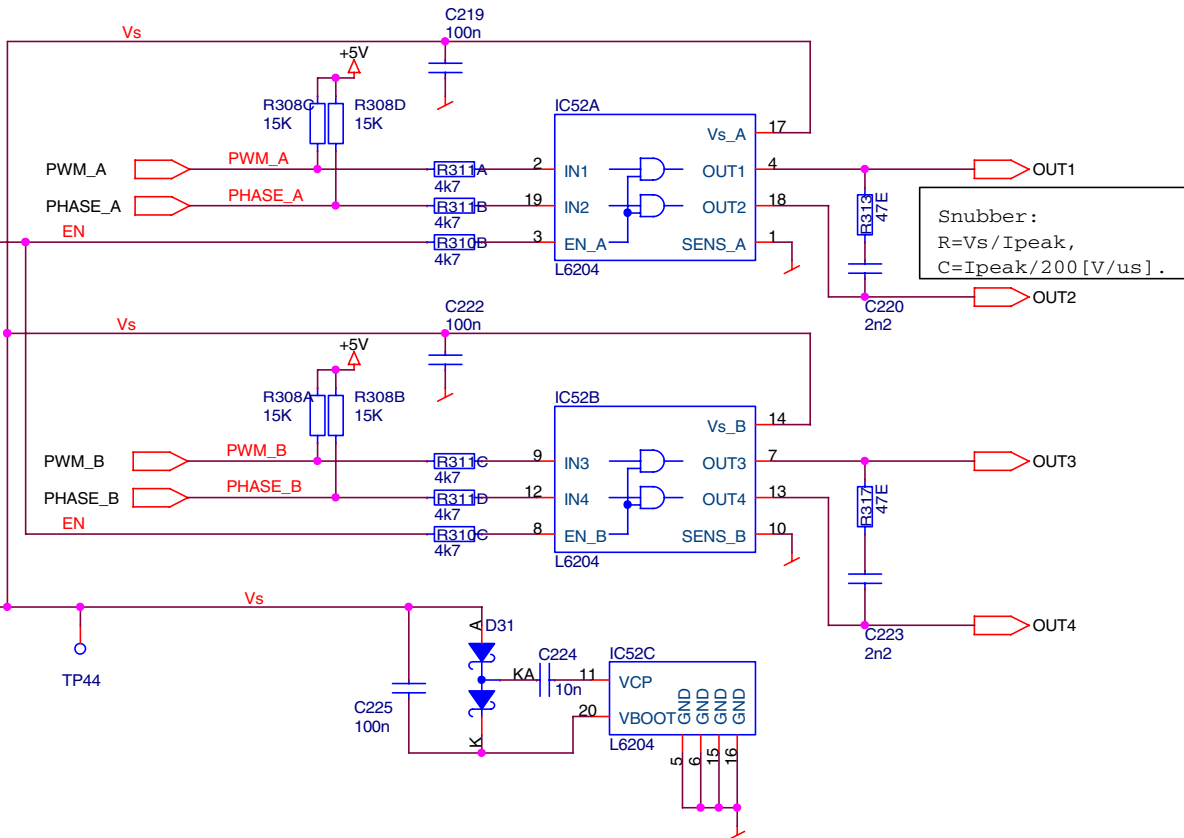
|              |                             |                |
|--------------|-----------------------------|----------------|
| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 18 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

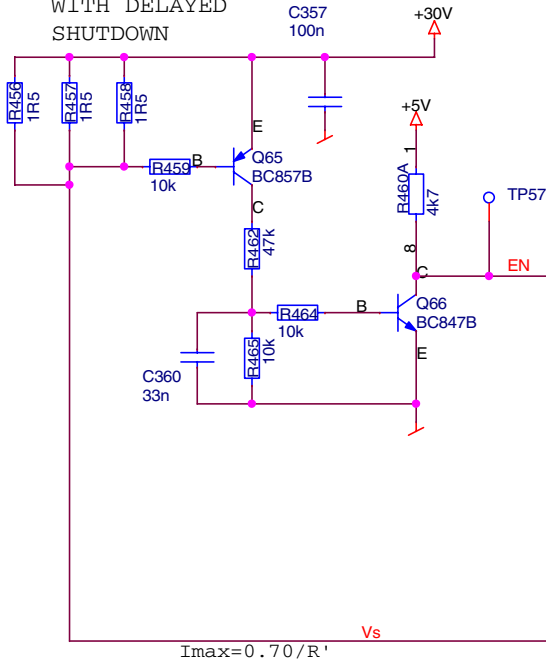
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



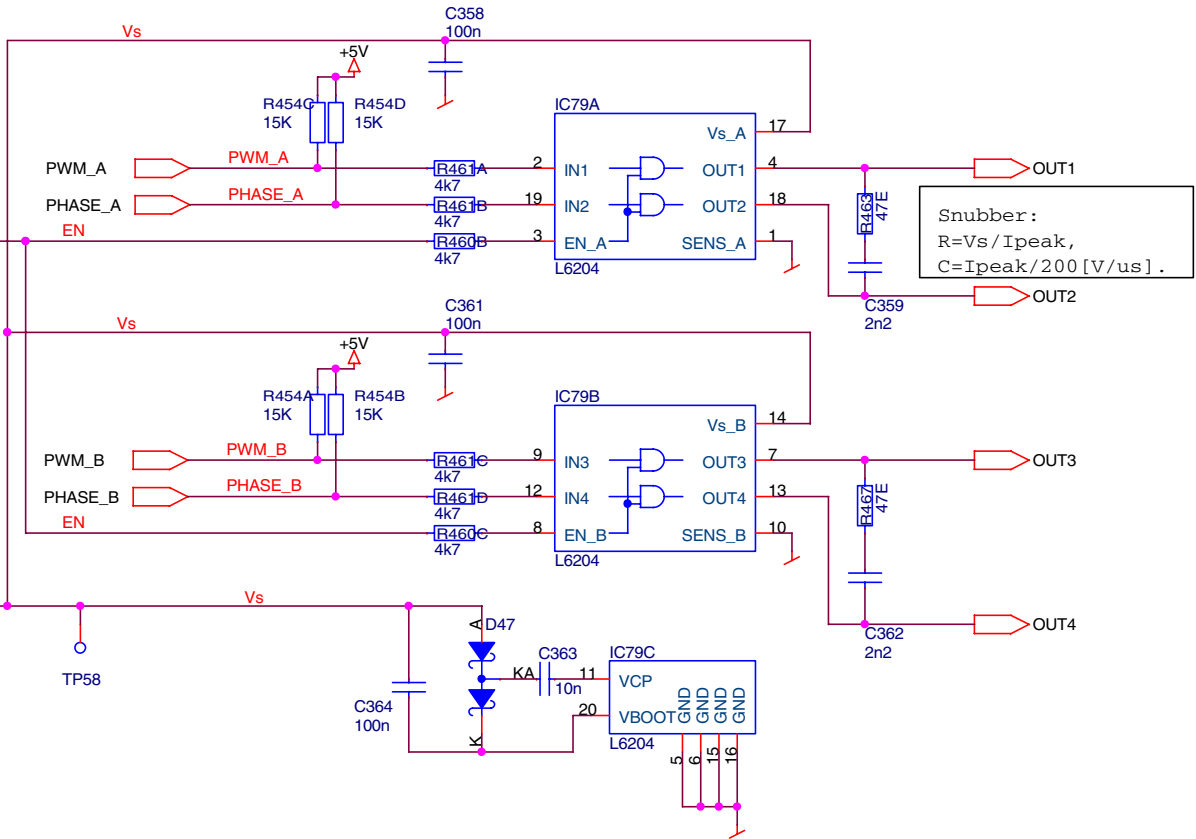
Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|              |                             |                |
|--------------|-----------------------------|----------------|
| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 20 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



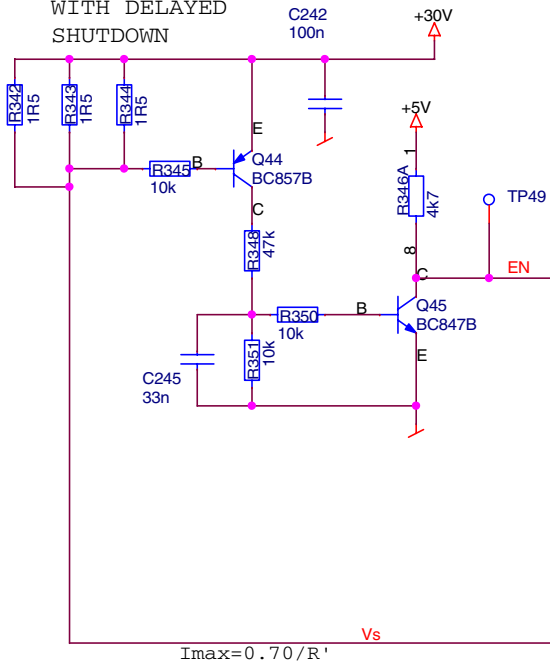
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



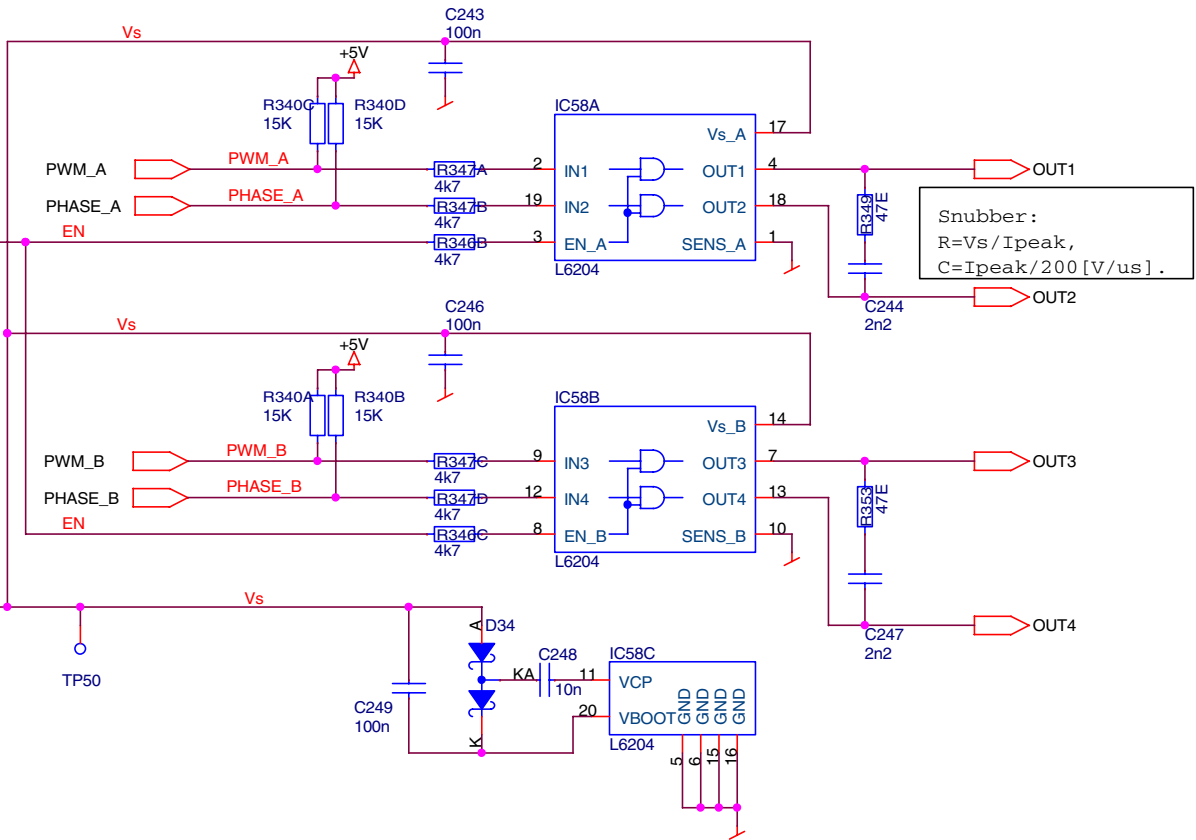
Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

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| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 21 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN

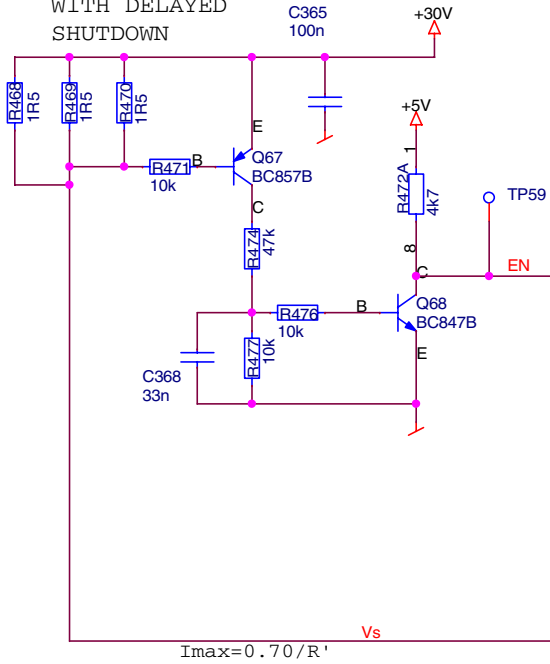


Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

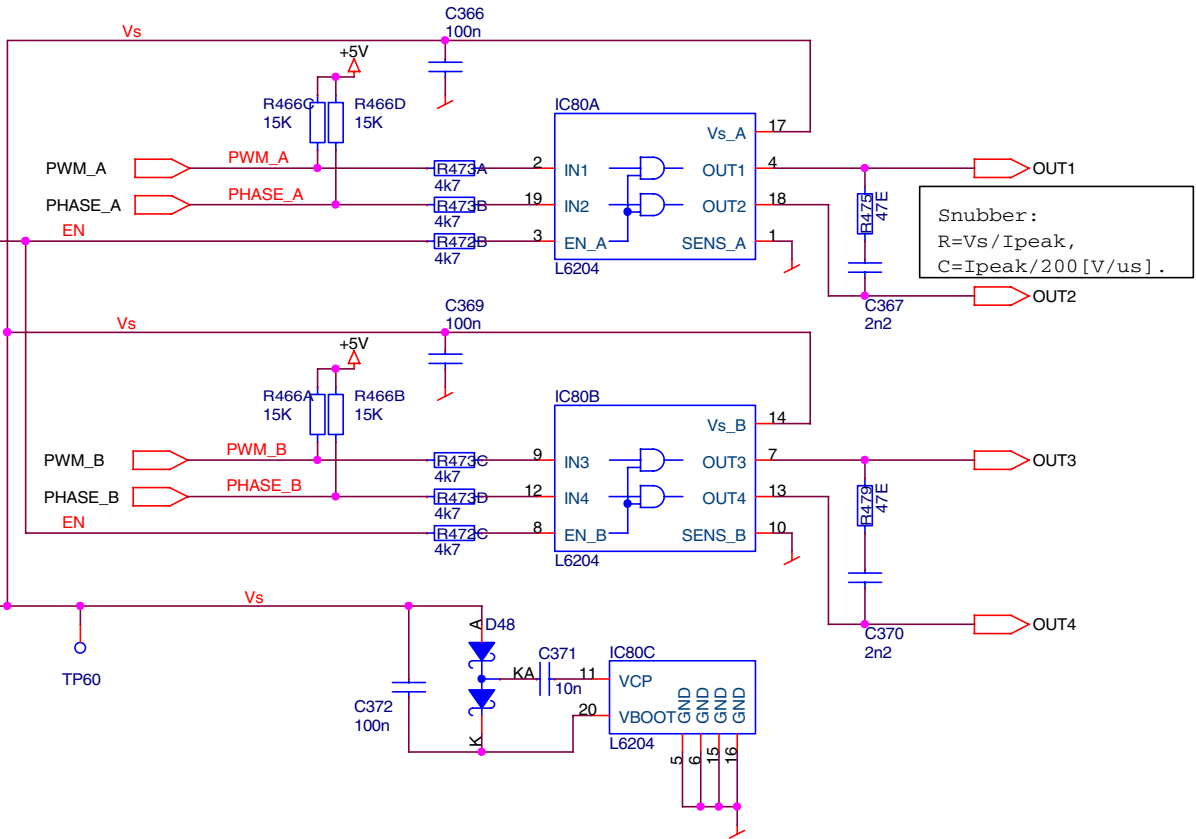


|              |                             |                |
|--------------|-----------------------------|----------------|
| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 22 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



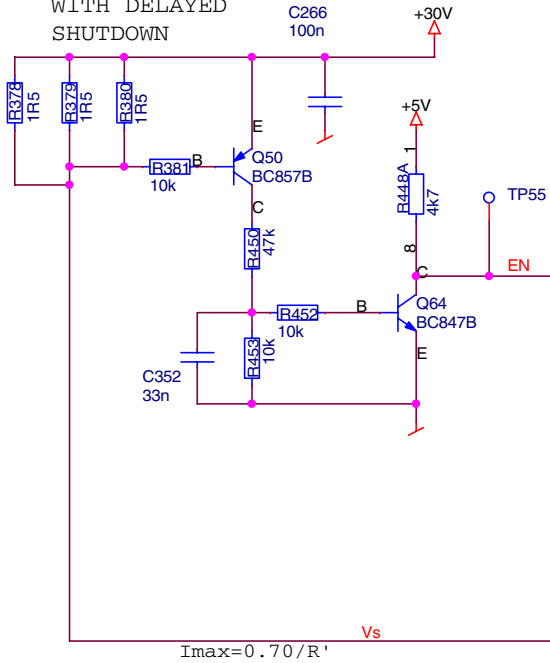
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R=V_s/I_{peak}$ ,  
 $C=I_{peak}/200 [V/us]$ .

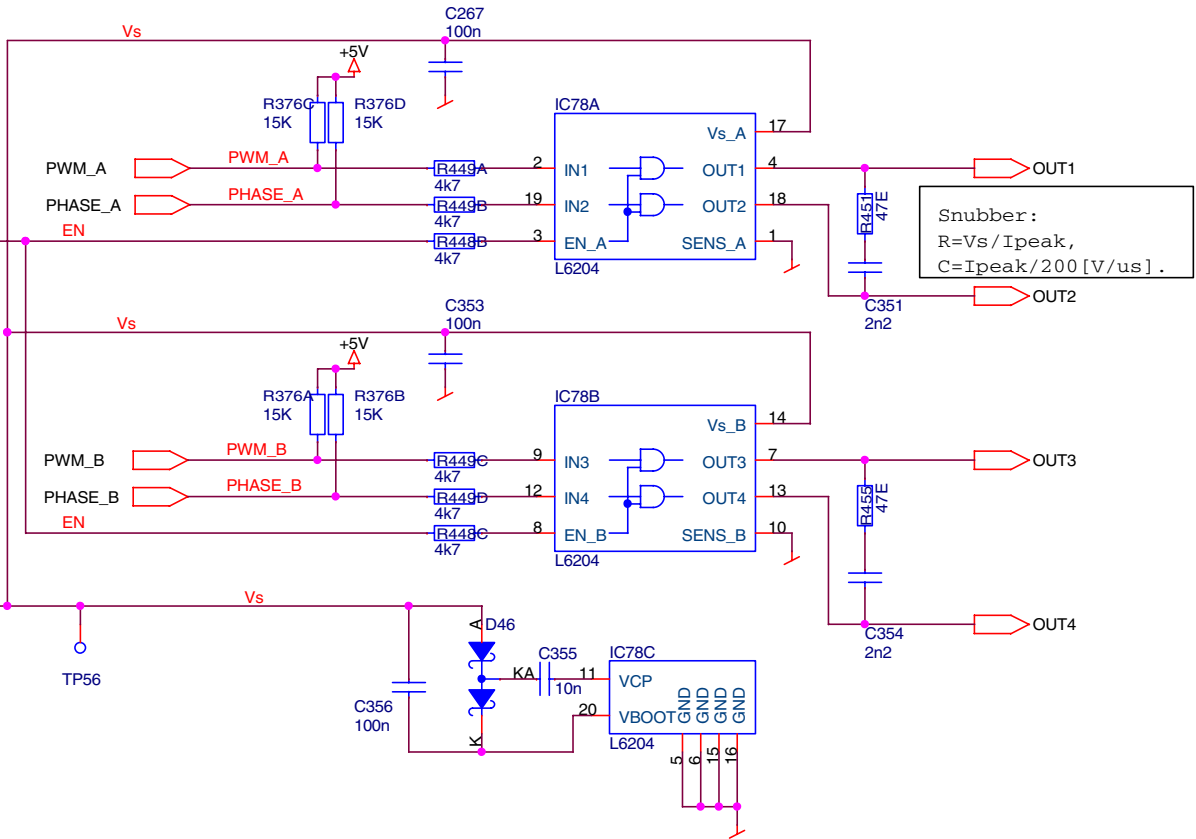
|              |                             |                |
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| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 24 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

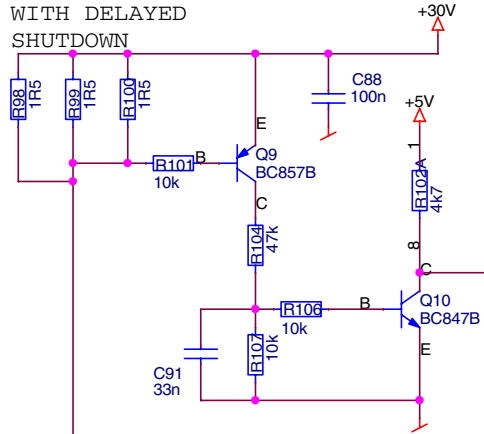


Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|              |                             |                |
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| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| A4           | L6204 Driver with pull up   | C0             |
| Date:        | Thursday, November 22, 2001 | Sheet 26 of 31 |

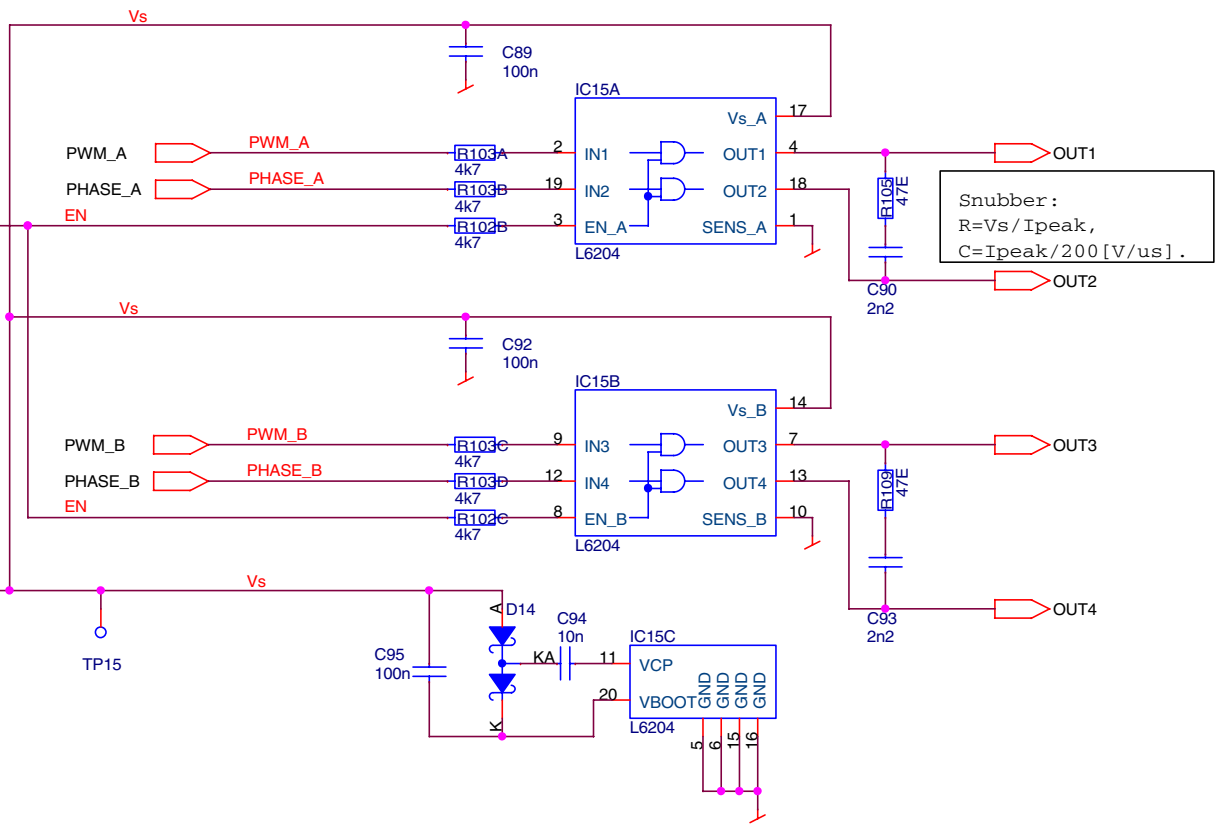


CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

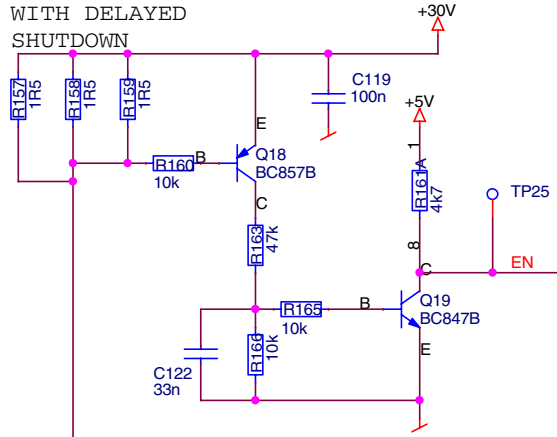
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

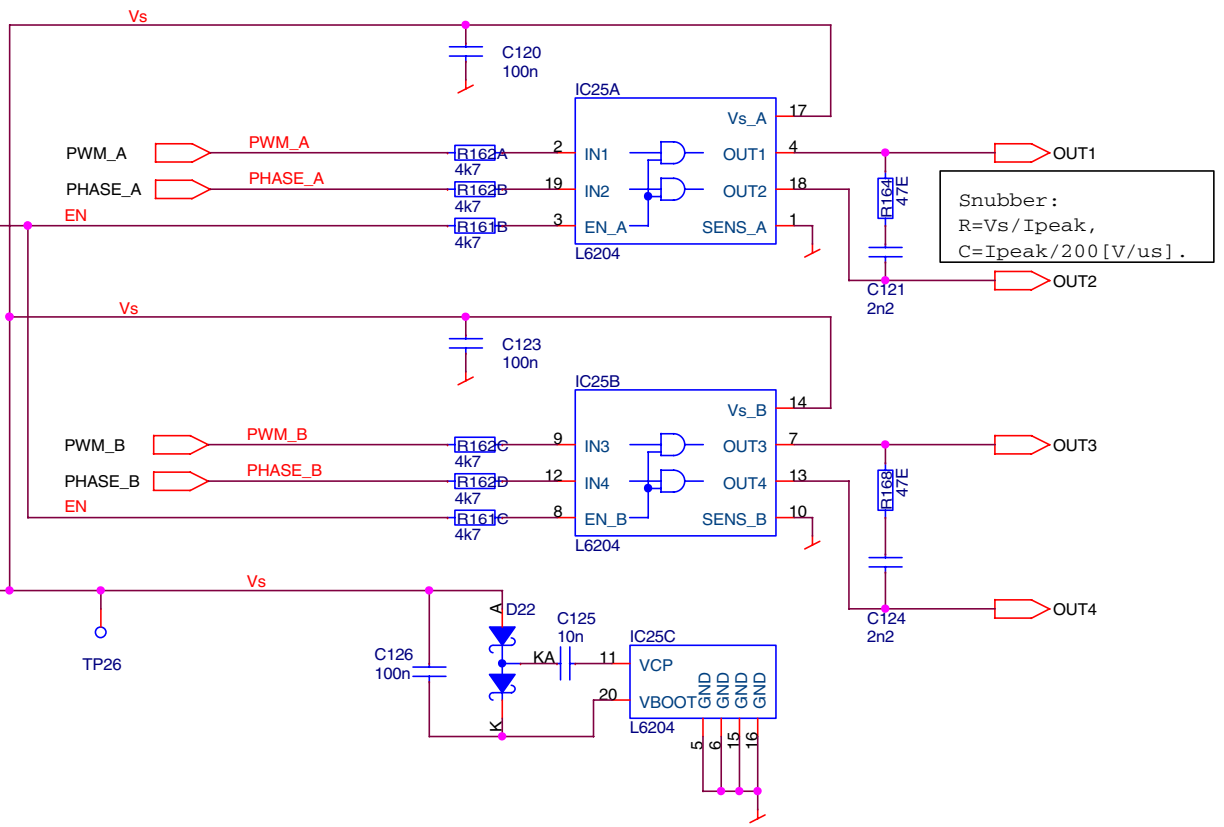
|               |                             |               |
|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| A4            | L6204 Driver                | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 7 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

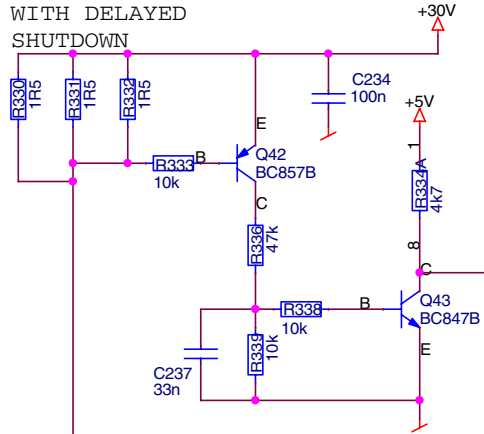
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

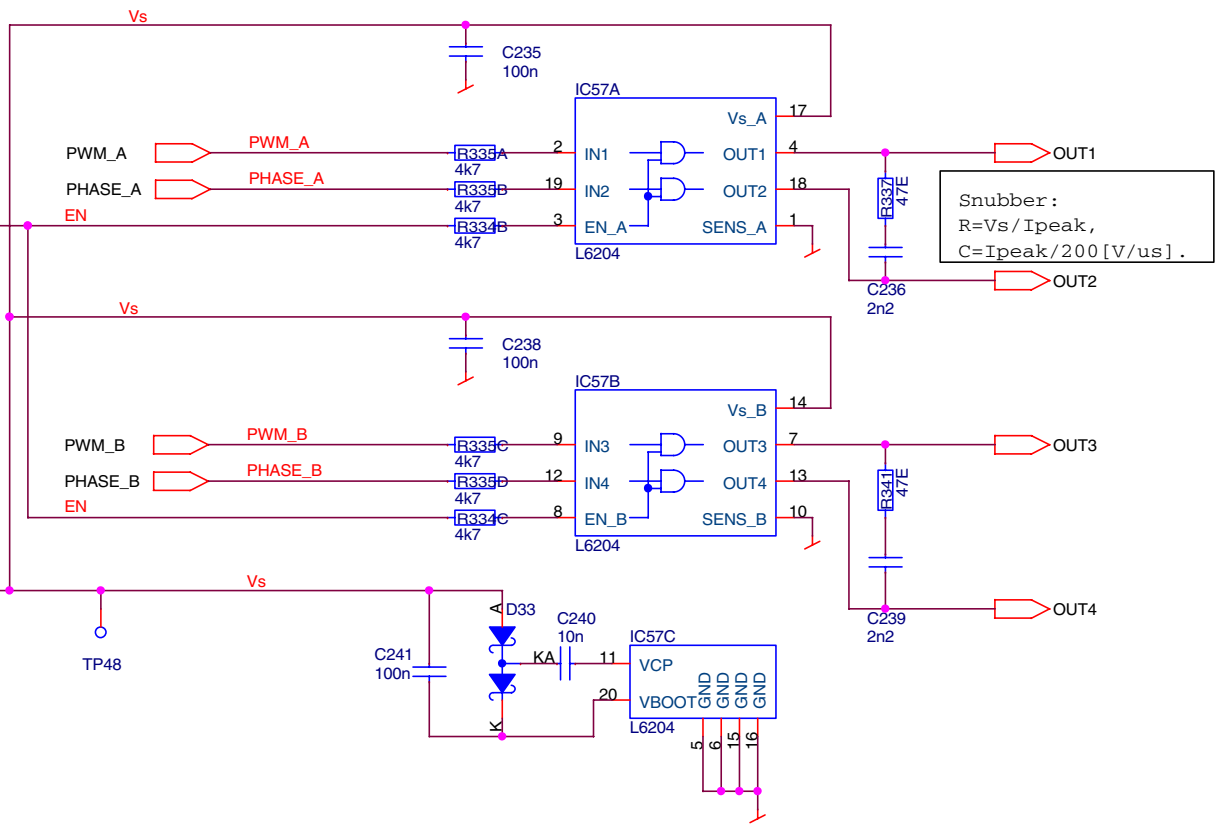
|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 11 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

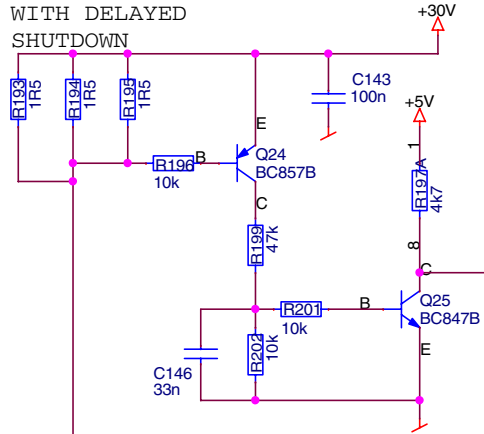
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

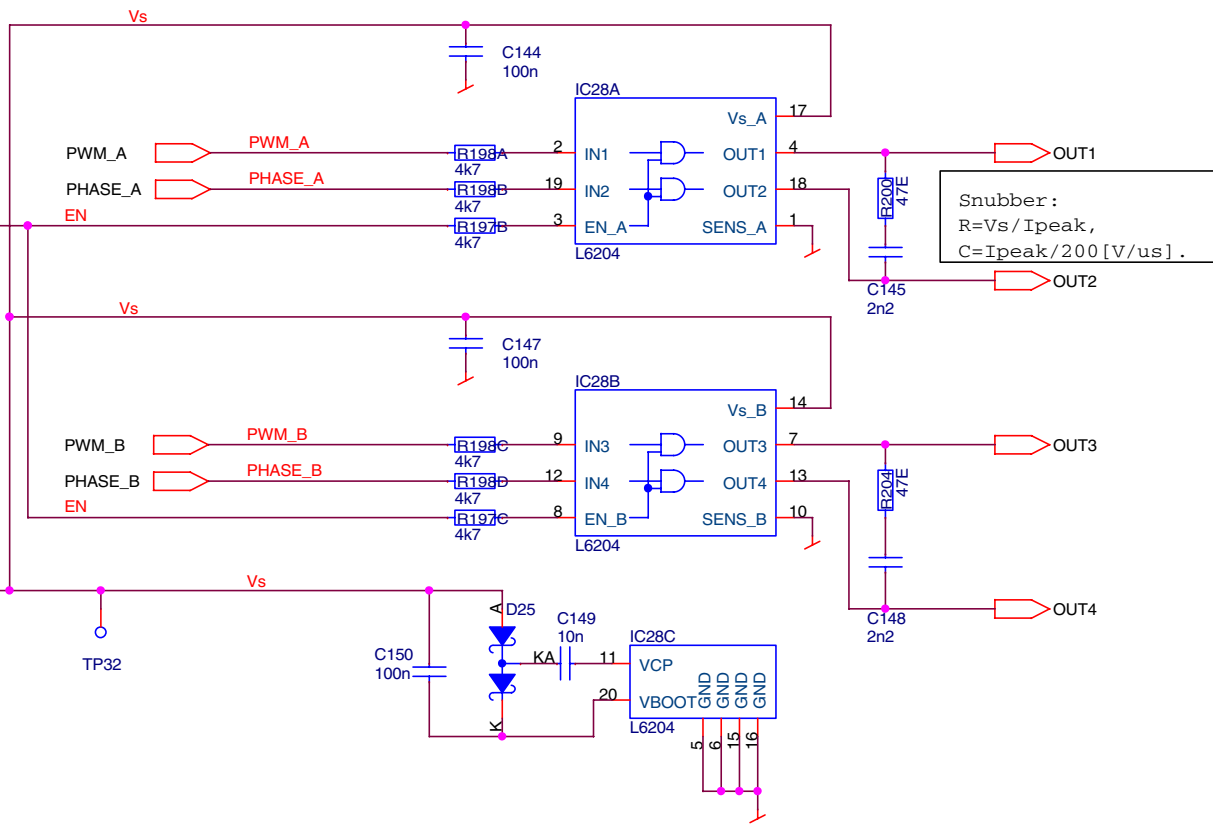
|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 19 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

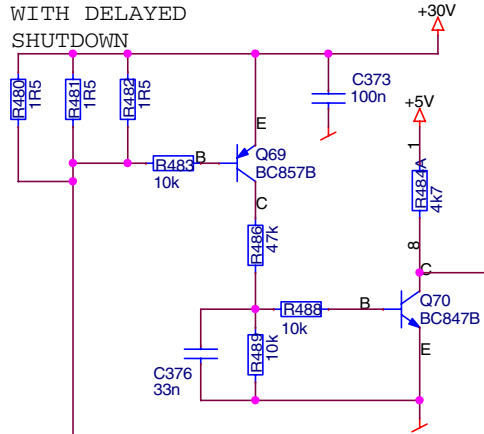
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

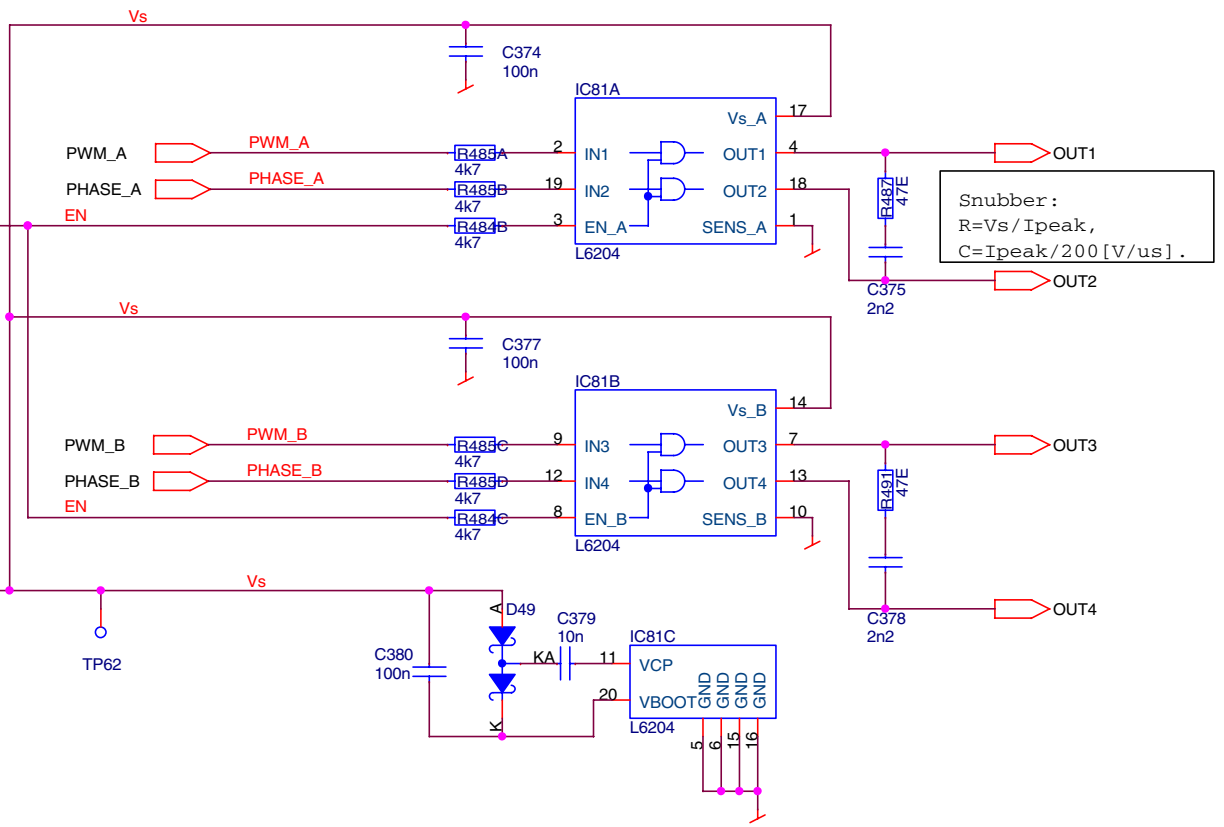
|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 12 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

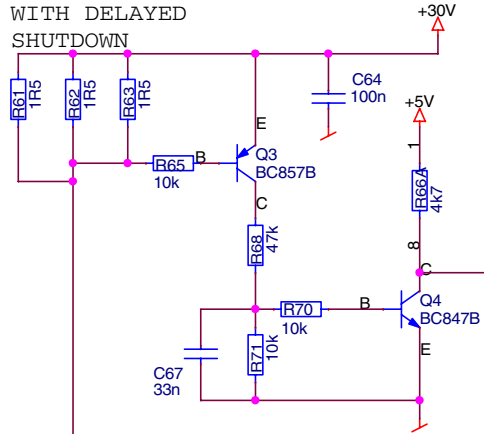
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

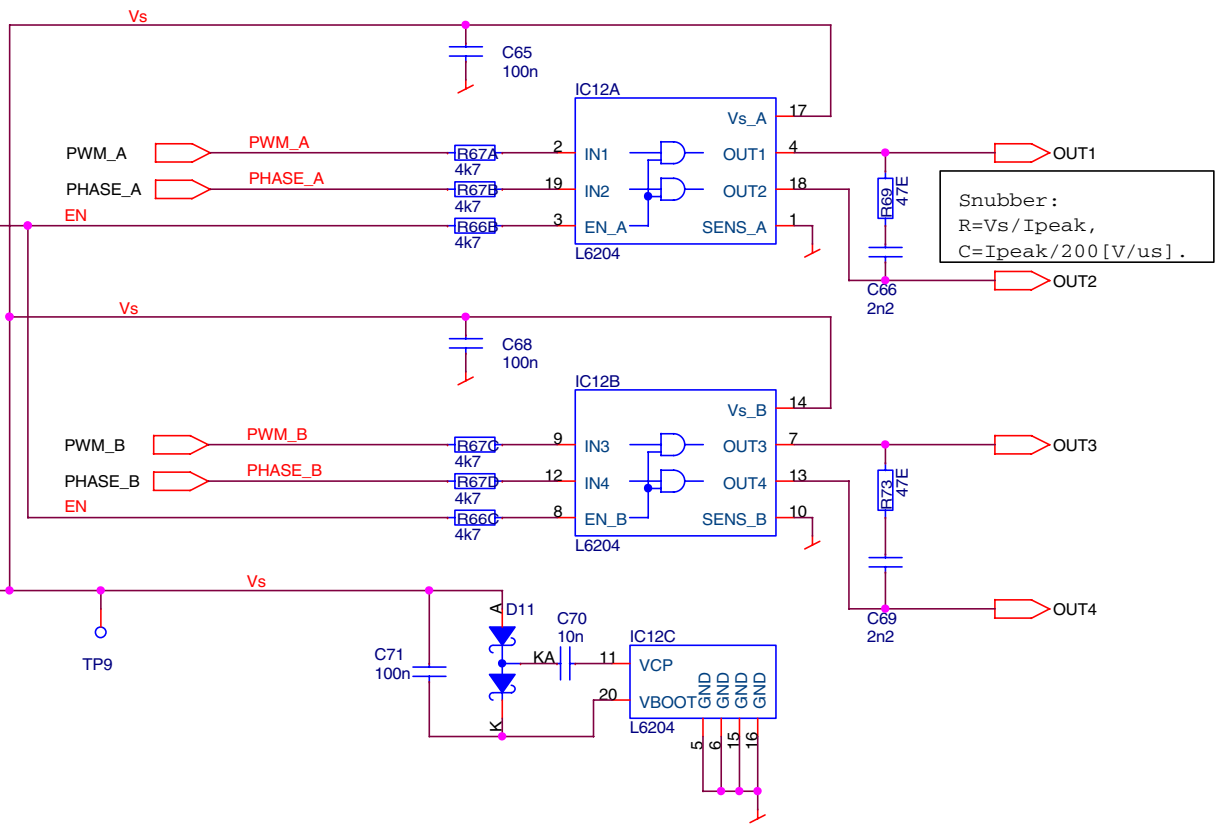
|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 27 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

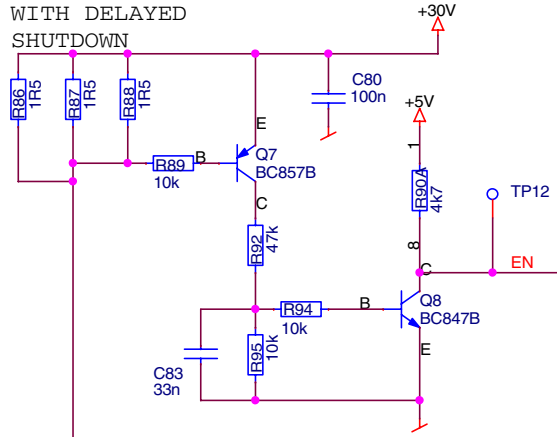
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

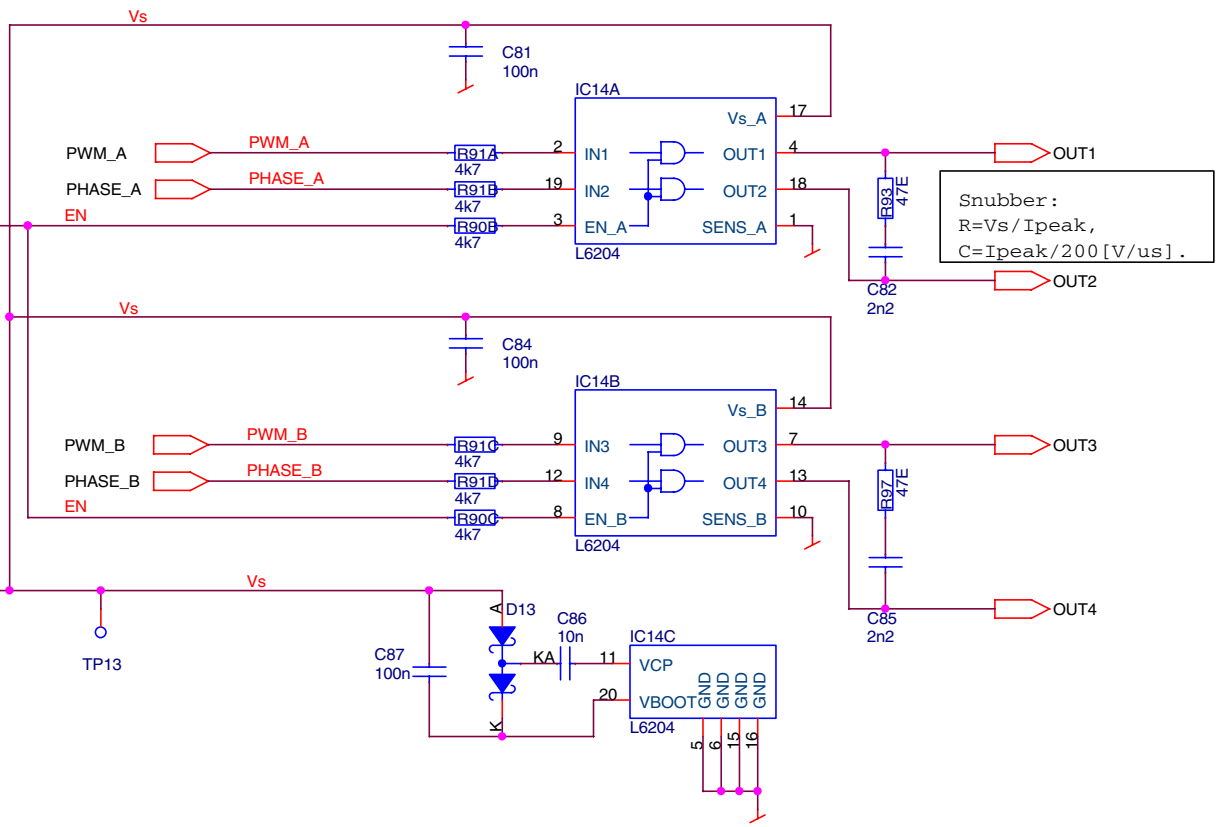
|               |                             |               |
|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| A4            | L6204 Driver                | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 3 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

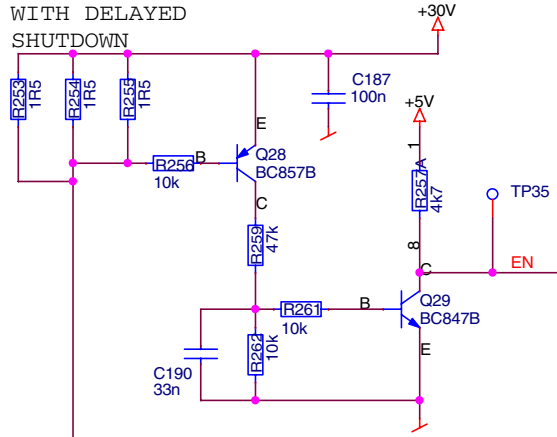
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

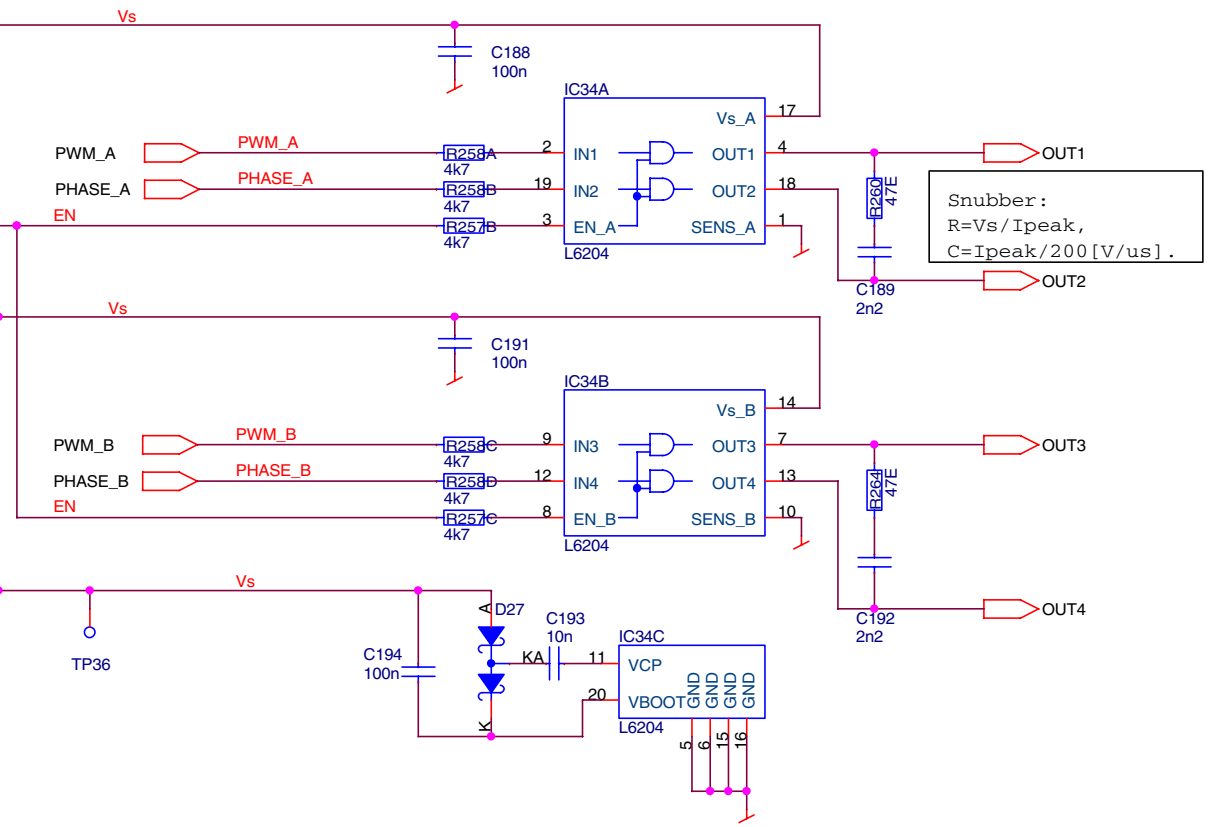
|               |                             |               |
|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| A4            | L6204 Driver                | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 6 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.

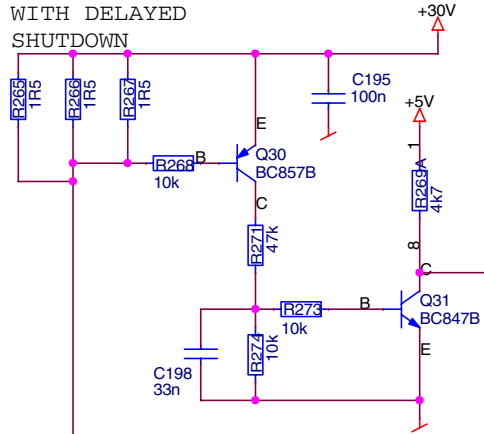


Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|               |                             |                |
|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 15 of 31 |

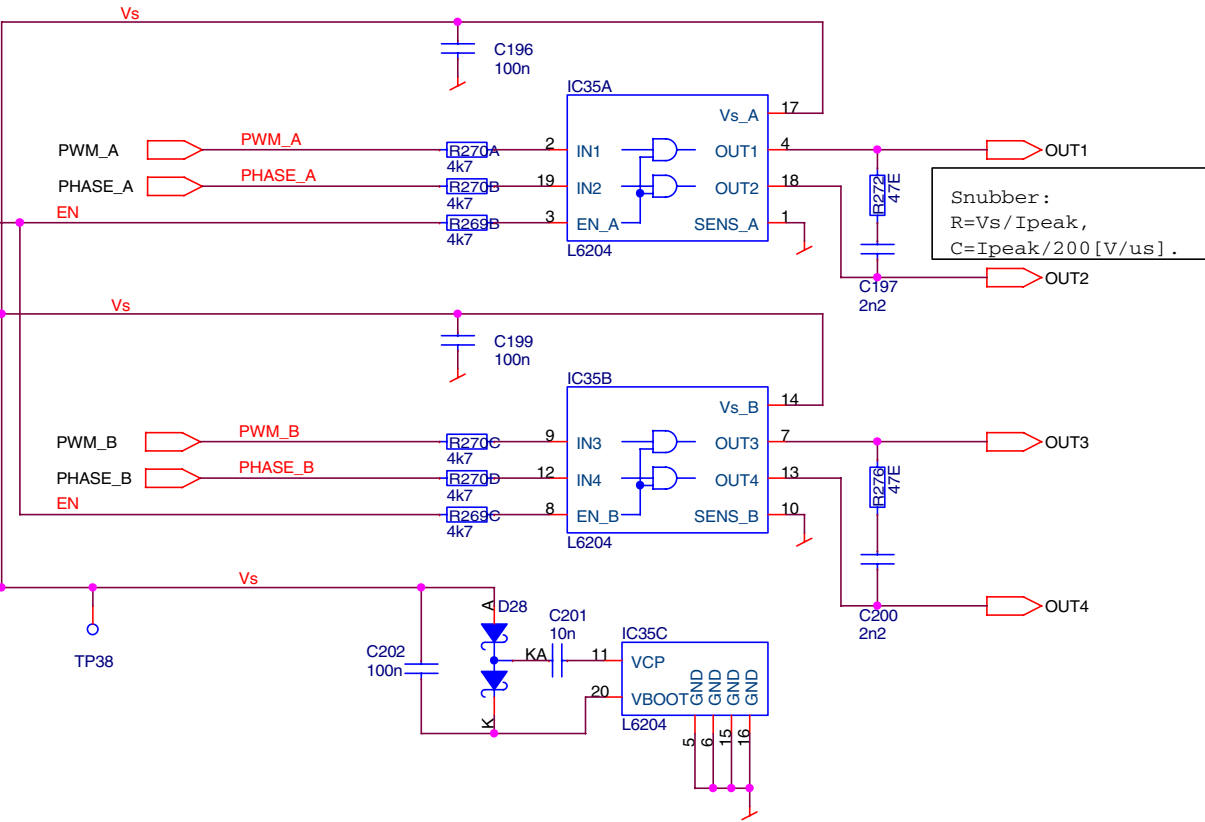


CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$$I_{max} = 0.70 / R'$$

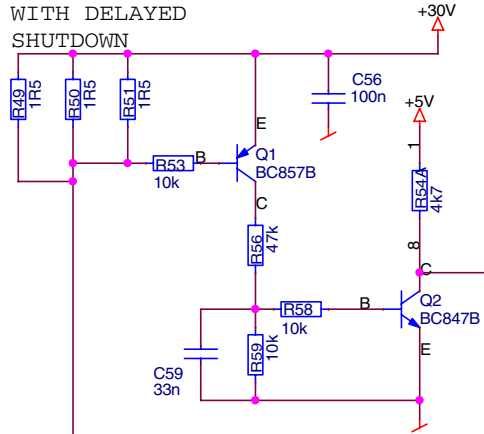
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

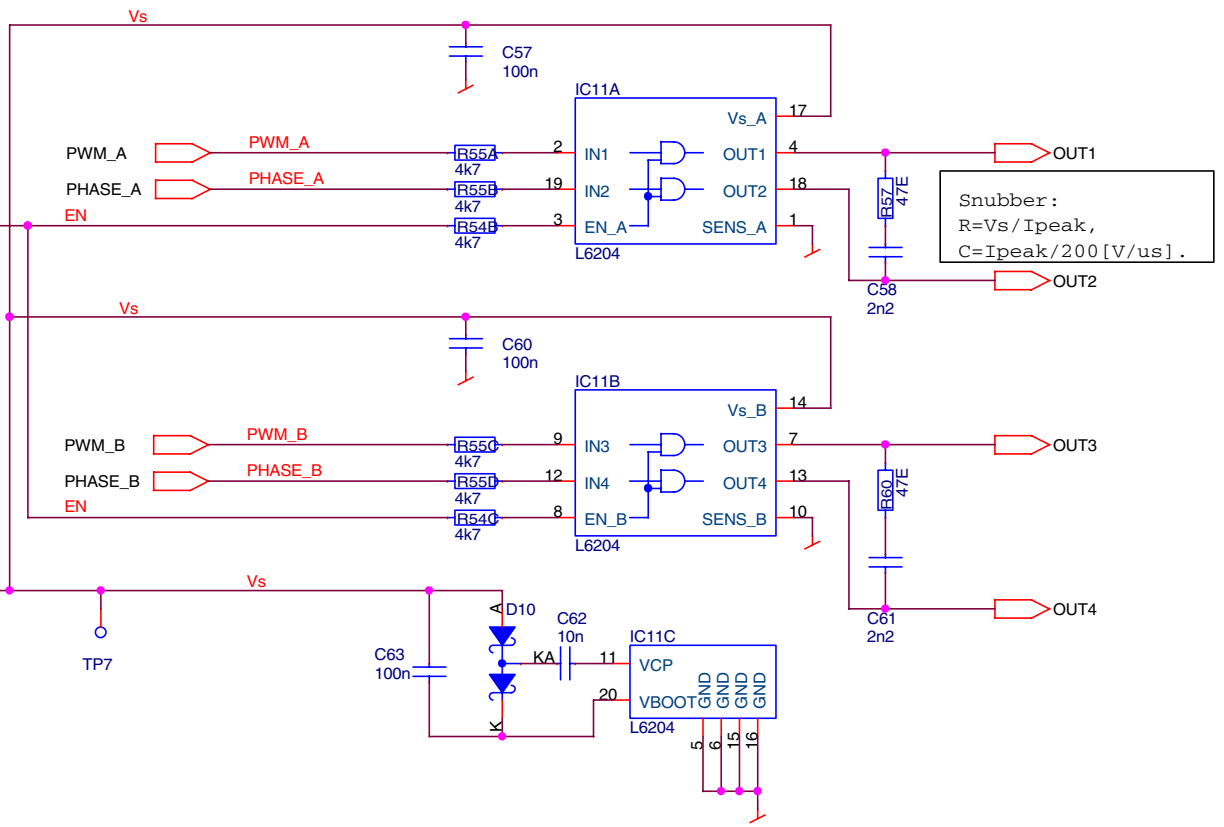
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|---------------|-----------------------------|----------------|
| Title         |                             |                |
| MAC2000 Forma |                             |                |
| Size          | Document Number             | Rev            |
| A4            | L6204 Driver                | C0             |
| Date:         | Thursday, November 22, 2001 | Sheet 16 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

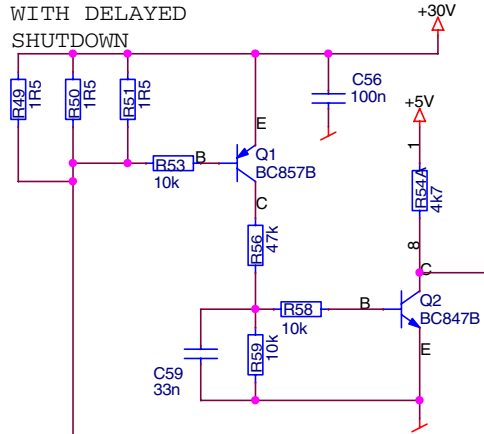
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



Snubber :  
R=Vs/ Ipeak,  
C=Ipeak/200 [V/us].

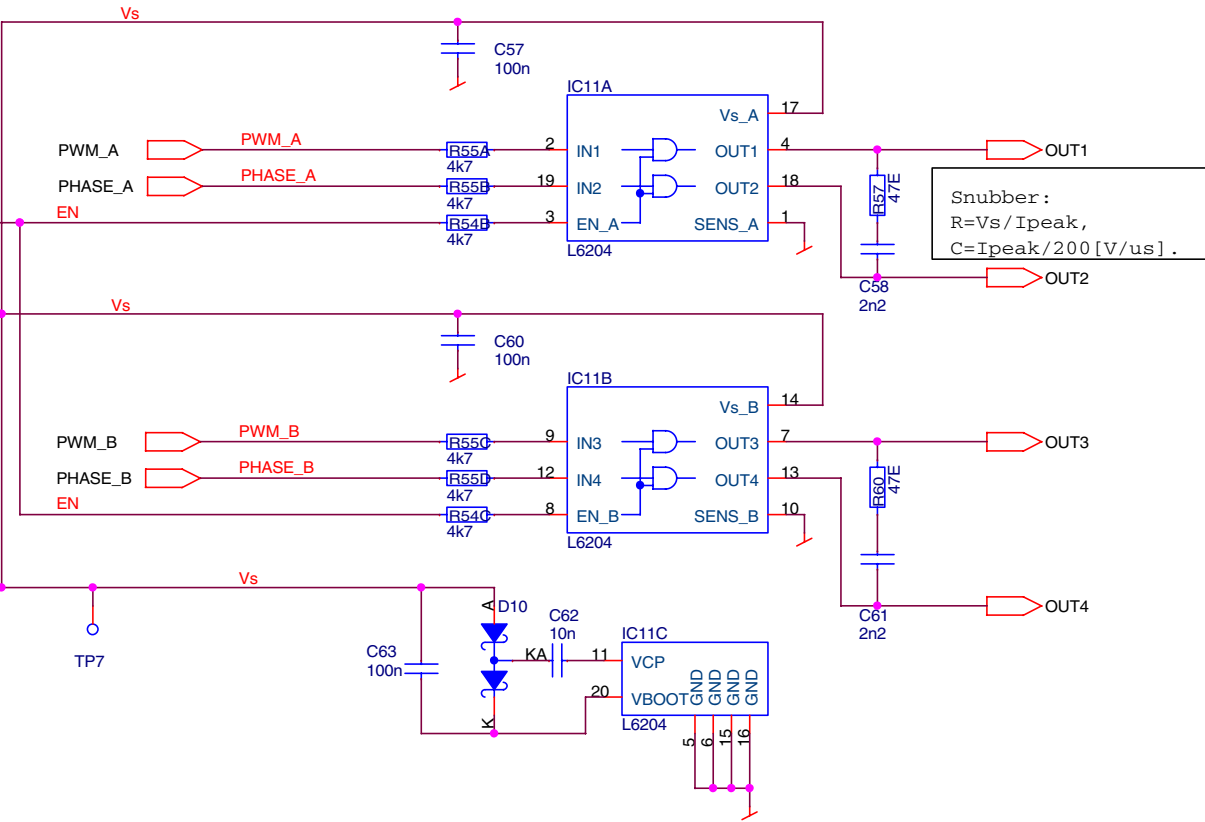
|               |                             |               |
|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| A4            | L6204 Driver                | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 2 of 31 |

CURRENT LIMMITER  
WITH DELAYED  
SHUTDOWN



$I_{max} = 0.70 / R'$

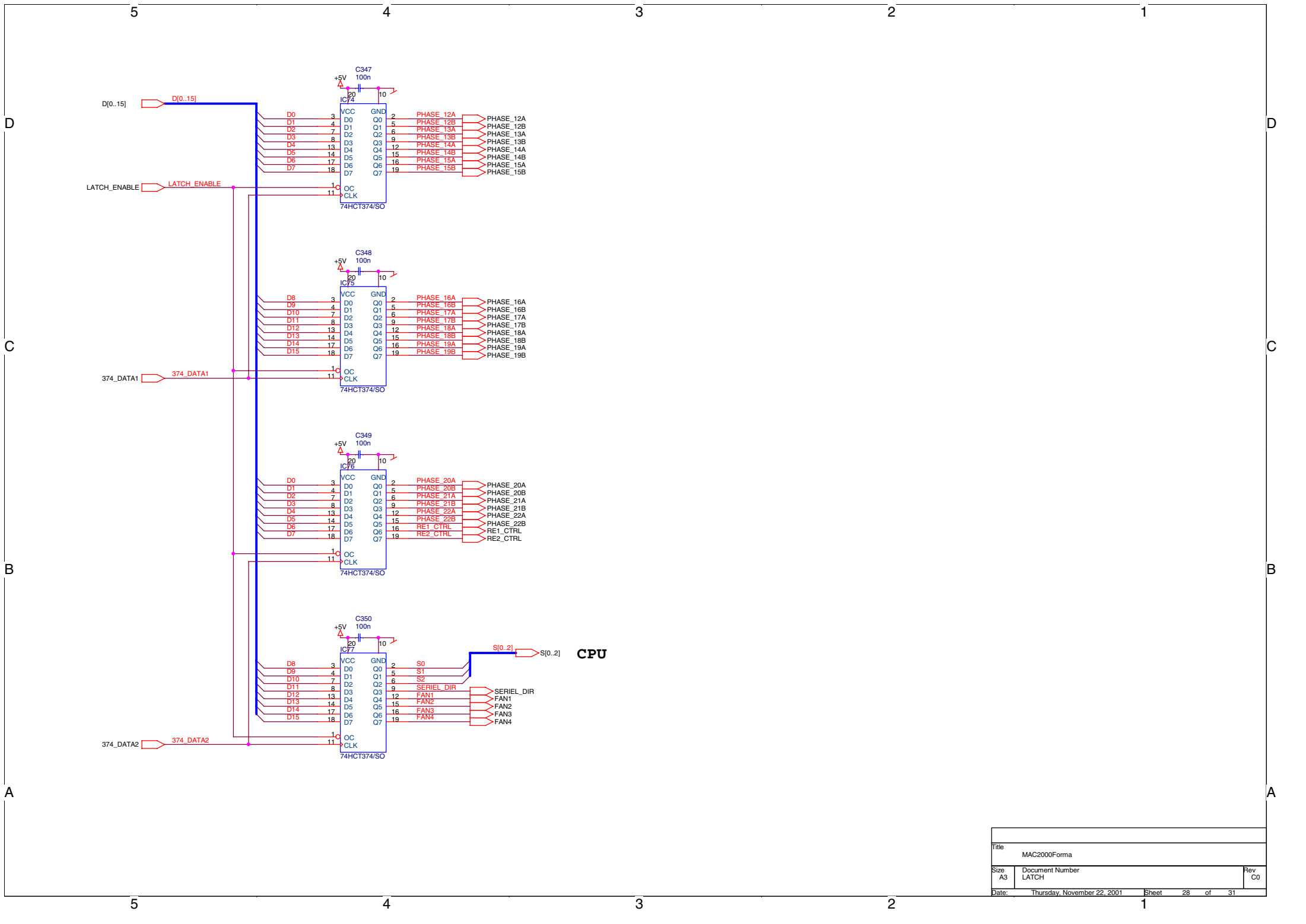
Motor short circuit will result in chopping with a frequency dependant of propagation delay in L6204 and the RC combination in shut down circuit.



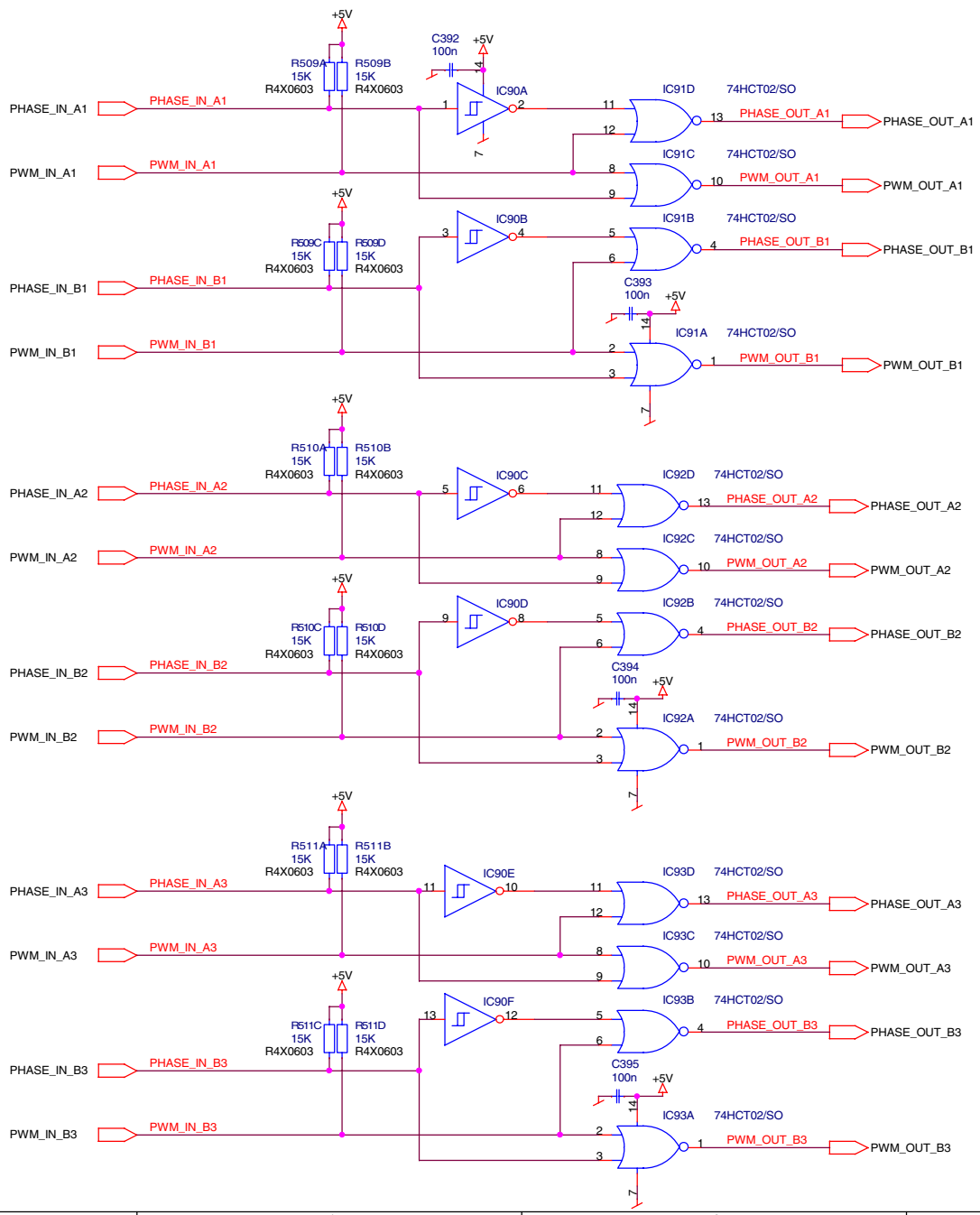
Snubber:  
 $R = V_s / I_{peak}$ ,  
 $C = I_{peak} / 200 [V/us]$ .

|               |                             |               |
|---------------|-----------------------------|---------------|
| Title         |                             |               |
| MAC2000 Forma |                             |               |
| Size          | Document Number             | Rev           |
| A4            | L6204 Driver                | C0            |
| Date:         | Thursday, November 22, 2001 | Sheet 2 of 31 |

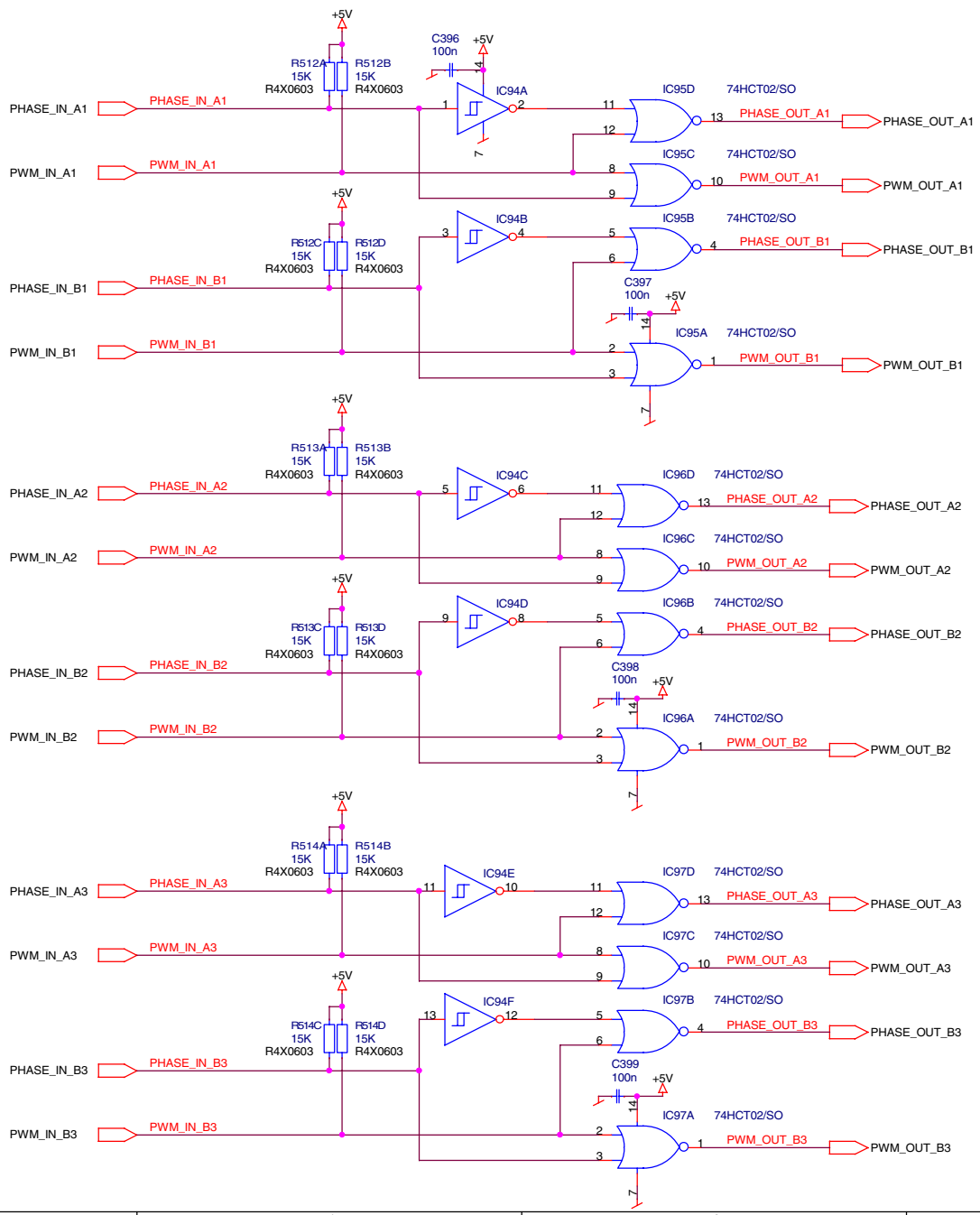




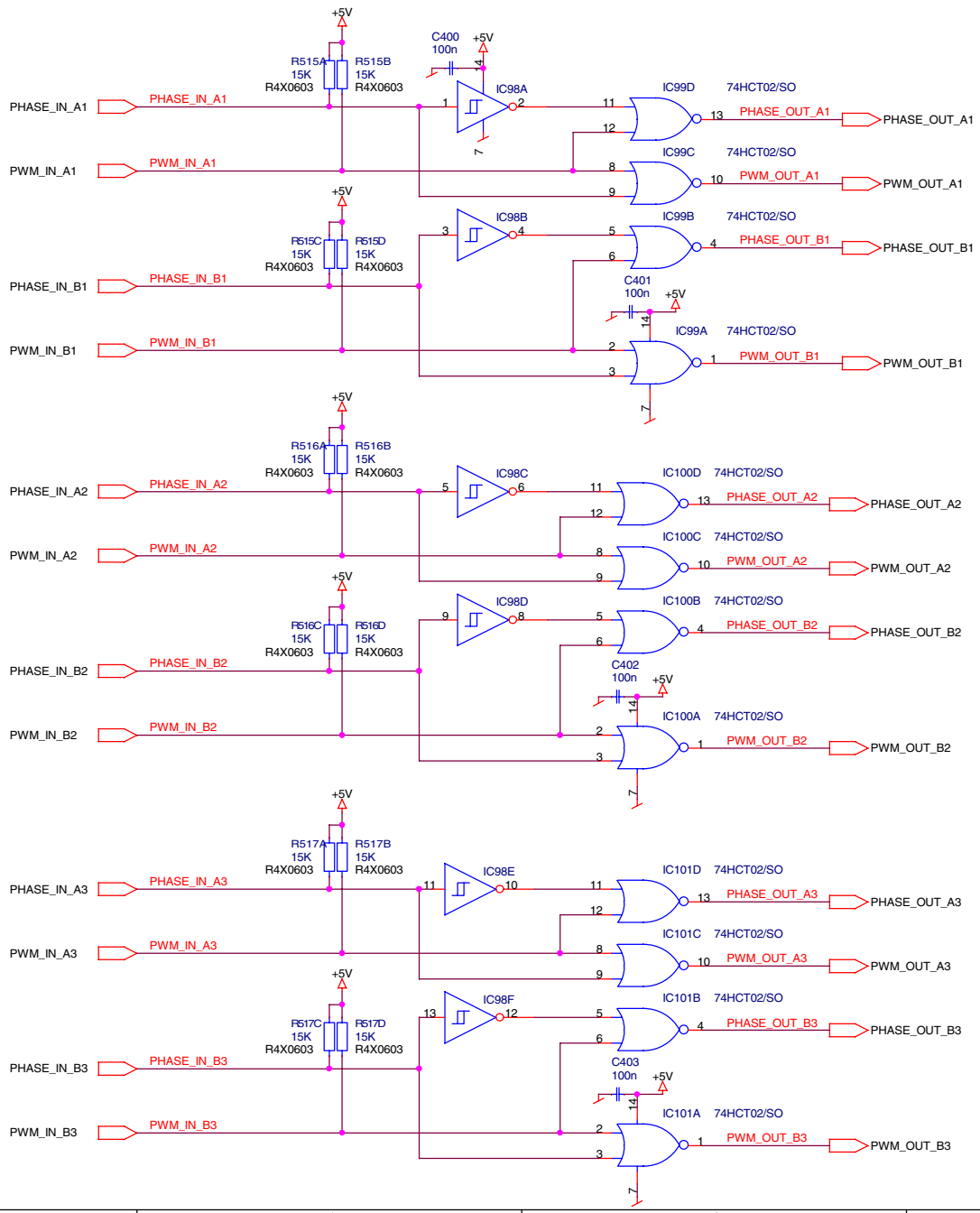
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| Title        |                             |                |
| MAC2000Forma |                             |                |
| Size         | Document Number             | Rev            |
| AS           | LATCH                       | Co             |
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|            |                             |                |
|------------|-----------------------------|----------------|
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| MAC2000 TH |                             |                |
| Size       | Document Number             | Rev            |
| B          | Motor control               | Co             |
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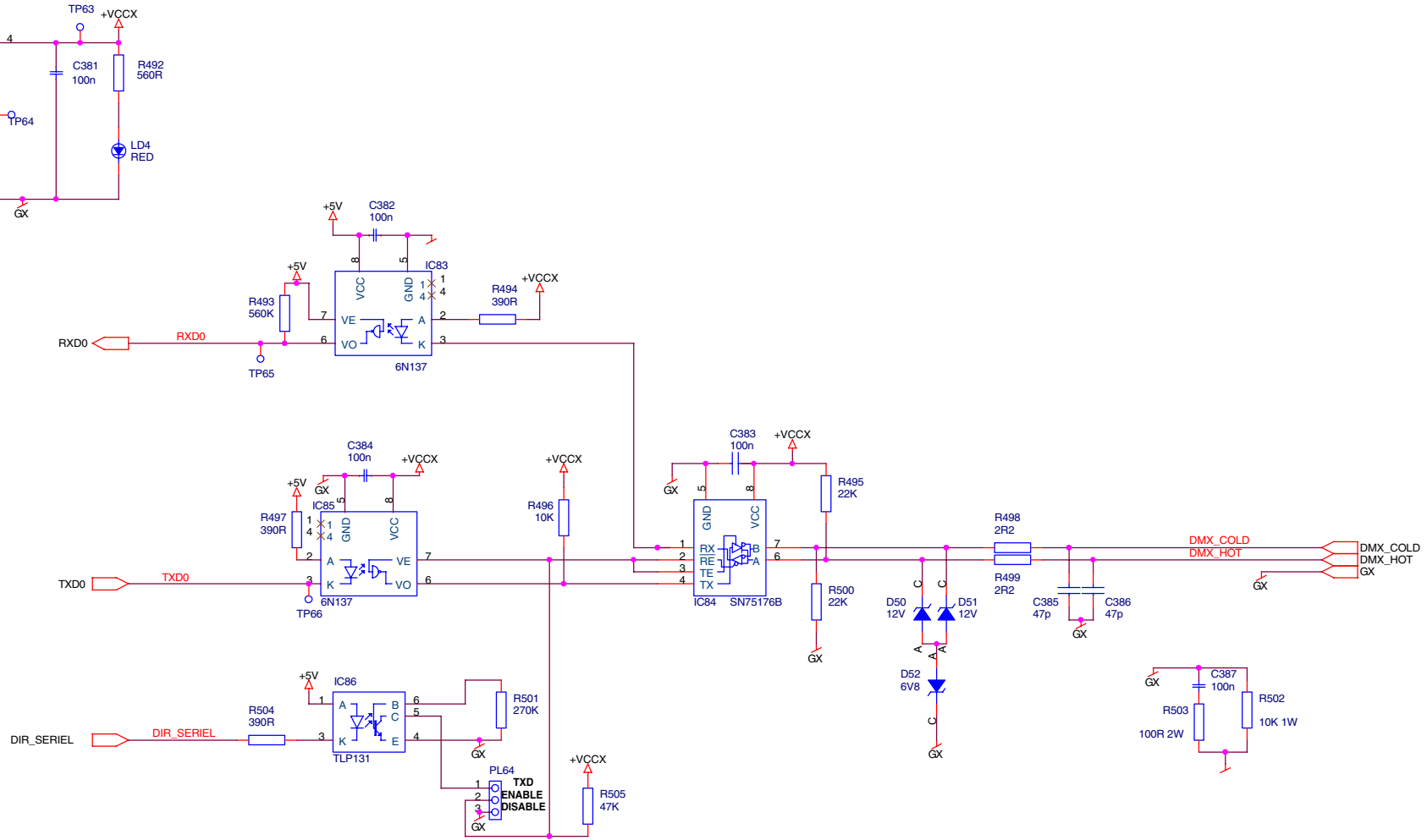


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| Title      |                             |                |
| MAC2000 TH |                             |                |
| Size       | Document Number             | Rev            |
| B          | Motor control               | Co             |
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|            |                             |                |
|------------|-----------------------------|----------------|
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| MAC2000 TH |                             |                |
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| B          | Motor control               | Co             |
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| MAC2000 Forma |                            |                |
| Size          | Document Number            | Rev            |
| B             | UART                       | Co             |
| Date:         | Monday, September 24, 2001 | Sheet 10 of 31 |