

# 39 to 3 OR

Doc. Nr.4049



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25.10.2001

## 39 FAN-IN / 3 FAN-OUT Module

The 39 Fan-In / 3 Fan-Out is a simple and versatile NIM logic module. It consists of one large 39 input OR followed by a 3 x Fan-Out stage. In conjunction with the complementary module, i.e. the 3 Fan-In / 39 Fan-Out eliminates the extra cabling and time delay involved when conventional fan-ins and fan-outs must be cascaded.

### INPUT

Number of inputs: 39 OR; 50 Ohm +/- 1%; direct coupled. Quiescent level is 0 V (DC).

Signal level requirements: Standard NIM logical 1 input, -12 mA to -36 mA.

### OUTPUT

Number of Outputs: 3 . Quiescent level 0 V ( 50 Ohm, DC)

Output Levels: Normal NIM (quiescently 0 mA, minim -16 mA into 50 ohm load during output). Duration is equal to the logical sum of the three OR-ed input durations.

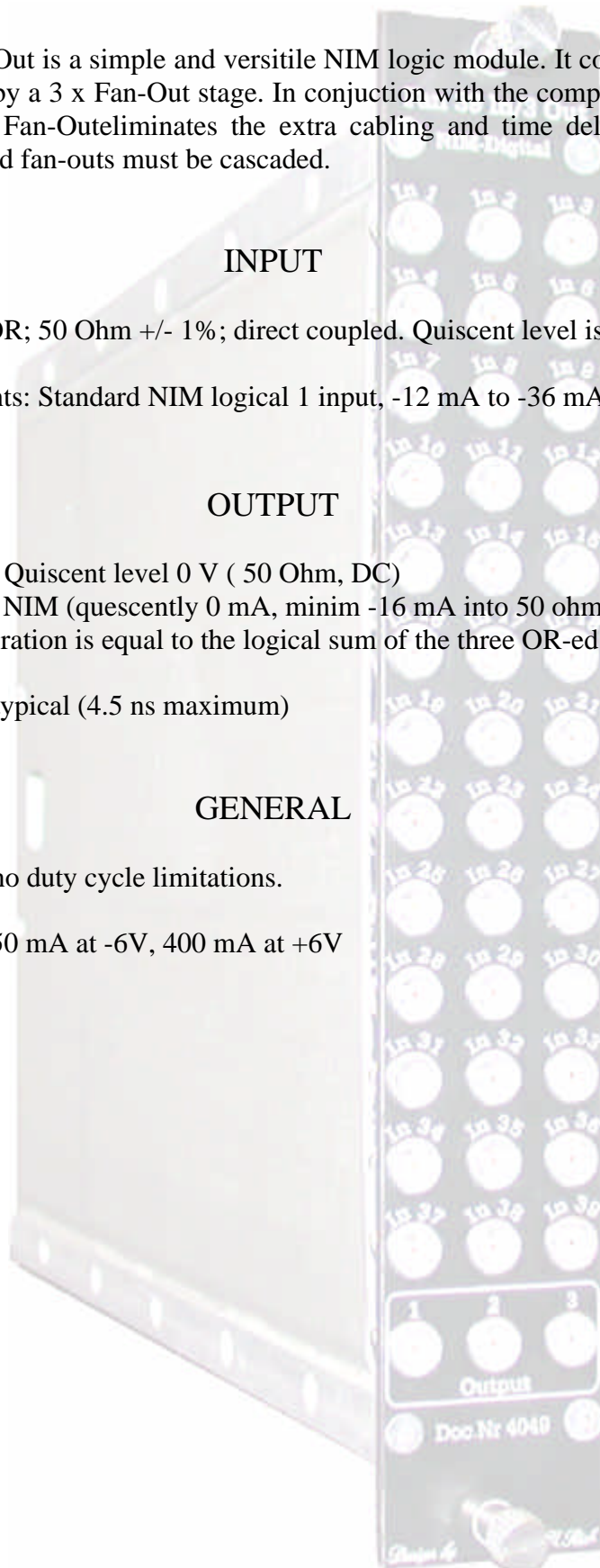
Rise/Fall Time: 3.6 ns typical (4.5 ns maximum)

### GENERAL

Rate: DC to 100 MHz no duty cycle limitations.

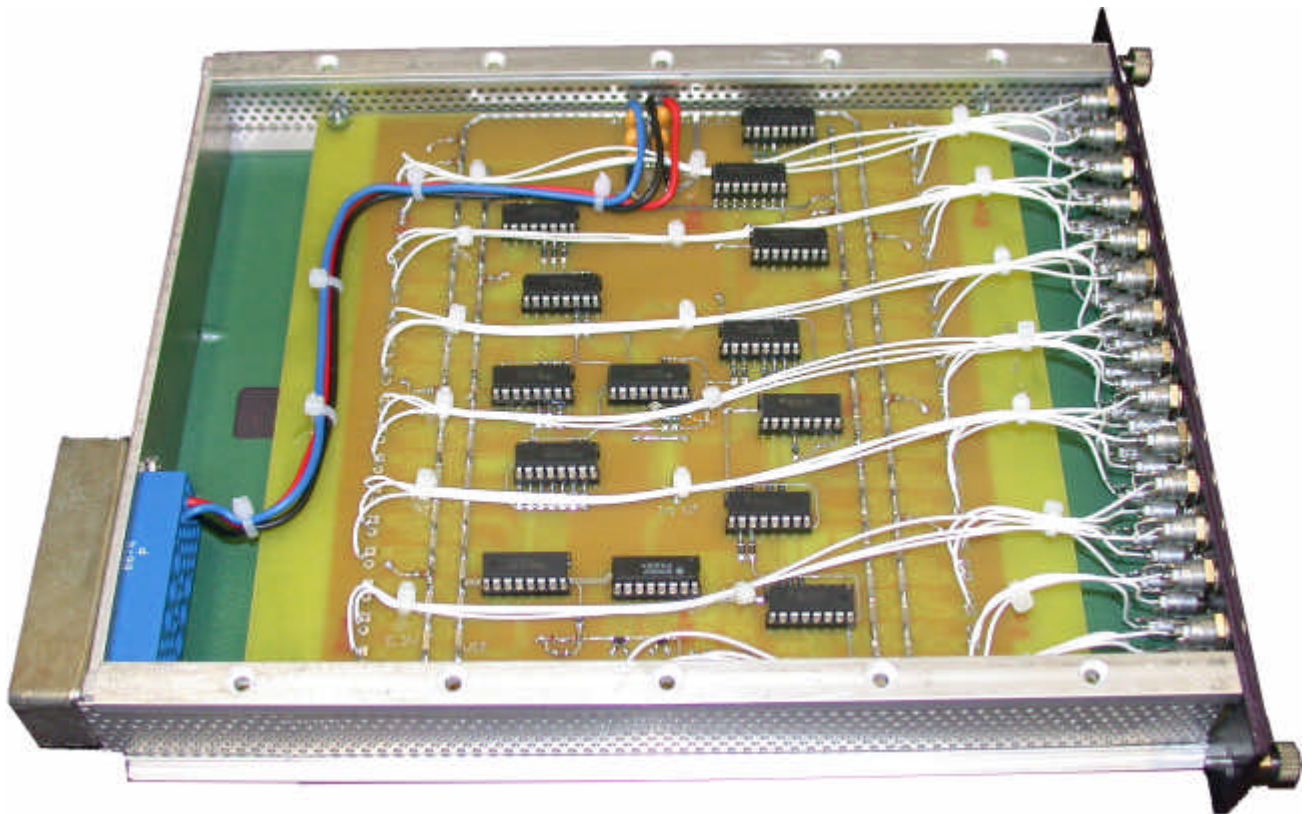
Lemo type connectors.

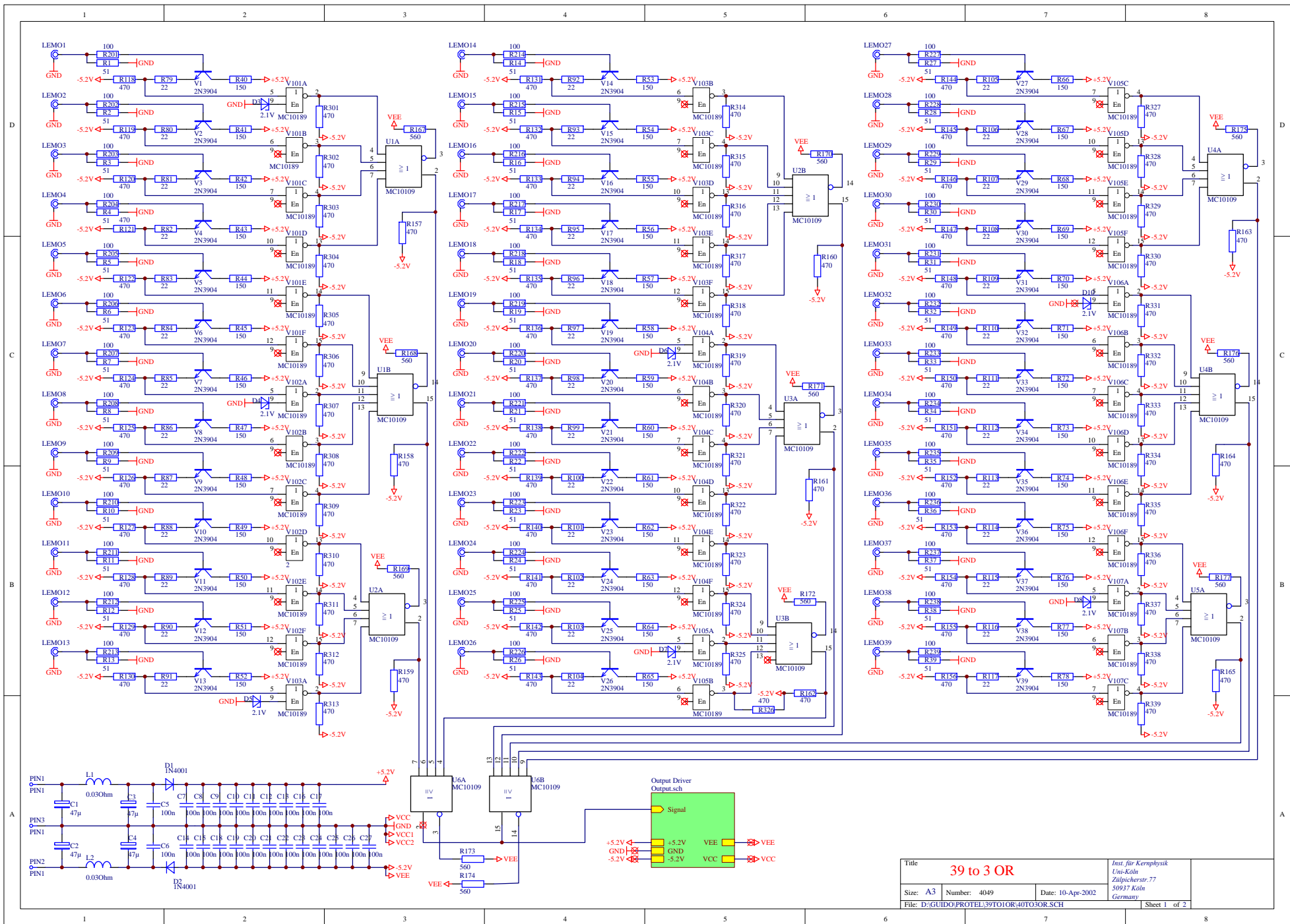
Power requirements: 550 mA at -6V, 400 mA at +6V



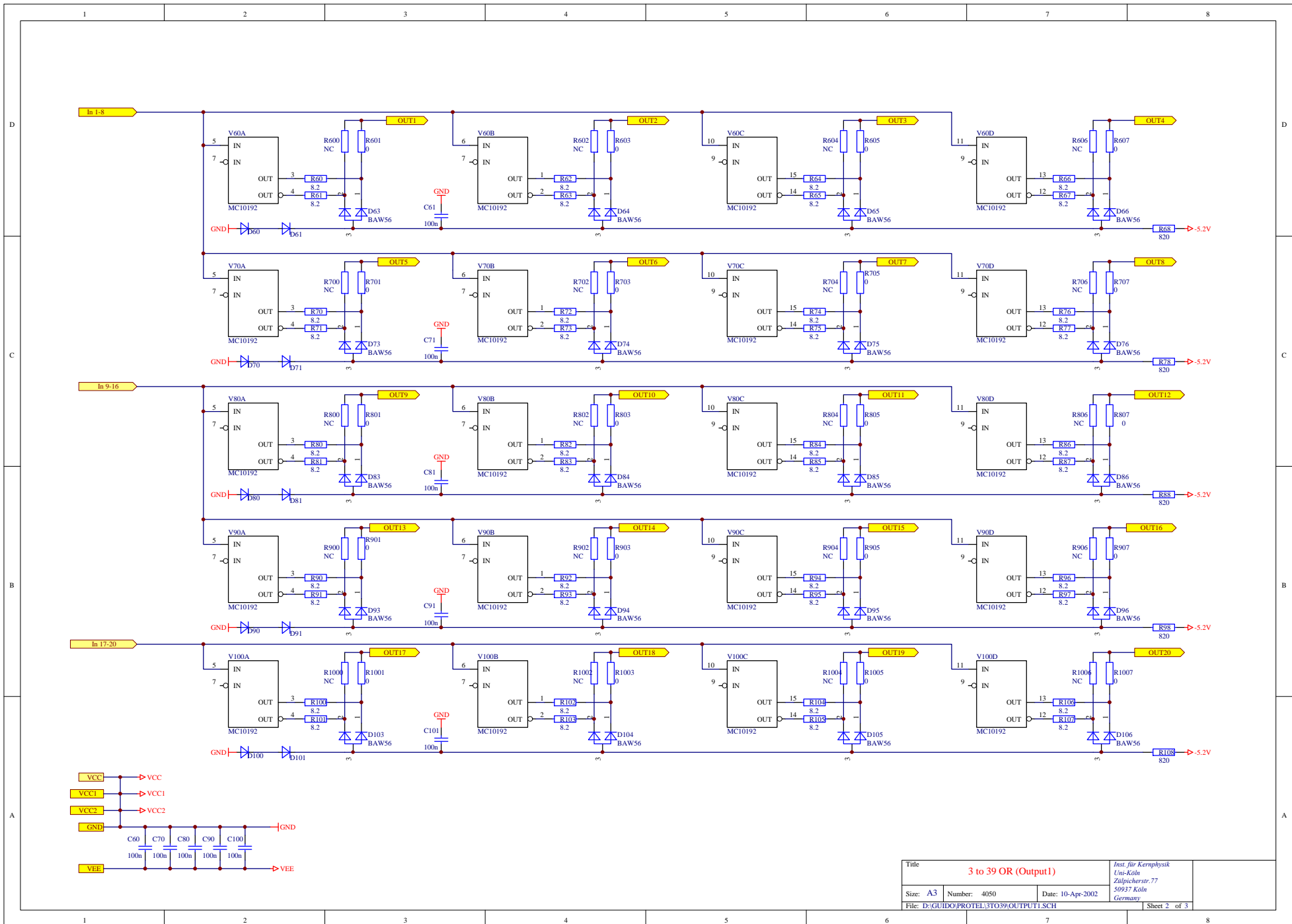
## 39 to 3 OR

Mit diesem NIM Module ist es möglich 39 NIM Signale ( Lemo Eingänge IN 1-39 ) logisch oder zu verknüpfen. Das Ausgangssignal steht an 3 LEMO Buchsen ( OUT 1-3 ) zur Verfügung. Mit den Widerständen R186-R189 ( NC ) und R190-R193 ( 0 Ohm ) ist es möglich das Ausgangssignal zu invertieren. R186-189 und R190-193 dürfen auf keinen Fall gleichzeitig mit 0 Ohm bestückt werden.





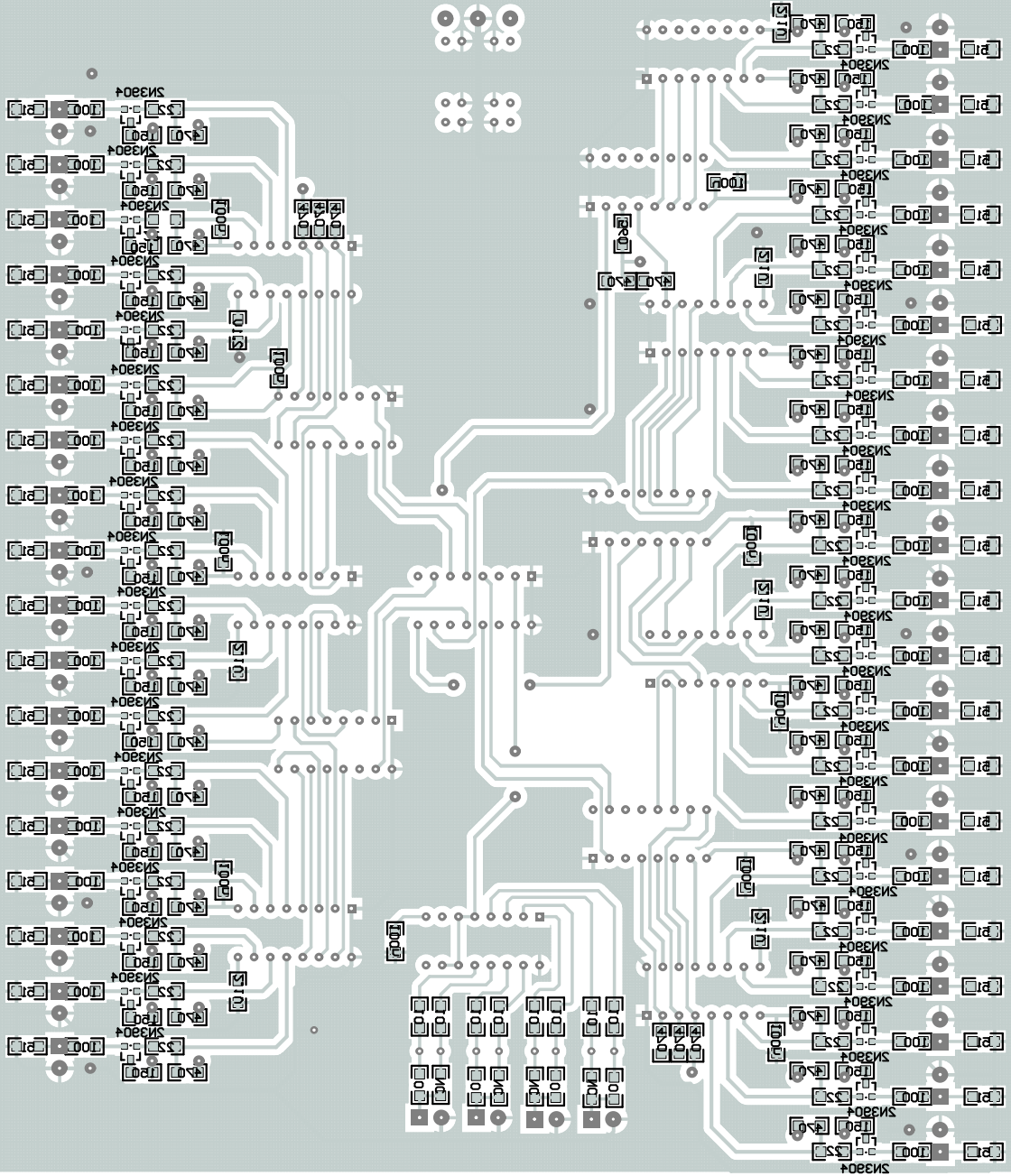
Title		39 to 3 OR		Inst. für Kernphysik Uni-Köln Zulpicherstr. 77 50937 Köln Germany	
Size: A3	Number: 4049	Date: 10-Apr-2002			
File: D:\GUIDO\PROTEL\39TO1OR\40TO3OR.SCH			Sheet 1 of 2		



Title		3 to 39 OR (Output1)		Inst. für Kernphysik Uni-Köln Zùlpicherstr.77 50937 Köln Germany	
Size: A3	Number: 4050	Date: 10-Apr-2002			
File: D:\GUIDO\PROTEL3TO39\OUTPUT1.SCH				Sheet 2 of 3	

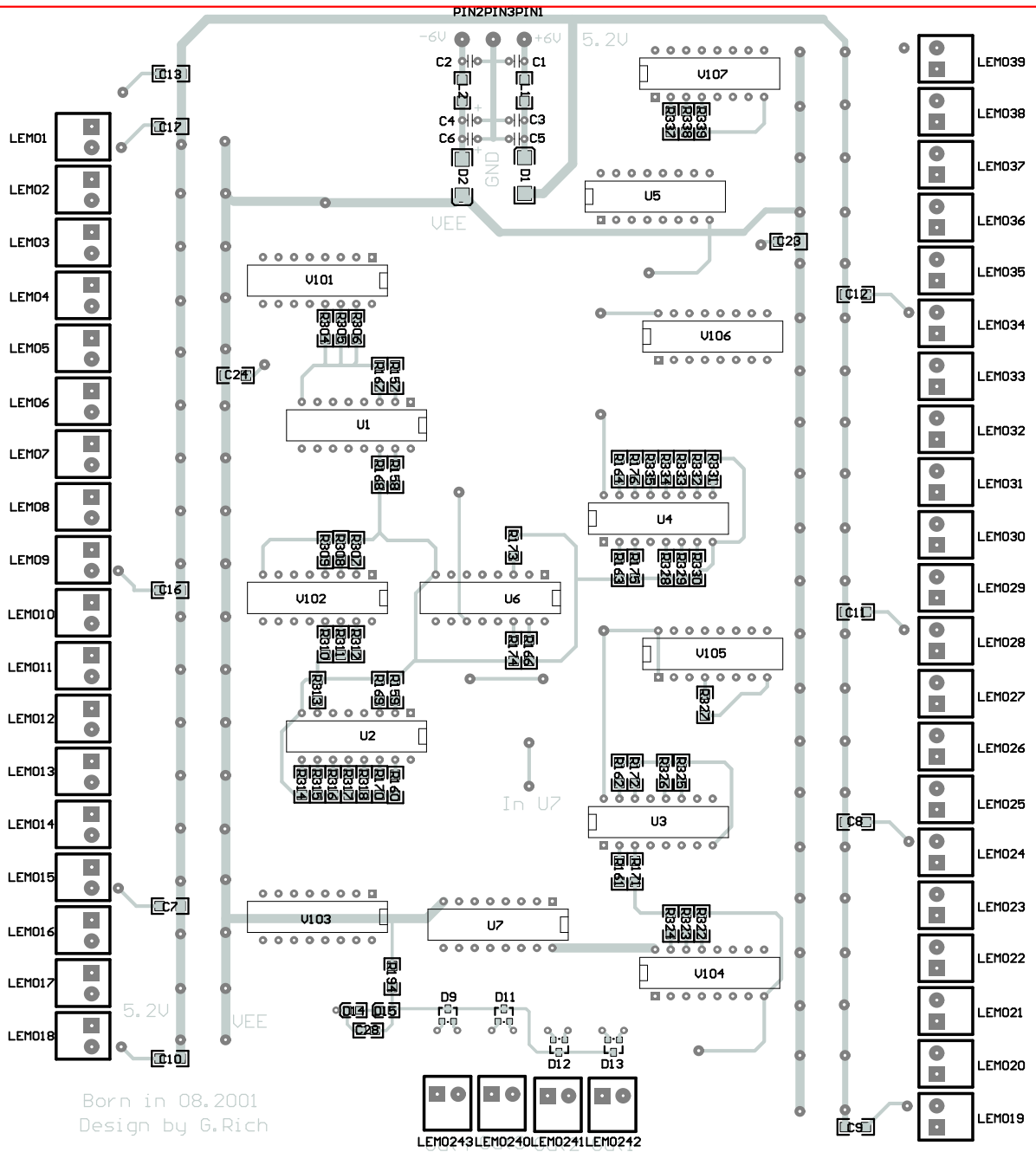
191.77017 (mm)

187.198 (mm)



191.77017 (mm)

187.198 (mm)



Born in 08.2001  
Design by G.Rich

Doc. Nr. 4049

LEM243 LEM240 LEM241 LEM242

Designator	Part Type	Footprint	Description
C1	47μ	c1r	
C10	100n	1206	
C11	100n	1206	
C12	100n	1206	
C13	100n	1206	
C14	100n	1206	
C15	100n	1206	
C16	100n	1206	
C17	100n	1206	
C18	100n	1206	
C19	100n	1206	
C2	47μ	c1r	
C20	100n	1206	
C21	100n	1206	
C22	100n	1206	
C23	100n	1206	
C24	100n	1206	
C25	100n	1206	
C26	100n	1206	
C27	100n	1206	
C28	100n	805	
C3	47μ	c1r	
C4	47μ	c1r	
C5	100n	C1R	
C6	100n	C1R	
C7	100n	1206	
C8	100n	1206	
C9	100n	1206	
D1	1N4001	melf1	
D10	2.1V	1206	
D11	BAW56	SOT-23	High Speed Comman anode
D12	BAW56	SOT-23	High Speed Comman anode
D13	BAW56	SOT-23	High Speed Comman anode
D14	1N4148	melf2	
D15	1N4148	melf2	
D2	1N4001	melf1	
D3	2.1V	1206	
D4	2.1V	1206	
D5	2.1V	1206	
D6	2.1V	1206	
D7	2.1V	1206	
D8	2.1V	1206	
D9	BAW56	SOT-23	High Speed Comman anode
L1	0.030hm	1206	Drossel
L2	0.030hm	1206	Drossel
LEMO1	LEMO2	plug2	
LEMO10	LEMO2	PLUG2	
LEMO11	LEMO2	PLUG2	
LEMO12	LEMO2	PLUG2	
LEMO13	LEMO2	PLUG2	
LEMO14	LEMO2	PLUG2	
LEMO15	LEMO2	PLUG2	
LEMO16	LEMO2	PLUG2	



LEM017	LEM02	PLUG2	
LEM018	LEM02	PLUG2	
LEM019	LEM02	PLUG2	
LEM02	LEM02	PLUG2	
LEM020	LEM02	PLUG2	
LEM021	LEM02	PLUG2	
LEM022	LEM02	PLUG2	
LEM023	LEM02	PLUG2	
LEM024	LEM02	PLUG2	
LEM0240	LEM02	PLUG2	
LEM0241	LEM02	PLUG2	
LEM0242	LEM02	PLUG2	
LEM0243	LEM02	LEMO	
LEM025	LEM02	PLUG2	
LEM026	LEM02	PLUG2	
LEM027	LEM02	PLUG2	
LEM028	LEM02	PLUG2	
LEM029	LEM02	PLUG2	
LEM03	LEM02	PLUG2	
LEM030	LEM02	PLUG2	
LEM031	LEM02	PLUG2	
LEM032	LEM02	PLUG2	
LEM033	LEM02	PLUG2	
LEM034	LEM02	PLUG2	
LEM035	LEM02	PLUG2	
LEM036	LEM02	PLUG2	
LEM037	LEM02	PLUG2	
LEM038	LEM02	PLUG2	
LEM039	LEM02	PLUG2	
LEM04	LEM02	PLUG2	
LEM05	LEM02	PLUG2	
LEM06	LEM02	PLUG2	
LEM07	LEM02	PLUG2	
LEM08	LEM02	PLUG2	
LEM09	LEM02	PLUG2	
PIN1	PIN1	Pin2	
PIN2	PIN1	PIN2	
PIN3	PIN1	PIN2	
R1	51	1206	
R10	51	1206	
R100	22	1206	
R101	22	1206	
R102	22	1206	
R103	22	1206	
R104	22	1206	
R105	22	1206	
R106	22	1206	
R107	22	1206	
R108	22	1206	
R109	22	1206	
R11	51	1206	
R110	22	1206	
R111	22	1206	
R112	22	1206	

R113	22	1206	
R114	22	1206	
R115	22	1206	
R116	22	1206	
R117	22	1206	
R118	470	1206	
R119	470	1206	
R12	51	1206	
R120	470	1206	
R121	470	1206	
R122	470	1206	
R123	470	1206	
R124	470	1206	
R125	470	1206	
R126	470	1206	
R127	470	1206	
R128	470	1206	
R129	470	1206	
R13	51	1206	
R130	470	1206	
R131	470	1206	
R132	470	1206	
R133	470	1206	
R134	470	1206	
R135	470	1206	
R136	470	1206	
R137	470	1206	
R138	470	1206	
R139	470	1206	
R14	51	1206	
R140	470	1206	
R141	470	1206	
R142	470	1206	
R143	470	1206	
R144	470	1206	
R145	470	1206	
R146	470	1206	
R147	470	1206	
R148	470	1206	
R149	470	1206	
R15	51	1206	
R150	470	1206	
R151	470	1206	
R152	470	1206	
R153	470	1206	
R154	470	1206	
R155	470	1206	
R156	470	1206	
R157	470	1206	
R158	470	1206	
R159	470	1206	
R16	51	1206	
R160	470	1206	
R161	470	1206	

R162	470	1206	
R163	470	1206	
R164	470	1206	
R165	470	1206	
R166	470	1206	
R167	560	1206	
R168	560	1206	
R169	560	1206	
R17	51	1206	
R170	560	1206	
R171	560	1206	
R172	560	1206	
R173	560	1206	
R174	560	1206	
R175	560	1206	
R176	560	1206	
R177	560	1206	
R178	10	1206	
R179	10	1206	
R18	51	1206	
R180	10	1206	
R181	10	1206	
R182	10	1206	
R183	10	1206	
R184	10	1206	
R185	10	1206	
R186	NC	1206	
R187	NC	1206	
R188	NC	1206	
R189	NC	1206	
R19	51	1206	
R190	0	1206	
R191	0	1206	
R192	0	1206	
R193	0	1206	
R194	R	1206	
R2	51	1206	
R20	51	1206	
R201	100	1206	
R202	100	1206	
R203	100	1206	
R204	100	1206	
R205	100	1206	
R206	100	1206	
R207	100	1206	
R208	100	1206	
R209	100	1206	
R21	51	1206	
R210	100	1206	
R211	100	1206	
R212	100	1206	
R213	100	1206	
R214	100	1206	
R215	100	1206	

R216	100	1206	
R217	100	1206	
R218	100	1206	
R219	100	1206	
R22	51	1206	
R220	100	1206	
R221	100	1206	
R222	100	1206	
R223	100	1206	
R224	100	1206	
R225	100	1206	
R226	100	1206	
R227	100	1206	
R228	100	1206	
R229	100	1206	
R23	51	1206	
R230	100	1206	
R231	100	1206	
R232	100	1206	
R233	100	1206	
R234	100	1206	
R235	100	1206	
R236	100	1206	
R237	100	1206	
R238	100	1206	
R239	100	1206	
R24	51	1206	
R25	51	1206	
R26	51	1206	
R27	51	1206	
R28	51	1206	
R29	51	1206	
R3	51	1206	
R30	51	1206	
R301	470	1206	
R302	470	1206	
R303	470	1206	
R304	470	1206	
R305	470	1206	
R306	470	1206	
R307	470	1206	
R308	470	1206	
R309	470	1206	
R31	51	1206	
R310	470	1206	
R311	470	1206	
R312	470	1206	
R313	470	1206	
R314	470	1206	
R315	470	1206	
R316	470	1206	
R317	470	1206	
R318	470	1206	
R319	470	1206	

R32	51	1206	
R320	470	1206	
R321	470	1206	
R322	470	1206	
R323	470	1206	
R324	470	1206	
R325	470	1206	
R326	470	1206	
R327	470	1206	
R328	470	1206	
R329	470	1206	
R33	51	1206	
R330	470	1206	
R331	470	1206	
R332	470	1206	
R333	470	1206	
R334	470	1206	
R335	470	1206	
R336	470	1206	
R337	470	1206	
R338	470	1206	
R339	470	1206	
R34	51	1206	
R35	51	1206	
R36	51	1206	
R37	51	1206	
R38	51	1206	
R39	51	1206	
R4	51	1206	
R40	150	1206	
R41	150	1206	
R42	150	1206	
R43	150	1206	
R44	150	1206	
R45	150	1206	
R46	150	1206	
R47	150	1206	
R48	150	1206	
R49	150	1206	
R5	51	1206	
R50	150	1206	
R51	150	1206	
R52	150	1206	
R53	150	1206	
R54	150	1206	
R55	150	1206	
R56	150	1206	
R57	150	1206	
R58	150	1206	
R59	150	1206	
R6	51	1206	
R60	150	1206	
R61	150	1206	
R62	150	1206	

R63	150	1206	
R64	150	1206	
R65	150	1206	
R66	150	1206	
R67	150	1206	
R68	150	1206	
R69	150	1206	
R7	51	1206	
R70	150	1206	
R71	150	1206	
R72	150	1206	
R73	150	1206	
R74	150	1206	
R75	150	1206	
R76	150	1206	
R77	150	1206	
R78	150	1206	
R79	22	1206	
R8	51	1206	
R80	22	1206	
R81	22	1206	
R82	22	1206	
R83	22	1206	
R84	22	1206	
R85	22	1206	
R86	22	1206	
R87	22	1206	
R88	22	1206	
R89	22	1206	
R9	51	1206	
R90	22	1206	
R91	22	1206	
R92	22	1206	
R93	22	1206	
R94	22	1206	
R95	22	1206	
R96	22	1206	
R97	22	1206	
R98	22	1206	
R99	22	1206	
U1	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U2	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U3	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U4	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U5	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U6	MC10109	16DIP300	DUAL 4-5-INPUT`OR/NOR`GATE
U7	MC10192	16DIP300	QUAD BUS DRIVER
V1	2N3904	sot-23	
V10	2N3904	sot-23	
V101	MC10189	16dip300	Hex Inverter
V102	MC10189	16dip300	Hex Inverter
V103	MC10189	16dip300	Hex Inverter
V104	MC10189	16dip300	Hex Inverter
V105	MC10189	16dip300	Hex Inverter

V106	MC10189	16dip300	Hex Inverter
V107	MC10189	16dip300	Hex Inverter
V11	2N3904	sot-23	
V12	2N3904	sot-23	
V13	2N3904	sot-23	
V14	2N3904	sot-23	
V15	2N3904	sot-23	
V16	2N3904	sot-23	
V17	2N3904	sot-23	
V18	2N3904	sot-23	
V19	2N3904	sot-23	
V2	2N3904	sot-23	
V20	2N3904	sot-23	
V21	2N3904	sot-23	
V22	2N3904	sot-23	
V23	2N3904	sot-23	
V24	2N3904	sot-23	
V25	2N3904	sot-23	
V26	2N3904	sot-23	
V27	2N3904	sot-23	
V28	2N3904	sot-23	
V29	2N3904	sot-23	
V3	2N3904	sot-23	
V30	2N3904	sot-23	
V31	2N3904	sot-23	
V32	2N3904	sot-23	
V33	2N3904	sot-23	
V34	2N3904	sot-23	
V35	2N3904	sot-23	
V36	2N3904	sot-23	
V37	2N3904	sot-23	
V38	2N3904	sot-23	
V39	2N3904	sot-23	
V4	2N3904	sot-23	
V5	2N3904	sot-23	
V6	2N3904	sot-23	
V7	2N3904	sot-23	
V8	2N3904	sot-23	
V9	2N3904	sot-23	