

最新世界TTL特性代换手册

TTL DATA AND COMPARISON TABLES

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PREFACE

This data book is divided into sections. 1. Interpretation, 2. Data tables and tables of equivalents, 3. External nomenclature.

Arrangement of the tables (section 2) is based upon the 7400 series, which is most common. Listing is strictly numerical, from 7400 upwards.

No page numbers are listed in the alphameric type index (page 5-11), 74... numbers are listed instead, so that any anomolous type designations can be looked up immediately. In a case where the functional requirement is known, rather than the IC number, there is a "Functional Table of Contents" (page 15-27), a considerable aid when searching for a suitable type.

This concept, designed for the expert, which contains all important information such as a brief description, data characteristics, equivalent types, manufacturer, circuit diagram, truth tables and, where necessary, other references, on a single page, makes it impossible to include more specialised information which may be needed by the circuit designer only in extreme cases. However, section 2 contains more than just a collection of "brief items"; all important aspects are considered: power requirements, input and output load factors, important switching times and frequency limits.

These tables do not indicate supply availability of the types listed. External nomenclature is to be interpreted in principle only since each manufacturer has his own system of labelling.
Errors reserved.

前 言

本手册分为三部分：1，术语解释，2，数据及代换型号表，3，封装规格。

数据及代换型号表按最通用的7400系列顺序排列，在同一页中列出了该型号及可与该型号代换的其它型号及它们的用途简介、制造厂家、电路框图、真值表、特性数据等资料。这些资料包括了需用功率、输入输出负载因数、主要的开关时间及截止频率等主要性能，已足供一般设计之用。

由于各厂家都有各自的标称系统，所以第三部分只作原则性介绍。

5至11页是按型号的字母数字顺序排列的索引，索引列出的数字不是页数而是7400系列中与该型号对应型号的数字；15至27页是按功能分类的索引，可以根据所需功能从中找出合用的型号。

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alphanumeric list of contents

按字母数字分类目录

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5-11

Typ	s. Serien-Nr.
D 1 ..	74 ..
D 2 ..	74 ..
DM 54 ..	74 ..
DM 54H ...	74 ...
DM 54L ...	74 ...
DM 74 ...	74 ...
DM 74H ...	74 ...
DM 74L ...	74 ...
DM 74S ...	74 ...
E 1 ..	74 ..
FJH 101	7430
FJH 111	7420
FJH 121	7410
FJH 131	7400
FJH 141	7440
FJH 151	7450
FJH 161	7451
FJH 171	7453
FJH 181	7454
FJH 191	7480
FJH 201	7482
FJH 211	7483
FJH 221	7402
FJH 231	7401-S3
FJH 241	7404
FJH 251	7405-S3
FJH 261	7442
FJH 271	7486
FJH 281	74180
FJH 291	7403-S3
FJH 301	7403-S1
FJH 311	7401-S1
FJH 321	7405-S1
FJJ 101	7470
FJJ 111	7472

Typ	s. Serien-Nr.
FJJ 121	7473
FJJ 131	7474
FJJ 141	7490
FJJ 151	7491
FJJ 181	7475
FJJ 191	7476
FJJ 211	7493
FJJ 241	7496
FJJ 251	7492
FJJ 261	74107
FJK 101	74121
FJL 101	7441
FJL 131	7413
FJQ 111	7489
FJY 101	7460
FLH 101	7400
FLH 105	7400
FLH 111	7410
FLH 115	7410
FLH 121	7420
FLH 125	7420
FLH 131	7430
FLH 135	7430
FLH 141	7440
FLH 145	7440
FLH 151	7450
FLH 155	7450
FLH 161	7451
FLH 165	7451
FLH 171	7453
FLH 175	7453
FLH 181	7454
FLH 185	7454
FLH 191	7402
FLH 195	7402

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Typ	s. Serien-Nr.	Typ	s. Serien-Nr.
FLH 191 S	7402-S1	FLH 335	4931
FLH 195 S	7402-S1	FLH 341	7486
FLH 201	7401	FLH 345	7486
FLH 205	7401	FLH 351	7413
FLH 201 S	7401-S1	FLH 355	7413
FLH 205 S	7401-S1	FLH 361	7443
FLH 201 T	7401-S3	FLH 365	7443
FLH 205 T	7401-S3	FLH 371	7444
FLH 211	7404	FLH 375	7444
FLH 215	7404	FLH 381	7408
FLH 221	7480	FLH 385	7408
FLH 225	7480	FLH 391	7409
FLH 231	7482	FLH 395	7409
FLH 235	7482	FLH 391 T	7409-S1
FLH 251	4929	FLH 395 T	7409-S1
FLH 255	4929	FLH 401	74181
FLH 271	7405	FLH 405	74181
FLH 275	7405	FLH 411	74182
FLH 271 S	7405-S1	FLH 415	74182
FLH 275 S	7405-S3	FLH 421	74180
FLH 271 T	7405-S3	FLH 425	74180
FLH 275 T	7405-S3	FLH 431	7485
FLH 281	7442	FLH 435	7485
FLH 285	7442	FLH 441	7487
FLH 291	7403	FLH 445	7487
FLH 295	7403	FLH 451	74183
FLH 291 S	7403-S1	FLH 455	74183
FLH 295 S	7403-S1	FLH 461	4934
FLH 291 T	7403-S3	FLH 465	4934
FLH 295 T	7403-S3	FLH 471	4935
FLH 291 U	7426	FLH 475	4935
FLH 295 U	7426	FLH 481	7406
FLH 321	4930	FLH 485	7406
FLH 325	4930	FLH 481 T	7416
FLH 331	4931	FLH 485 T	7416

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Typ	s. Serien-Nr.
FLH 491	7407
FLH 495	7407
FLH 491 T	7417
FLH 495 T	7417
FLH 501	7412
FLH 505	7412
FLH 511	7423
FLH 515	7423
FLH 521	7425
FLH 525	7425
FLH 531	7437
FLH 535	7437
FLH 541	7438
FLH 545	7438
FLH 551	7448
FLH 555	7448
FLH 561	74184
FLH 565	74184
FLH 571	74185
FLH 575	74185
FLH 601	74132
FLH 605	74132
FLH 611	7422
FLH 615	7422
FLH 621	7427
FLH 625	7427
FLH 631	7432
FLH 635	7432
FLH 641	49703
FLH 645	49703
FLH 661	7428
FLH 665	7428
FLH 731	49713
FLH 735	49713
FLH 731 T	49713-S1

Typ	s. Serien-Nr.
FLH 735 T	49713-S1
FLJ 101	7470
FLJ 105	7470
FLJ 111	7472
FLJ 115	7472
FLJ 121	7473
FLJ 125	7473
FLJ 131	7476
FLJ 135	7476
FLJ 141	7474
FLJ 145	7474
FLJ 151	7475
FLJ 155	7475
FLJ 161	7490
FLJ 165	7490
FLJ 171	7492
FLJ 175	7492
FLJ 181	7493
FLJ 185	7493
FLJ 191	7495
FLJ 195	7495
FLJ 201	74190
FLJ 205	74190
FLJ 211	74191
FLJ 215	74191
FLJ 221	7491
FLJ 225	7491
FLJ 231	7494
FLJ 235	7494
FLJ 241	74192
FLJ 245	74192
FLJ 251	74193
FLJ 255	74193
FLJ 261	7496
FLJ 265	7496

Typ	s. Serien-Nr.	Typ	s. Serien-Nr.
FLJ 271	74107	FLJ 451	74165
FLJ 275	74107	FLJ 455	74165
FLJ 281	74104	FLJ 461	74166
FLJ 285	74104	FLJ 465	74166
FLJ 291	74105	FLJ 471	74167
FLJ 295	74105	FLJ 481	4932
FLJ 301	74100	FLJ 485	4932
FLJ 305	74100	FLJ 491	49702
FLJ 311	74198	FLJ 495	49702
FLJ 315	74198	FLJ 501	49704
FLJ 321	74199	FLJ 505	49704
FLJ 325	74199	FLJ 511	49705
FLJ 331	7497	FLJ 415	49705
FLJ 341	74110	FLJ 521	74115
FLJ 345	74110	FLJ 525	74115
FLJ 351	74111	FLJ 531	74174
FLJ 355	74111	FLJ 535	74174
FLJ 361	74118	FLJ 541	74175
FLJ 365	74118	FLJ 545	74175
FLJ 371	74119	FLJ 551	74194
FLJ 375	74119	FLJ 555	74194
FLJ 381	74196	FLJ 561	74195
FLJ 385	74196	FLJ 565	74195
FLJ 391	74197	FLK 101	74121
FLJ 395	74197	FLK 105	74121
FLJ 401	74160	FLK 111	74122
FLJ 405	74160	FLK 115	74122
FLJ 411	74161	FLK 121	74123
FLJ 415	74161	FLK 125	74123
FLJ 421	74162	FLL 101	74141
FLJ 425	74162	FLL 111	7445
FLJ 431	74163	FLL 115	7445
FLJ 435	74163	FLL 111 T	74145
FLJ 441	74164	FLL 115 T	74145
FLJ 445	74164	FLL 121 U	7446

Typ	s. Serien-Nr.	Typ	s. Serien-Nr.
FLL 125 U	7446	FLY 151	74155
FLL 121 V	7447	FLY 155	74155
FLL 125 V	7447	FLY 161	74156
FLL 131	49700	FLY 165	74156
FLL 135	49700	FLY 171	74157
FLL 131 T	49700-S1	FLY 175	74157
FLL 135 T	49700-S1	FLY 181	74120
FLL 141	49701	FLY 185	74120
FLL 145	49701	GFB 74 ...	74 ...
FLL 141 T	49701-S1	GJB 74H ...	74 ...
FLL 145 T	49701-S1	GTB 74S ...	74 ...
FLL 151	74142	HD 74 ...	74 ...
FLL 171	74143	HD 74LS ...	74 ...
FLL 175	74143	HD 74S ...	74 ...
FLL 171 T	74144	IDT 74 ...	74 ...
FLL 175 T	74144	ITT 74 ...	74 ...
FLQ 101	7489	M5S ...	74 ...
FLQ 105	7489	M53 2 ..	74 ..
FLQ 111	7481	M53 3 ..	741 ..
FLQ 115	7481	MB 400	7400
FLQ 121	7484	MB 401	7410
FLQ 125	7484	MB 402	7420
FLQ 131	74170	MB 403	7430
FLQ 135	74170	MB 404	7440
FLQ 141	74200	MB 405	7450
FLY 101	7460	MB 406	7460
FLY 105	7460	MB 408	7480
FLY 111	74150	MB 410	74107
FLY 115	74150	MB 411	7453
FLY 121	74151	MB 416	7401
FLY 125	74151	MB 417	7402
FLY 131	74153	MB 418	7404
FLY 135	74153	MB 420	7474
FLY 141	74154	MB 433	7438
FLY 145	74154	MB 435	7437

Typ	s. Serien-Nr.
MB 442	7442
MB 443	74145
MB 445	74151
MB 447	74180
MB 448	7485
MB 449	7486
MB 450	7463
MB 451	7462
MB 455	74198
MB 456	74191
MB 457	74190
MB 460	74170
MB 461	7489
MC 3000	7400
MC 3001	7408
MC 3002	7402
MC 3003	7432
MC 3005	7410
MC 3006	7411
MC 3010	7420
MC 3020	7450
MC 3030	7460
MC 54 ..	74 ...
MC 54H ...	74 ...
MC 74 ...	74 ...
MC 74H ...	74 ...
MCB 54 ...	74 ...
MIC 54 ...	74 ...
MIC 64 ...	74 ...
MIC 74 ...	74 ...
MIC 74H ...	74 ...
MIC 74L ...	74 ...
MH 74 ..	74 ..
N 74 ...	74 ...

Typ	s. Serien-Nr.
N 74H ...	74 ...
N 74LS ...	74 ...
N 74S ...	74 ...
N 84 ..	74 ..
NC 74 ...	74 ...
NC 74H ...	74 ...
NC 74L ...	74 ...
S 54 ...	74 ...
S 54H ...	74 ...
S 54LS ...	74 ...
S 54S ...	74 ...
S 84 ..	74 ..
SFC 4 ..	74 ..
SFC 41 ..	741 ..
SN 49 ..	49 ..
SN 497 ..	497 ..
SN 498 ..	49 ..
SN 498 ..	497 ..
SN 54 ...	74 ...
SN 54H ...	74 ...
SN 54L ...	74 ...
SN 54LS ...	74 ...
SN 54S ...	74 ...
SN 64 ...	74 ...
SN 74 ...	74 ...
SN 74H ...	74 ...
SN 74L ...	74 ...
SN 74LS ...	74 ...
SN 74S ...	74 ...
SN 84 ...	74 ...
SN 84L ...	74 ...
ST 50	7400
T 102	7400
T 103	7410

Typ	s. Serien-Nr.	Typ	s. Serien-Nr.
T 104	7420	μPB 219	7490
T 105	7450	μPB 222	7492
T 106	7460	μPB 223	7493
T 108	7453	μPB 224	7476
T 109	7440	μPB 225	7473
T 112	7401	μPB 226	7495
T 115	7451	μPB 227	7442
T 122	7402	μPB 230	7483
T 74..	74..	μPB 232	7402
TD 34..	74..	μPB 233	7411
TG 74..	74..	μPB 234	7408
TL 74..	74..	μPB 235	7404
TRW 74..	74..	μPB 236	7405
U3I 74..	74..	μPB 237	7437
U6A 74..	74..	μPB 238	7438
U7A 74..	74..	μPB 20..	74..
US 74..	74..	μPB 21..	74..
ZN 74..	74..	1LB 311	7420
μPB 2S..	74..	1LB 312	7430
μPB 201	7400	1LB 314	7410
μPB 202	7410	1LB 316	7440
μPB 203	7420	1LB 551	7420
μPB 204	7430	1LB 552	7430
μPB 205	7440	1LB 553	7400
μPB 206	7450	1LB 554	7410
μPB 207	7451	1LB 556	7440
μPB 208	7453	1LB 558	7403
μPB 209	7454	1LP 551	7460
μPB 210	7460	1LR 551	7450
μPB 211	7470	1LR 553	7453
μPB 212	7472	1TK 551	7472
μPB 213	7413	1TK 552	7474
μPB 214	7474	1TR 551	7495
μPB 215	7401	9LS..	74..
μPB 217	7475	74..	74..

按功能分类目录

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1. GATES

Short Description	Type(s)	N	H	L	LS	S
1.1. TOTEM-POLE OUTPUTS						
1.1.1. Fan out = 10						
4x2 NAND.	.7400	x	x	x	x	x
3x3 NAND.	.7410	x	x	x	x	
2x4 NAND.	.7420	x	x	x	x	x
2x5 NAND.	.4931	x				
1x8 NAND.	.7430	x	x	x	x	x
1x13 NAND.	.74133					x
4x2 NOR.	.7402	x		x	x	x
3x3 NOR.	.7427	x			x	
2x4 NOR.	.7423, 7425	x				
2x5 NOR.	.74260					x
4x2 AND.	.7408	x			x	x
3x3 AND.	.7411		x		x	x
2x4 AND.	.7421		x		x	
4x2 OR.	.7432	x			x	x
4x2 EX-OR.	.7486, 74135, 74386	x		x	x	x
4x2 EX-NOR.	.74135					x
6x INV.	.7404, 7404-S6	x	x	x	x	x
AND / NOR.	.7450, 7451, 7454, 7455, 7464	x	x	x	x	x
AND / NOR, expandable.	.7452, 7453, 7455	x	x	x	x	x
2x2 NAND + 4x INV.	.4929	x				
2 NAND + 2 AND.	.49700, 49700-S1	x				
Expandable: 2x4 NOR.	.7423	x				
Expandable: AND / NOR.	.7452, 7453, 7455	x	x			

Short Description	Type(s)	N	H	L	LS	S
Schmitt-Trigger: 4x2 NAND.	74132	x			x	x
Schmitt-Trigger: 2x4 NAND.	7413	x			x	
Schmitt-Trigger: 6x INV.	7414	x			x	

1.1.2. Fan out = 30

4x2 NAND.	4930, 7437	x			x	x
2x4 NAND.	7440	x	x		x	x
4x2 NOR.	7428	x			x	

1.1.3. Fan out = 60

4x2 NAND.	7437				x	
4x2 NOR.	7428				x	

1.2. OPEN-COLLECTOR OUTPUTS

1.2.1. Outputs 5.5 V

4x2 NAND. . 7401, 7401-S3, 7403, 7403-S3, 7438		x	x	x	x	x
3x3 NAND 7412		x			x	
2x4 NAND. 7422		x	x		x	x
4x2 NOR. 7433		x			x	
4x2 AND. 7409		x			x	x
3x3 AND. 7415			x		x	x
4x2 EX-OR. 74136		x			x	x
4x2 EX-NOR. 74266					x	
AND / NOR 7465						x
6x INV. 7405, 7405-S3		x	x		x	x

Short Description	Type(s)	N	H	L	LS	S
1.2.2. Outputs 15 V						
4x2 NAND	7401-S1, 7403-S1	x				
4x2 AND	7409-S1	x				
6 buffers	7417	x				
6x INV	7404-S6, 7405-S1, 7416	x				
1.2.3. Outputs 30 V						
6 buffers	49701, 7407	x				
6x INV	7406	x				
1.2.4. Outputs 60 V						
6 buffers	49701-S1	x				
1.2.5. Expandable Base						
6x INV	4934, 4935	x				
1.3. TRI-STATE OUTPUTS						
1x12 NAND	74134	x				
6 buffers	74125, 74126, 74241, 74365	x		x	x	
	74425, 74426	x				
6x INV	74366, 74368	x		x		
8 bus drivers	74244					x
4 bi-directional bus drivers	74242, 74243			x		
8 bi-directional bus drivers	74245			x		