

TC4000 Series

PRODUCT NAME	FUNCTION	PAGE
TC4000BP	DUAL 3 INPUT NOR GATE PLUS INVERTER	75
TC4001BP/BF/BFN	QUAD 2 INPUT NOR GATE	80
TC4001UBP	QUAD 2 INPUT NOR GATE	83
TC4002BP/BF	DUAL 4 INPUT NOR GATE	80
TC4006BP	18-STAGE STATIC SHIFT REGISTER	86
TC4007UBP/UBF	DUAL COMPLEMENTARY PAIR+INVERTER	90
TC4008BP	4-BIT FULL ADDER	94
TC4009UBP	HEX BUFFER/CONVERTER (Inverting Type)	97
TC4010BP	HEX BUFFER/CONVERTER (Non-Inverting Type)	97
TC4011BP/BF/BFN	QUAD 2 INPUT NAND GATE	101
TC4011UBP/UBFN	QUAD 2 INPUT NAND GATE	83
TC4012BP/BF	DUAL 4 INPUT NAND GATE	101
TC4013BP/BF/BFN	DUAL D-TYPE FLIP FLOP	104
TC4014BP	8-STAGE STATIC SHIFT REGISTER	109
TC4015BP/BF/BFN	DUAL 4-STAGE SHIFT REGISTER	113
TC4016BP/BF/BFN	QUAD BILATERAL SWITCH	117
TC4017BP/BF	DECADE COUNTER/DIVIDER	122
TC4018BP	PRESETTABLE DIVIDE-BY-"N" COUNTER	127
TC4019BP/BF/BFN	QUAD AND/OR SELECT GATE	132
TC4020BP/BF/BFN	14 STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDERS	135
TC4021BP/BF/BFN	8-STAGE STATIC SHIFT REGISTER	140
TC4022BP	OCTAL COUNTER/DIVIDER	145
TC4023BP/BF/BFN	TRIPLE 3 INPUT NAND GATE	101
TC4024BP/BF/BFN	7 STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDERS	150
TC4025BP/BF/BFN	TRIPLE 3 INPUT NOR GATE	80
TC4027BP/BF/BFN	DUAL J-K MASTER-SLAVE FLIP-FLOP	154
TC4028BP/BF/BFN	BCD-TO-DECIMAL DECODER	159
TC4029BP/BF	PRESETTABLE UP/DOWN COUNTER	162
TC4030BP/BF/BFN	QUAD EXCLUSIVE-OR GATE	168
TC4032BP	TRIPLE SERIAL ADDER (Positive Adder)	171
TC4034BP	8-STAGE STATIC BIDIRECTIONAL PARALLEL SERIAL IN/OUT BUS REGISTER	176
TC4035BP	4-STAGE PARALLEL IN/PARALLEL OUT SHIFT REGISTER	181
TC4036BP	4 WORD × 8 BIT STATIC RAM	186
TC4038BP	TRIPLE SERIAL ADDER (Negative Adder)	171
TC4039BP	4 WORD × 8 BIT STATIC RAM	186

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PRODUCT NAME	FUNCTION	PAGE
TC4040BP/BF/BFN	12 STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDERS	192
TC4042BP/BF/BFN	QUAD CLOCKED "D" LATCH	197
TC4043BP	QUAD 3-STAGE NOR R/S LATCH	202
TC4044BP/BF/BFN	QUAD 3-STATE NAND R/S LATCH	206
TC4047BP	LOW-POWER MONOSTABLE/ASTABLE MULTIVIBRATOR	210
TC4049BP/BF/BFN	HEX BUFFER/CONVERTER (Inverting Type)	217
TC4050BP/BF/BFN	HEX BUFFER/CONVERTER (Non-Inverting Type)	217
TC4051BP/BF/BFN	SINGLE 8-CHANNEL MULTIPLEXER/DEMULTIPLEXER	220
TC4052BP/BF/BFN	DIFFERENTIAL 4-CHANNEL MULTIPLEXER/DEMULTIPLEXER	220
TC4053BP/BF/BFN	TRIPLE 2- CHANNEL MULTIPLEXER/DEMULTIPLEXER	220
TC4054BP/BF	LIQUID-CRYSTAL DISPLAY DRIVER (4-Segment)	225
TC4055BP	LIQUID-CRYSTAL DISPLAY DRIVER (BCD TO 7-Segment)	229
TC4056BP/BF	LIQUID-CRYSTAL DISPLAY DRIVER (BCD TO 7-Segment)	229
TC4063BP/BF	4-BIT MAGNITUDE COMPARATOR	234
TC4066BP/BF/BFN	QUAD BILATERAL SWITCH	238
TC4068BP/BF	8 INPUT NAND/AND GATE	243
TC4069UBP/UBF/UBFN	HEX INVERTER	246
TC4071BP/BF/BFN	QUAD 2 INPUT OR GATE	249
TC4072BP/BF	DUAL 4 INPUT OR GATE	249
TC4073BP/BF/BFN	TRIPLE 3 INPUT AND GATE	252
TC4075BP/BF	TRIPLE 3 INPUT OR GATE	249
TC4076BP	4-BIT D-TYPE REGISTER	255
TC4077BP/BF/BFN	QUAD EXCLUSIVE-NOR GATE	260
TC4078BP/BF	8 INPUT NOR/OR GATE	263
TC4081BP/BF/BFN	QUAD 2 INPUT AND GATE	252
TC4082BP	DUAL 4 INPUT AND GATE	252
TC4085BP	DUAL 2-WIDE 2 INPUT AND-OR-INVERT GATE	266
TC4086BP	4-WIDE 2 INPUT AND-OR-INVERT GATE	269
TC4093BP/BF/BFN	QUAD 2 INPUT NAND SCHMITT TRIGGER	273
TC4094BP/BF/BFN	8-BIT SHIFT-AND-STORE BUS REGISTER	276
TC4099BP/BF	8-BIT ADDRESSABLE LATCH	282
TC40102BP	8-STAGE PRESETTABLE DOWN COUNTER (2-Decode BCD Type)	287
TC40103BP	8-STAGE PRESETTABLE DOWN COUNTER (8-Bit Bynary Type)	287
TC40104BP	4-BIT BIDIRECTIONAL SHIFT REGISTER WITH 3-STATE OUTPUTS	296
TC40107BP	DUAL 2 INPUT NAND BUFFER/DRIVER	302

TC4000 Series (Continued)

PRODUCT NAME	FUNCTION	PAGE
TC40117BP	PROGRAMMABLE DUAL 4-BIT TERMINATOR	305
TC40160BP	PROGRAMMABLE DECADE COUNTER WITH ASYNCHRONOUS CLEAR	310
TC40161BP	PROGRAMMABLE BINARY COUNTER WITH ASYNCHRONOUS CLEAR	310
TC40162BP	PROGRAMMABLE DECADE COUNTER WITH SYNCHRONOUS CLEAR	310
TC40163BP	PROGRAMMABLE BINARY COUNTER WITH SYNCHRONOUS CLEAR	310
TC40174BP/BF	HEX "D"-TYPE FLIP-FLOP	318
TC40175BP/BF	QUAD "D"-TYPE FLIP-FLOP	322
TC40192BP	PRESETTABLE BCD UP/DOWN COUNTER	326
TC40193BP	PRESETTABLE BINARY UP/DOWN COUNTER	326
TC40194BP	4-BIT BIDIRECTIONAL SHIFT REGISTER WITH RESET	296

TC4500 Series

PRODUCT NAME	FUNCTION	PAGE
TC4501BP	TRIPLE GATE (Dual 4 Input NAND+2 Input NOR/OR)	333
TC4502BP	STROBED HEX INVERTER/BUFFER	337
TC4503BP/BF	HEX NON-INVERTING 3-STATE BUFFER	341
TC4508BP	DUAL 4-BIT LATCH	344
TC4510BP/BF	PRESETTABLE BCD UP/DOWN COUNTER	349
TC4511BP/BF/BFN	BCD TO 7-SEGMENT LATCH/DECODER/DRIVER	355
TC4512BP/BF/BFN	8-CHANNEL DATA SELECTOR	360
TC4514BP	4-BIT LATCH/4-TO-16 LINE DECODER (High)	365
TC4515BP	4-BIT LATCH/4-TO-16 LINE DECODER (Low)	365
TC4516BP/BF	PRESETTABLE BINARY UP/DOWN COUNTER	370
TC4518BP/BF/BFN	DUAL BCD UP COUNTER	376
TC4519BP	4-BIT AND/OR SELECTOR	383
TC4520BP/BF/BFN	DUAL BINARY UP COUNTER	376
TC4521BP	24-STAGE FREQUENCY DIVIDER	386
TC4522BP	PROGRAMMABLE DIVIDE-BY-N 4-BIT COUNTER (BCD)	391
TC4526BP/BF	PROGRAMMABLE DIVIDE-BY-N 4-BIT COUNTER (Binary)	391
TC4527BP	BCD RATE MULTIPLIER	399
TC4528BP/BF/BFN	DUAL MONOSTABLE MULTIVIBRATOR	405
TC4530BP	DUAL 5 - INPUT MAJORITY LOGIC GATE	410
TC4531BP	12-BIT PARITY TREE	413
TC4532BP	8-BIT PRIORITY ENCODER	416
TC4538BP/BF	DUAL PRECISION MONOSTABLE MULTIVIBRATOR	420
TC4539BP/BF	DUAL 4-CHANNEL DATA SELECTOR/MULTIPLEXER	425

TC4500 Series (Continued)

PRODUCT NAME	FUNCTION	PAGE
TC4543BP/BF	BCD TO 7-SEGMENT LATCH/DECODER/DRIVER	428
TC4555BP	DUAL BINARY TO 1-OF-4 DECODER/DEMULTIPLEXER (High)	433
TC4556BP/BF	DUAL BINARY TO 1-OF-4 DECODER/DEMULTIPLEXER (Low)	433
TC4560BP	NBCD ADDER	437
TC4561BP	9's COMPLEMENTER	442
TC4572BP/BF	HEX GATE (4 INVERTER+2 Input NOR+2 Input NAND)	446
TC4583BP	DUAL SCHMITT TRIGGER	449
TC4584BP/BF/BFN	HEX SCHMITT TRIGGER	453
TC4585BP	4-BIT MAGNITUDE COMPARATOR	456

TC5000 Series

PRODUCT NAME	FUNCTION	PAGE
TC5001P	4-DIGIT DECADE COUNTER	460
TC5002BP	BCD TO 7-SEGMENT DECODER/LED DRIVER	470
TC5012BP/BF	HEX NON-INVERTING 3-STATE BUFFER	475
TC5018P	4-BIT BINARY COUNTER/CLOCK GENERATOR	478
TC5020BP	HEX LOW-TO-HIGH VOLTAGE TRANSLATOR	482
TC5022BP	BCD TO 7-SEGMENT DECODER/LED DRIVER	470
TC5023BP	16-CHANNEL MULTIPLEXER	485
TC5024BP	QUAD 3-STATE NON-INVERTING BUFFER	488
TC5025BP	QUAD 3-STATE NON-INVERTING BUFFER	488
TC5026BP	DECADE COUNTER	492
TC5027BP	BINARY COUNTER	496
TC5029BP	QUAD 2-INPUT NAND OPEN DRAIN GATE (N-CHANNEL)	500
TC5032P	6-DIGIT DECADE COUNTER	503
TC5036AP	17-STAGE HIGH SPEED FREQUENCY DIVIDER	512
TC5037P	4-DIGIT DECADE COUNTER	517
TC5043P	CR TIMER	524
TC5048AP	17-STAGE HIGH SPEED FREQUENCY DIVIDER (DYNAMIC)	512
TC5050P	DUAL 50/64-STAGE STATIC SHIFT REGISTER	531
TC5051P	4-DIGIT DECADE COUNTER	533
TC5052P	4-DIGIT DECADE COUNTER	533
TC5053P	4-DIGIT UP/DOWN DECADE COUNTER	540
TC5054P	4-DIGIT UP/DOWN DECADE COUNTER	540
TC5064BP	HEX HIGH VOLTAGE BUFFER WITH INHIBIT	547

TC5000 Series (Continued)

PRODUCT NAME	FUNCTION	PAGE
TC5065BP	HEX HIGH VOLTAGE BUFFER WITH INHIBIT	547
TC5066BP	7-LINE HIGH VOLTAGE BUFFER	551
TC5067BP	7-LINE HIGH VOLTAGE BUFFER	551
TC5068BP	BCD-TO-7 SEGMENT LATCH/DECODER/DRIVER	555
TC5069BP	BCD-TO-7 SEGMENT LATCH/DECODER/DRIVER	555
TC5070P	6 DIGIT UNIVERSAL COUNTER "999999"	561
TC5071P	6 DIGIT UNIVERSAL TIMER "995959"	561
TC5072P	6 DIGIT UNIVERSAL TIMER "595999"	561

TC5000 Series/TC35000 Series (A/D,D/A CONVERTER Series)

PRODUCT NAME	FUNCTION	PAGE
TC5090AP	8 BIT A/D CONVERTER	575
TC5091AP	8 BIT A/D CONVERTER (WITH 6ch ANALOG MPX.)	590
TC5092AP	13 BIT A/D CONVERTER (WITH 8ch ANALOG MPX.)	607
TC5093AP	8 BIT A/D CONVERTER (WITH 8ch ANALOG MPX.)	620
TC35094P	8 BIT A/D CONVERTER	629
TC35095AP/AF	8 BIT 8ch SERIAL I/O A/D CONVERTER	637
TC35096AP/AF	8 BIT 4ch SERIAL I/O A/D CONVERTER	646
TC35097AP	8 BIT 2ch SERIAL I/O A/D CONVERTER	655
TC35098AP	8 BIT SERIAL I/O A/D CONVERTER	663
TC35080P	10 BIT 8ch SERIAL I/O A/D CONVERTER	672
TC35081P/F	10 BIT BYTE OUTPUT A/D CONVERTER	683
TC35082P/F	10 BIT PARALLEL OUTPUT A/D CONVERTER	693
TC35083P/F	10 BIT 2ch PARALLEL OUTPUT A/D CONVERTER	703
TC35071P/F	8 BIT A/D CONVERTER(20 MSPS)	714
TC35072P/F	8 BIT A/D CONVERTER(15 MSPS)	—
TC35010P/F	8 BIT D/A CONVERTER(20 MSPS)	722

## FUNCTION SELECTION TABLE

FUNCTION		DEVICES	
GATES BUFFERS	NAND	TC4011B, TC4011UB, TC4012B, TC4023B, TC4068B	
	NOR	TC4000B, TC4001B, TC4001UB, TC4002B, TC4025B TC4078B	
	AND	TC4068B, TC4073B, TC4081B, TC4082B	
	OR	TC4071B, TC4072B, TC4075B, TC4078B	
	INVERTER	TC4007UB, TC4009UB, TC4049B, TC4069UB	
	BUFFERS		TC4009UB, TC4010B, TC4049B, TC4050B
		3-STATE	TC4502B, TC5012B, TC5024B, TC5025B, TC4503B
		OPEN DRAIN	TC40107B, TC5029B, TC5064B, TC5065B, TC5066B, TC5067B
	MULTIFUNCTION	TC4019B, TC4030B, TC4077B, TC4085B, TC4086B, TC4501B TC4519B, TC4530B, TC4572B	
	SCHMITT TRIGGER	TC4093B, TC4583B, TC4584B	
LEVEL SHIFTER	TC4009UB, TC4010B, TC4049B, TC4050B, TC5020B		
FLIP-FLOP		TC4013B, TC4027B, TC40174B, TC40175B	
LATCHES		TC4042B, TC4043B, TC4044B, TC4099B, TC4508B	
MULTIVIBRATORS		TC4047B, TC4528B, TC4538B	
DECODERS		TC4028B, TC4514B, TC4515B, TC4555B, TC4556B	
DISPLAY DRIVER	LED	TC4511B, TC5002B, TC5022B	
	LCD	TC4054B, TC4055B, TC4056B, TC4543B	
	DIGITRON	TC5068B, TC5069B	
ENCODER		TC4532B	
REGISTERS	SHIFT	TC4006B, TC4014B, TC4015B, TC4021B, TC4034B, TC4035B TC4094B, TC40104B, TC40194B, TC5050	
	STORAGE	TC4076B	
COUNTERS	BINARY	TC4029B, TC40161B, TC40163B, TC40193B, TC4516B TC4520B, TC5018B, TC5027B	
	DECADE	TC4029B, TC40160B, TC40162B, TC40192B, TC4510B TC4518B, TC5026B	
	DIVIDER	TC4020B, TC4024B, TC4040B, TC4521B, TC5036A, TC5048A	
	DIVIDE-BY-"N"	TC4018B, TC40102B, TC40103B, TC4522B, TC4526B	
	N-DIGIT DECADE	TC5001, TC5032, TC5037, TC5051, TC5052, TC5053, TC5054, TC5070	
	OTHER	TC4017B, TC4022B	
TIMERS		TC5043, TC5071, TC5072	
MULTI- PLEXERS	ANALOG	TC4051B, TC4052B, TC4053B	
	DIGITAL	TC4512B, TC4539B, TC5023B	
ARITHMETIC CIRCUITS	ADDER	TC4008B, TC4032B, TC4038B, TC4560B	
	COMPARATOR	TC4063B, TC4585B	
	PARITY TREE	TC4531B	
	RATE MULTIPLIER	TC4527B	
	9's COMPLEMENTER	TC4561B	
MEMORIES (RAM)		TC4036B, TC4039B	
ANALOG SWITCH		TC4016B, TC4066B	
OTHER		TC40117B	
A/D, D/A CONVERTERS		TC5090A, TC5091A, TC5092A, TC5093A, TC35094, TC35095A, TC35096A, TC35097A, TC35098A, TC35080, TC35081, TC35082, TC35083, TC35071, TC35072, TC35010	