EPSON

SPC7221F0A

SCSI-2 & CD-ROM Decoder

- Supporting SCSI-2 specification ANSI X3.131
- 20-times speed CD-ROM decoding operation

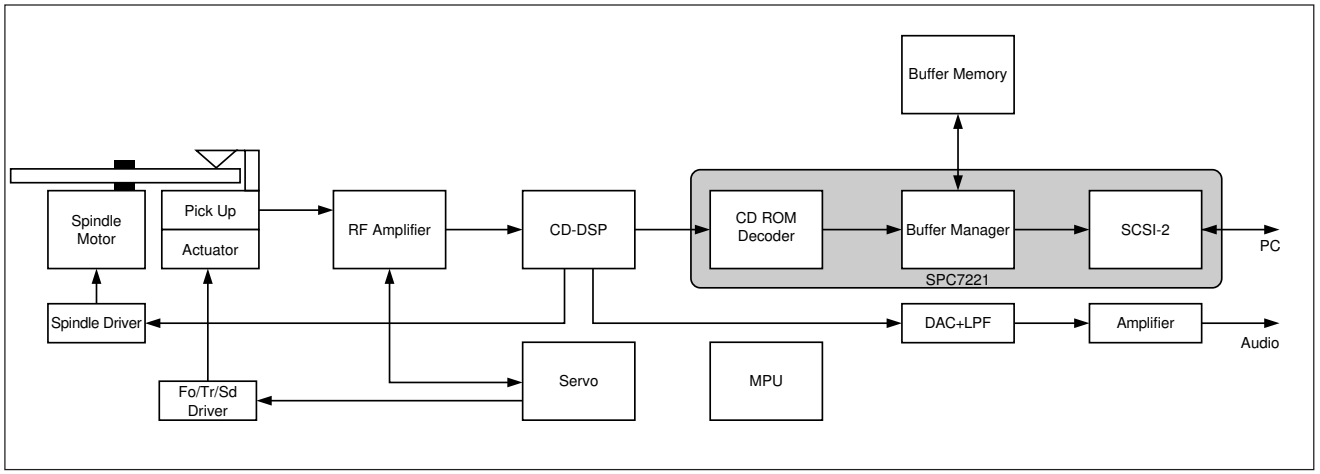
■ OUTLINE

SPC7221F0A is LSIs of CD-ROM decoder and host interface. It supports decoding of 20-times speed and interface of the SCSI-2 protocol function. It is supporting CD-ROM media conforming to CD-DA, CD-ROM and CD-ROM XA format.

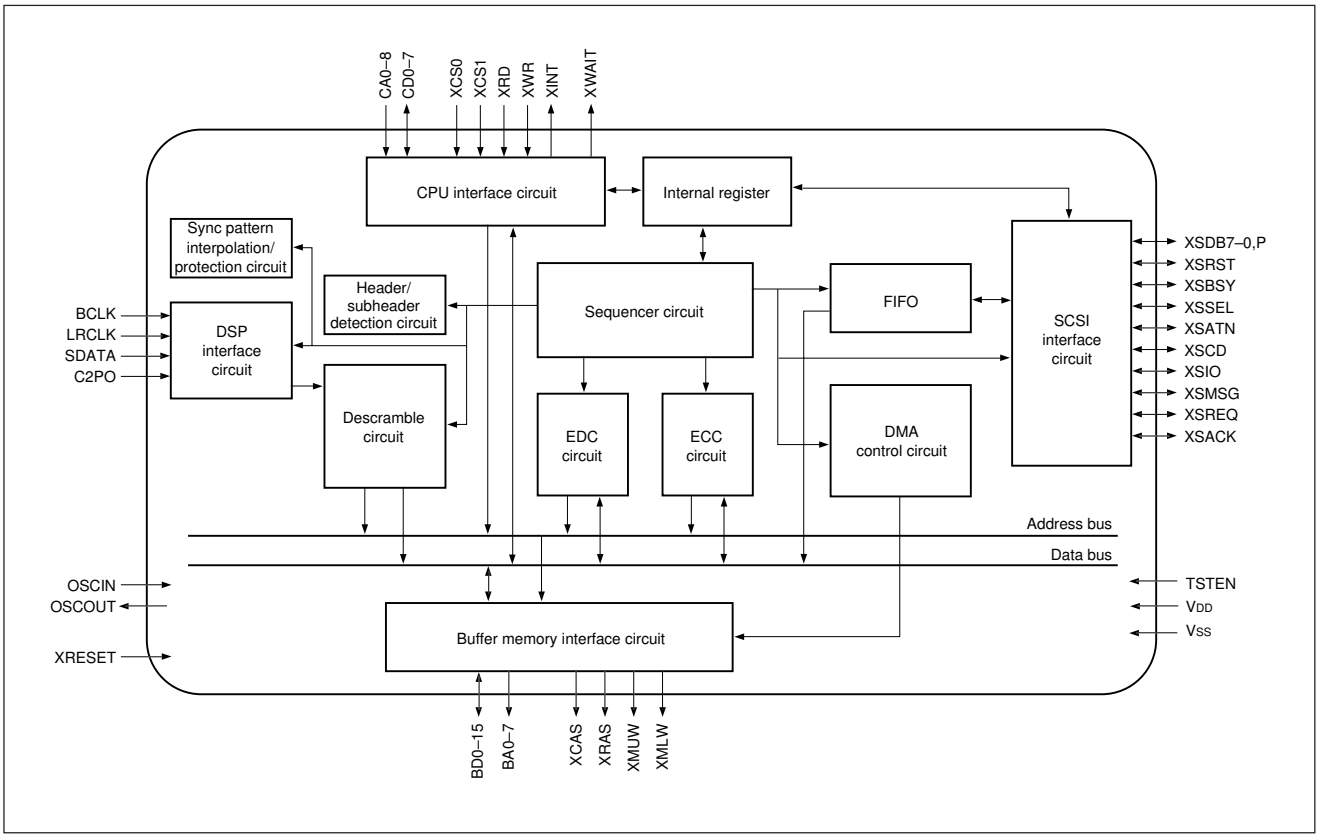
■ FEATURES

- Fully compatible with SCSI-2 specification ANSI X3.131.
- Supports both synchronous and asynchronous data transmission mode.
  Sync transmission mode 8.5Mbyte/s Async transmission mode 4.2Mbyte/s
- 20-times speed decoding operations.
- Supports PnP SCSI SCAM level 1 (Built-in SCAM selection register)
- Realtime CD-ROM ECC P-1word, Q-1word.
- Supports various CD-DSP device interface.
- Supports high speed 8bit MPU interface.
- Direct Addressing 64kword × 16bit DRAM.
- Built-in oscillation circuit 33.8688MHz.
- Supply voltage 5.0V ± 10%
- Package QFP5-128pin

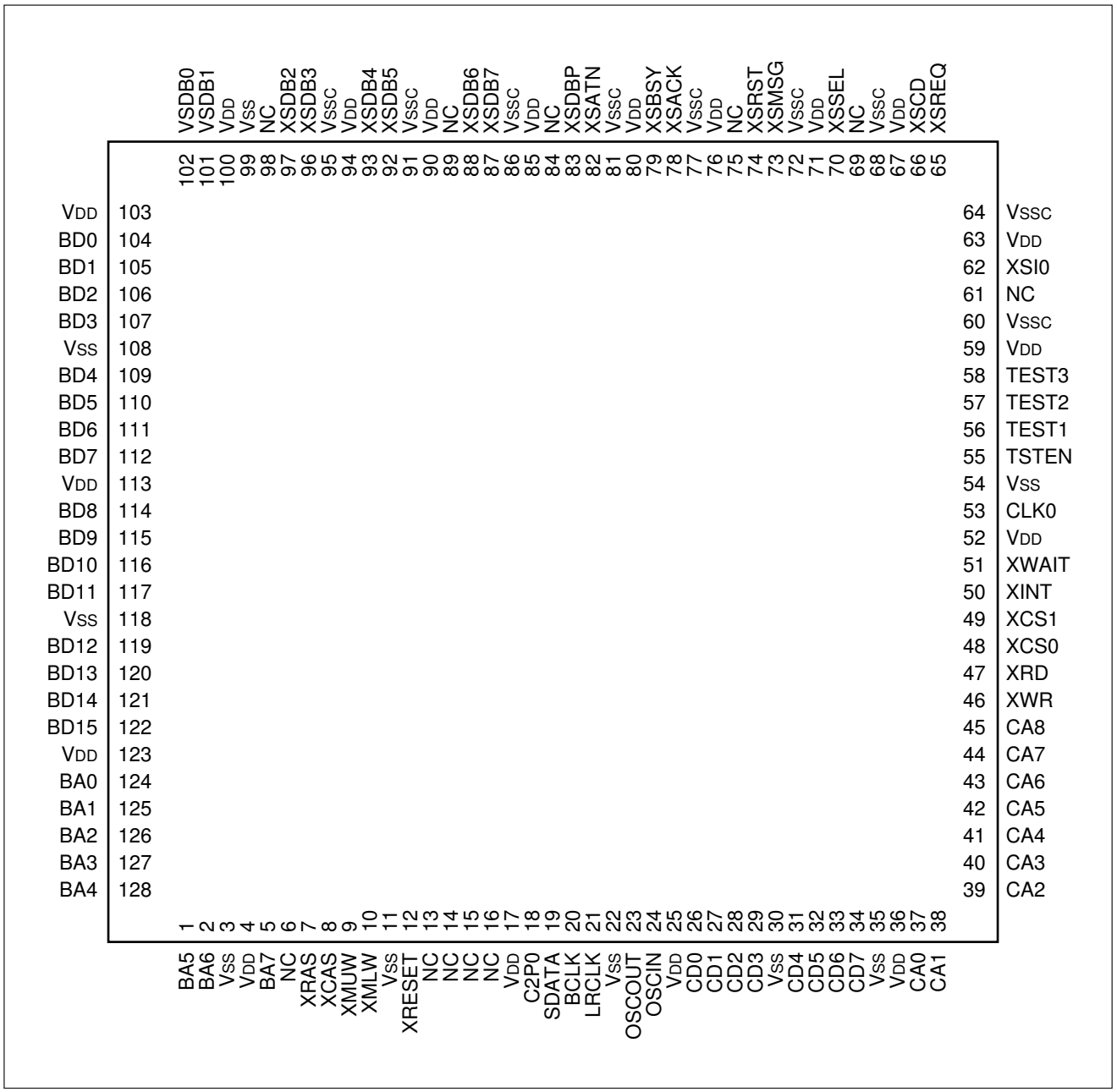
■ BLOCK DIAGRAM (CD-ROM Drives)



■ BLOCK DIAGRAM



■ PIN DIAGRAM


VSDB0 102
VSDB1 101
VDD 100
VSS 99
NC 98
XSDB2 97
XSDB3 96
VSSC 95
VDD 94
XSDB4 93
XSDB5 92
VSSC 91
VDD 90
NC 89
XSDB6 88
XSDB7 87
VSSC 86
VDD 85
NC 84
XSDBP 83
XSATN 82
VSSC 81
VDD 80
XSBSY 79
XSACK 78
VSSC 77
VDD 76
NC 75
XSRST 74
XSMSG 73
VSSC 72
VDD 71
XSSEL 70
NC 69
VSSC 68
VDD 67
XSCD 66
XSREQ 65
VDD 103
BD0 104
BD1 105
BD2 106
BD3 107
VSS 108
BD4 109
BD5 110
BD6 111
BD7 112
VDD 113
BD8 114
BD9 115
BD10 116
BD11 117
VSS 118
BD12 119
BD13 120
BD14 121
BD15 122
VDD 123
BA0 124
BA1 125
BA2 126
BA3 127
BA4 128
64 VSSC
63 VDD
62 XSI0
61 NC
60 VSSC
59 VDD
58 TEST3
57 TEST2
56 TEST1
55 TSTEN
54 VSS
53 CLK0
52 VDD
51 XWAIT
50 XINT
49 XCS1
48 XCS0
47 XRD
46 XWR
45 CA8
44 CA7
43 CA6
42 CA5
41 CA4
40 CA3
39 CA2
1 BA5
2 BA6
3 VSS
4 VDD
5 BA7
6 NC
7 XRAS
8 XCAS
9 XMUW
10 XMLW
11 VSS
12 XRESET
13 NC
14 NC
15 NC
16 NC
17 VDD
18 C2P0
19 SDATA
20 BCLK
21 LRCLK
22 VSS
23 OSCOUT
24 OSCIN
25 VDD
26 CD0
27 CD1
28 CD2
29 CD3
30 VSS
31 CD4
32 CD5
33 CD6
34 CD7
35 VSS
36 VDD
37 CA0
38 CA1

■ PIN DESCRIPTION

"X" preceding a pin name indicates that the control signal is low active.

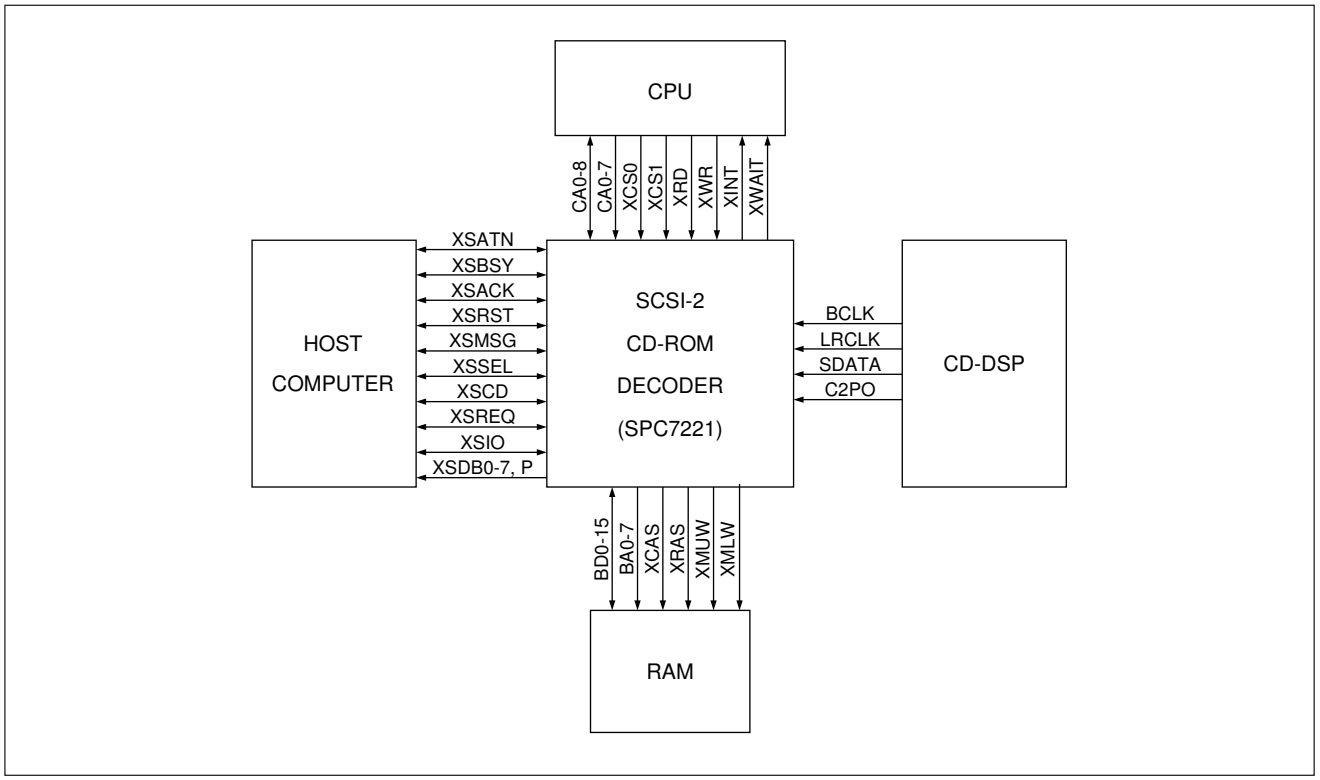
Pin No.	Pin names	I/O	Function
1	BA5	O	Buffer memory address bus Bit 5
2	BA6	O	Buffer memory address bus Bit 6
3	VSS	P	GND pin
4	VDD	P	Power supply pin
5	BA7	O	Buffer memory address bus Bit 7
6	N.C.		
7	XRAS	O	Buffer memory low address strobe signal
8	XCAS	O	Buffer memory column address strobe signal
9	XMUW	O	Buffer memory write strobe signal (high-order byte)
10	XMLW	O	Buffer memory write strobe signal (low-order byte)
11	VSS	P	GND pin
12	XRESET	I	Reset signal
13	N.C.		
14	N.C.		
15	N.C.		
16	N.C.		
17	VDD	P	Power supply pin
18	C2PO	I	SDATA signal C2 pointer signal
19	SDATA	I	Serial data input from DSP
20	BCLK	I	Bit clock input for SDATA signal strobe
21	LRCLK	I	LR channel clock
22	VSS	P	GND pin
23	OSCOUT	O	Built-in oscillation circuit output pin
24	OSCIN	I	Built-in oscillation circuit input
25	VDD	P	Power supply pin
26	CD0	Ipu/O	CPU data bus Bit 0
27	CD1	Ipu/O	CPU data bus Bit 1
28	CD2	Ipu/O	CPU data bus Bit 2
29	CD3	Ipu/O	CPU data bus Bit 3
30	VSS	P	GND pin
31	CD4	Ipu/O	CPU data bus Bit 4
32	CD5	Ipu/O	CPU data bus Bit 5
33	CD6	Ipu/O	CPU data bus Bit 6
34	CD7	Ipu/O	CPU data bus Bit 7
35	VSS	P	GND pin
36	VDD	P	Power supply pin
37	CA0	I	CPU Address bus Bit 0
38	CA1	I	CPU Address bus Bit 1
39	CA2	I	CPU Address bus Bit 2
40	CA3	I	CPU Address bus Bit 3
41	CA4	I	CPU Address bus Bit 4
42	CA5	I	CPU Address bus Bit 5
43	CA6	I	CPU Address bus Bit 6
44	CA7	I	CPU Address bus Bit 7
45	CA8	I	CPU Address bus Bit 8
46	XWR	I	CPU write signal
47	XRD	I	CPU read signal
48	XCS0	I	Built-in register access Chip select signal
49	XCS1	I	Buffer memory access Chip select signal
50	XINT	O	Interrupt request signal

Pin No.	Pin names	I/O	Function
51	XWAIT	Ood	Wait request signal
52	VDD	P	Power supply signal
53	CLKO	O	Clock output
54	VSS	P	GND pin
55	TSTEN	Ipd	Test input enable (normally LOW)
56	TEST1	I	Test input (normally LOW)
57	TEST2	I	Test input (normally LOW)
58	TEST3	I	Test input (normally LOW)
59	VDD	P	Power supply signal
60	VSSC	P	GND pin
61	N.C.		
62	XSIO	I/Ood	SCSI I/O
63	VDD	P	Power supply signal
64	VSSC	P	GND pin
65	XSREQ	I/Ood	SCSI REQ
66	XSCD	I/Ood	SCSI C/D
67	VDD	P	Power supply signal
68	VSSC	P	GND pin
69	N.C.		
70	XSSEL	I/Ood	SCSI SEL
71	VDD	P	Power supply signal
72	VSSC	P	GND pin
73	XSMSG	I/Ood	SCSI MSG
74	XSRST	I/Ood	SCSI RST
75	N.C.		
76	VDD	P	Power supply signal
77	VSSC	P	GND pin
78	XSACK	I/Ood	SCSI ACK
79	XSBSY	I/Ood	SCSI BSY
80	VDD	P	Power supply signal
81	VSSC	P	GND pin
82	XSATN	I/Ood	SCSI ATN
83	XSDBP	I/Ood	SCSI data parity (odd parity)
84	N.C.		
85	VDD	P	Power supply signal
86	VSSC	P	GND pin
87	XSDB7	I/Ood	SCSI data buses Bit 7
88	XSDB6	I/Ood	SCSI data buses Bit 6
89	N.C.		
90	VDD	P	Power supply signal
91	VSSC	P	GND pin
92	XSDB5	I/Ood	SCSI data buses Bit 5
93	XSDB4	I/Ood	SCSI data buses Bit 4
94	VDD	P	Power supply signal
95	VSSC	P	GND pin
96	XSDB3	I/Ood	SCSI data buses Bit 3
97	XSDB2	I/Ood	SCSI data buses Bit 2
98	N.C.		
99	VSS	P	GND pin
100	VDD	P	Power supply signal

Pin No.	Pin names	I/O	Function
101	XSDB1	I/Ood	SCSI data bus Bit 1
102	XSDB0	I/Ood	SCSI data bus Bit 0
103	VDD	P	Power supply pin
104	BD0	I/Opu	Buffer memory data bus Bit 0
105	BD1	I/Opu	Buffer memory data bus Bit 1
106	BD2	I/Opu	Buffer memory data bus Bit 2
107	BD3	I/Opu	Buffer memory data bus Bit 3
108	VSS	P	GND pin
109	BD4	I/Opu	Buffer memory data bus Bit 4
110	BD5	I/Opu	Buffer memory data bus Bit 5
111	BD6	I/Opu	Buffer memory data bus Bit 6
112	BD7	I/Opu	Buffer memory data bus Bit 7
113	VDD	P	Power supply pin
114	BD8	I/Opu	Buffer memory data bus Bit 8
115	BD9	I/Opu	Buffer memory data bus Bit 9
116	BD10	I/Opu	Buffer memory data bus Bit 10
117	BD11	I/Opu	Buffer memory data bus Bit 11
118	VSS	P	GND pin
119	BD12	I/Opu	Buffer memory data bus Bit 12
120	BD13	I/Opu	Buffer memory data bus Bit 13
121	BD14	I/Opu	Buffer memory data bus Bit 14
122	BD15	I/Opu	Buffer memory data bus Bit 15
123	VDD	P	Power supply pin
124	BA0	O	Buffer memory address bus Bit 0
125	BA1	O	Buffer memory address bus Bit 1
126	BA2	O	Buffer memory address bus Bit 2
127	BA3	O	Buffer memory address bus Bit 3
128	BA4	O	Buffer memory address bus Bit 4

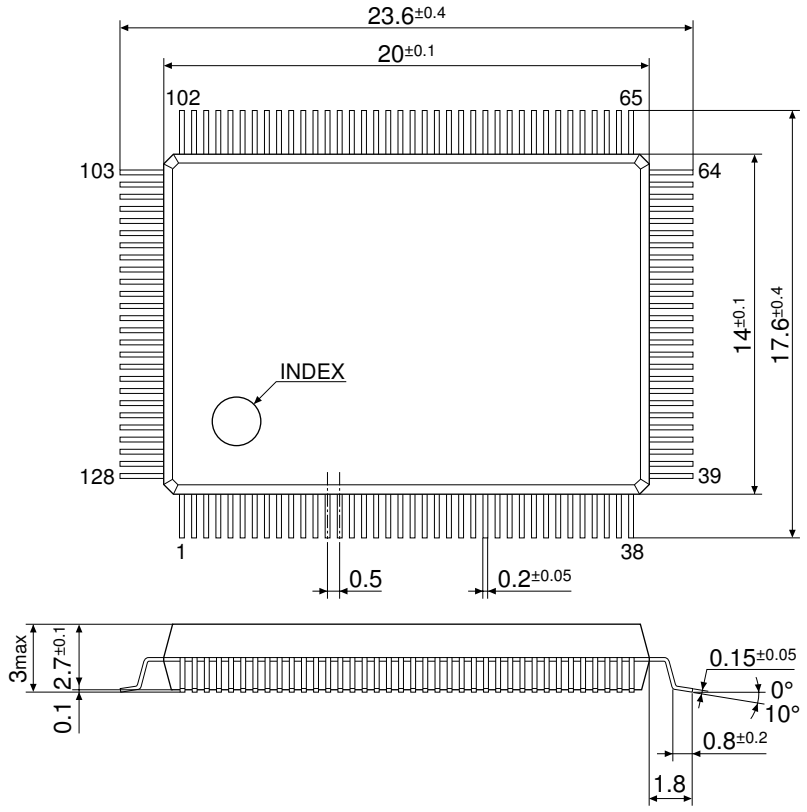
Note: I : Input
Ipu : Pull-up input
Ipd : Pull-down input
O : Output
Ood : Open drain output
Ots : 3-state output

■ BASIC EXTERNAL CONNECTION DIAGRAM



■ PACKAGE DIMENSIONS

Plastic QFP5-128pin



Unit : mm

SEIKO EPSON CORPORATION
ELECTRONIC DEVICE MARKETING DEPARTMENT

IC Marketing & Engineering Group
421-8 Hino, Hino-shi, Tokyo 191, JAPAN
Phone: 0425-87-5816 FAX: 0425-87-5624

International Marketing Department I (Europe, U.S.A.)
421-8 Hino, Hino-shi, Tokyo 191, JAPAN
Phone: 0425-87-5812 FAX: 0425-87-5564

International Marketing Department II (Asia)
421-8 Hino, Hino-shi, Tokyo 191, JAPAN
Phone: 0425-87-5814 FAX: 0425-87-5110

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