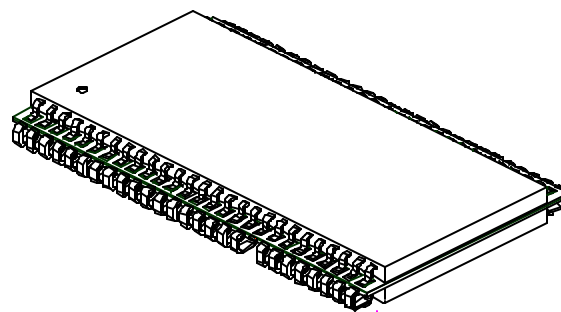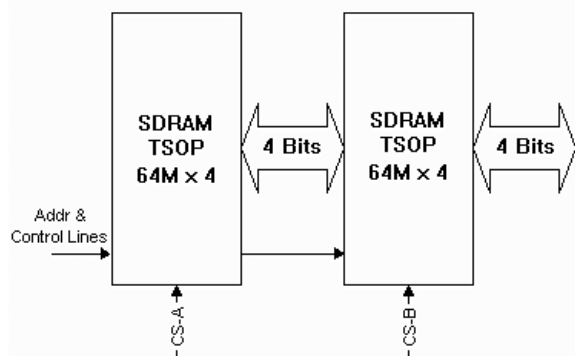*Irvine Sensors Corporation*

Microelectronics Products Division

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512Mbit (128M x 4) Synchronous DRAM Memory Stack

Features:

❑ Low Profile: same PCB footprint as a monolithic TSOP

❑ Provides a cost-effective emulation of a 512 Mbit SDRAM by using 2 low cost 256 Mbit SDRAMs.

❑ Low cost, economical for volume commercial applications

❑ JEDEC Standard 3.3V power supply

Dimensions: 0.890"L x 0.490"W x 0.100"H
(+/- 0.005" on all dimensions)

General Description

The Irvine Sensor's Microelectronics Products Division's 512 Mbit SDRAM memory stack provides a cost-effective interim alternative to the monolithic 512 Mbit SDRAM. Boards can be designed to accept either the monolithic 256Mbit TSOP or the 512Mbit stack interchangeably. This allows for a generation upgrade without a board redesign. When the monolithic 512Mbit TSOP becomes more cost effective than the 256Mbit based stack, minor modification to the board design can make it compatible with either the monolithic 512Mbit TSOP or the future 1Gbit stack. Base design uses Samsung K4S560432 TSOPs but these stacks can be manufactured using customer furnished TSOPs from a variety of manufacturers.

Application note: Do not exceed 220°C when soldering part to PCB.

Irvine Sensors Corporation
Microelectronics Products Division

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MPD PART NUMBERING SYSTEM

Suffix for
Consigned Material

Primary Part Number

IS   SD   128M   4   STB-   XXX   -   X   *–XX*   *–XXX*

Irvine Sensors

Memory
Depth

Memory
Width

Memory Technology
AS = Asynchronous SRAM
SS = Synchronous SRAM
ED = EDO DRAM
FD = Fast Page Mode DRAM
SD = Synchronous DRAM
EE = EE
OF = NOR Flash
NF = NAND Flash

Made With
A = by 1
B = by 4
C = by 8
D = by16

Stack Type
CB = Ceramic BGA
PB = Polyimide BGA
LT = Leaded TSOP
TB = TSOP BGA
ST = Skinny TSOP

Speed
XXX (MHZ for
synchronous parts
XXX (NS for
asynchronous
parts

Grade
C = Commercial
   (0 C to 70 C)
I = Commercial @ Industrial
   (-40 C to 85 C)
M = Commercial @ Mil
   (-55 C to 125 C)

Supplier ID
00 = Not Specified
IS = Irvine Sensors
** = Contact Irvine-
   Sensors for Your
   Supplier ID No.

Manufacturers
Identifier
0 = Not Specified
1 = Samsung
2 = Toshiba
3 = Micron
4 = Hitachi
5 = Mitsubishi
6 = NEC
7 = Hyundai
8 = Fujitsu
9 = IBM
A – Infineon
B – Vitelic
C – Oki
D – LG Semicon

Die
Revision
0 = Not
Specified

CAS
Latency
2 = CL2
3 = CL3

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Pin Names

Pin #	Name	Name	Pin #
1	Vcc	Vss	54
2	N/C	N/C	53
3	Vddq	Vssq	52
4	N/C	N/C	51
5	DQ0	DQ3	50
6	Vssq	Vddq	49
7	N/C	N/C	48
8	N/C	N/C	47
9	Vddq	Vssq	46
10	N/C	N/C	45
11	DQ1	DQ2	44
12	Vssq	Vddq	43
13	N/C	N/C	42
14	Vdd	Vss	41
15	CS-B	NC/RFU	40
16	WE	DQM	39
17	CAS	CLK	38
18	RAS	CKE	37
19	CS-A	A12	36
20	BA0	A11	35
21	BA1	A9	34
22	A10/AP	A8	33
23	A0	A7	32
24	A1	A6	31
25	A2	A5	30
26	A3	A4	29
27	Vcc	Vss	28

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For more information contact MPD Sales:
Phone 1-714-435-8291   Fax 1-714-444-8764   E-mail mpdsales@irvine-sensors.com
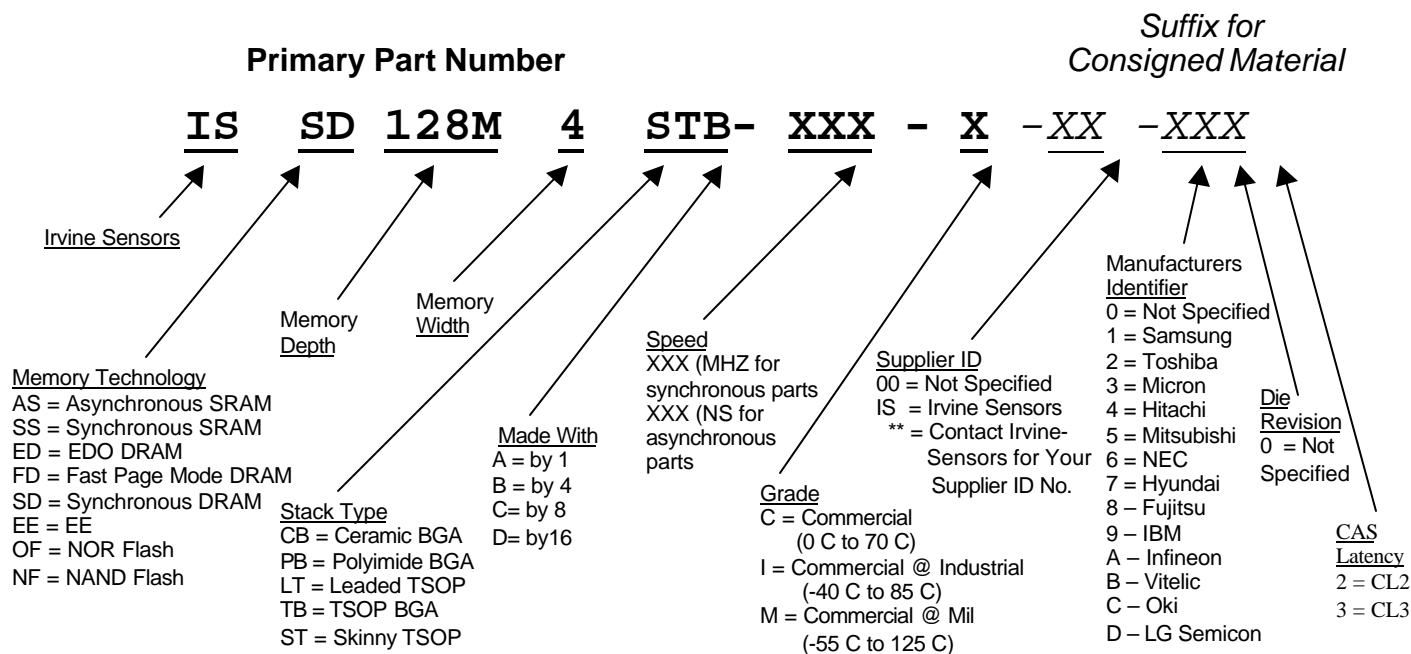Irvine Sensors Corporation, 3001 Redhill Avenue, Building 3, Costa Mesa, CA 92656-4529