VDIC ASYNCHRONOUS STATIC RAM

VDSR4M08XS44XX1C12 USER MANUAL

Version : B0

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Contents

VDIC-SRAM

HIGH-SPEED 5.0V 512K × 8 bit

ASYNCHRONOUS STATIC RAM

1 Description

The VDSR4M08XS44XX1C12 is a high-speed access time, high-density Static Random Access Memory with 4Mbit. Manufactured with VDIC Very Dense SIP technology, this block is stacked by one SRAM die employing CMOS process. It is organized as 512K×8bit wide data interface .The block can be selected separately with dedicated #CE.

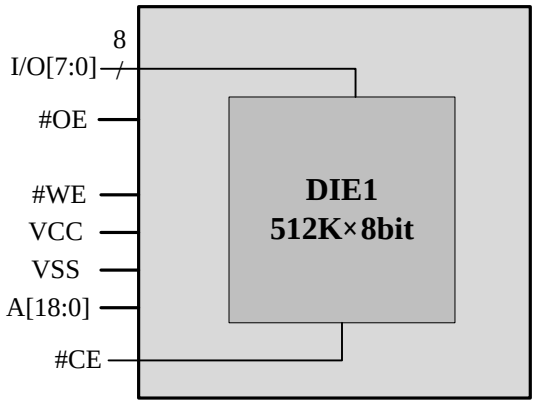
Low interconnect parasitic capacitance of the stacking technology, by reducing the connection length, allows this SRAM module to be useful for a variety of high bandwidth, high performance and high density memory system applications.

The VDSR4M08XS44XX1C12 is available in a 44-pin SOP package.

2 Features

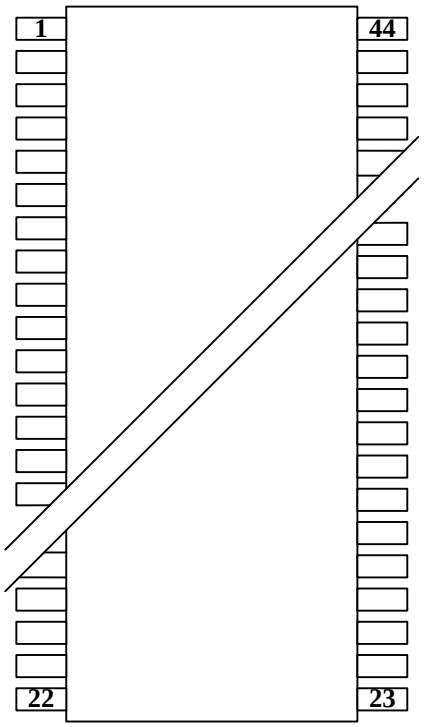
- High-speed access time: 15ns
- Low Active Power: 150 mW (typical)
- Low Standby Power: 10 mW (typical)
  CMOS standby
- TTL compatible interface levels
- Single 5V ±0.5 power supply
- Fully static operation: no clock or refresh required

3 Block Diagram



4 Pin Descriptions

Pin Id	Pin #		Pin Id
NC	1	44	**NC**
NC	2	43	**NC**
A0	3	42	**NC**
A1	4	41	**A18**
A2	5	40	**A17**
A3	6	39	**A16**
A4	7	38	**A15**
#CE	8	37	**#OE**
I/O0	9	36	**I/O7**
I/O1	10	35	**I/O6**
VCC	11	34	**VSS**
VSS	12	33	**VCC**
I/O2	13	32	**I/O5**
I/O3	14	31	**I/O4**
#WE	15	30	**A14**
A5	16	29	**A13**
A6	17	28	**A12**
A7	18	27	**A11**
A8	19	26	**A10**
A9	20	25	**NC**
NC	21	24	**NC**
NC	22	23	**NC**



Pin	Name	Function
$\overline{CE}$	Block select	Chip Enable Input
A0 ~ A18	Address	Address Inputs
$\overline{WE}$	Write enable	Write Enable Input
$\overline{OE}$	Output enable	Output Enable Input
I/O0~I/O7	Data input/output	Data inputs/outputs 8-bit wide bus
Vcc/Vss	Power supply/ground	Power and ground for the input/output buffers and core logic.
NC	No connection	This pin is recommended to be left No Connection on the device.

5 Command Operation

5.1 Absolute Maximum Ratings

Parameter	Symbol	Maximum ratings	Unit
Voltage on V_{CC} supply relative to Vss	V_{CC}	-0.5 to +7.0	V
Voltage on any pin relative to Vss	V_{IN}	-0.5 to +7.0	V
Power Dissipation	P_D	1.5	W
Operating Temperature Range	T_{OPR}	-55 to +125	℃
Storage Temperature Range	T_{STG}	-65 to +150	℃

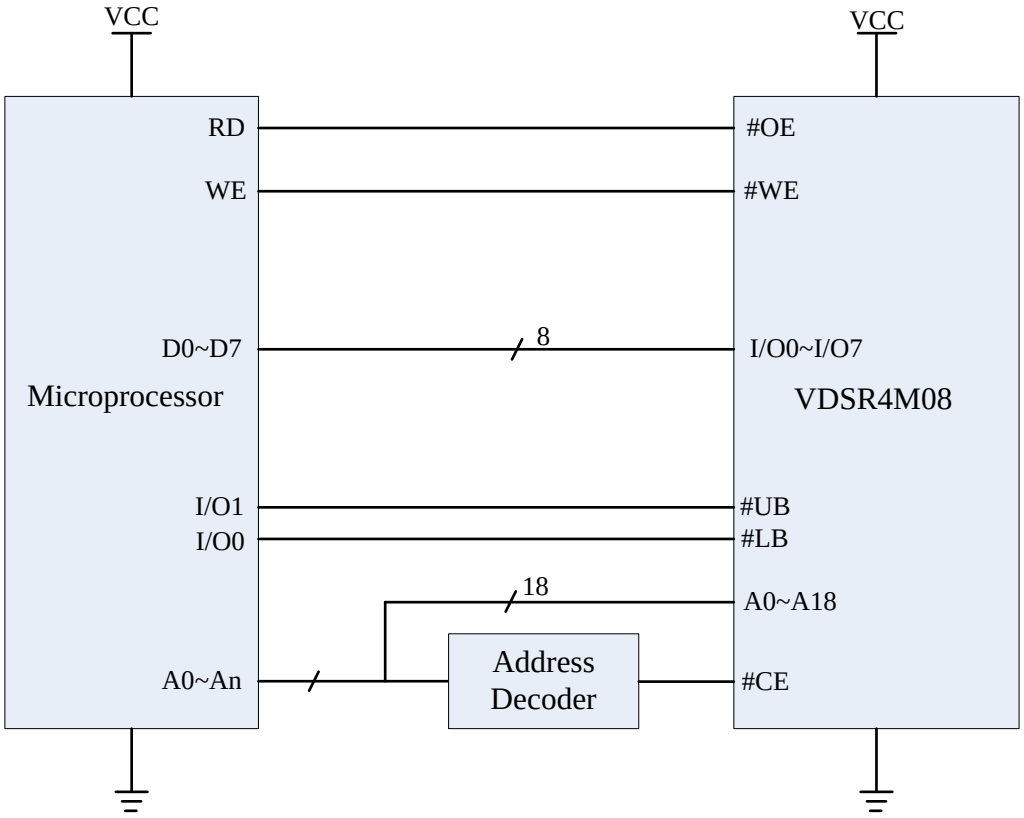
5.2 DC Electrical Characteristics

Parameter	Symbol	TEST CONDITIONS	Min	Max	Unit
Output voltage low level	V_{OL}	V_{cc}=5.5V , I_{OL} = 1mA	——	0.4	V
Output voltage high level	V_{OH}	V_{cc}=4.5V,I_{OH}= -0.5mA	2.4	——	V

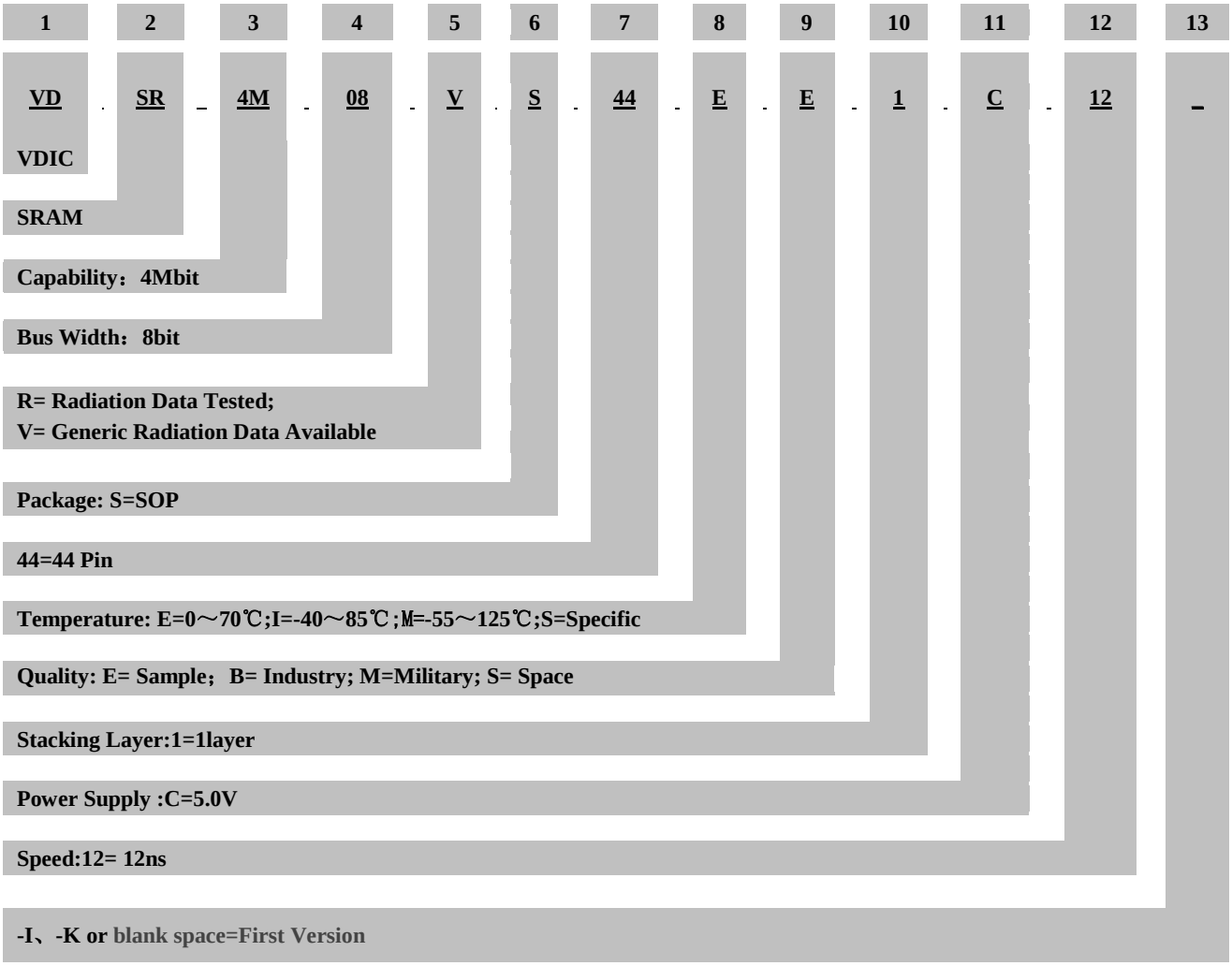
5.3 Recommended DC Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.5	5.0	5.5	V
Input high voltage	V_{IH}	2.2	——	V_{CC}+0.5	V
Input low voltage	V_{IL}	-0.3	——	0.8	V

6 TYPICAL APPLICATION



7 Ordering Information

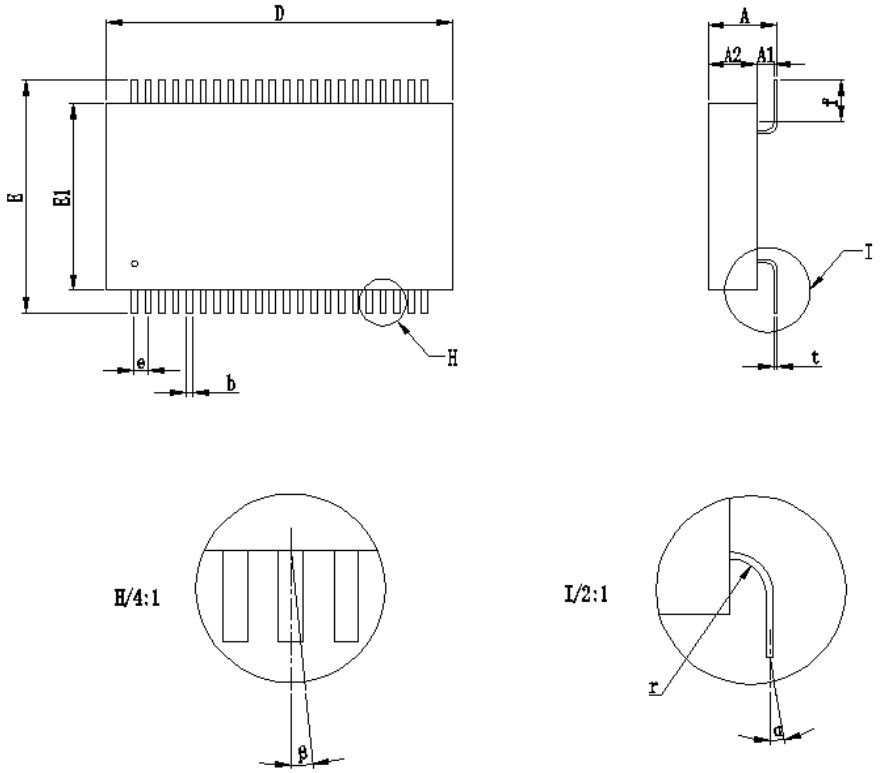


Part Number	Capacity (bit)	Bus Width (bit)	Radiation			Packaging	Temperature (℃)
			TID[1]	SEL[2]	SEU[3]		
VDSR4M08VS44EE1C12	4M	8	-	-	-	SOP44	0 ~ + 70
VDSR4M08VS44IB1C12	4M	8	-	-	-	SOP44	-40 ~ + 85
VDSR4M08VS44MB1C12	4M	8	-	-	-	SOP44	-55 ~ + 125
VDSR4M08VS44MM1C12	4M	8	-	-	-	SOP44	-55 ~ + 125

[1] TID: Total Dose（Krads(Si)）
[2] SEL: LET Threshold（Mev.cm2/mg）
[3] SEU:SEU Threshold （Mev.cm2/mg）

VDSR4M08RS44MS1C12	4M	8	>50	>80	0.7	SOP44	-55 ~ + 125

8 Package Dimensions



	Min	Max
A	3.70	4.40
A2	2.50	3.10
D	19.80	20.20
E	13.40	13.80
E1	10.80	11.20
f	2.00	
b	0.35	
e	0.80	
r	1.00	
t	0.20	
α	≤3°	
β	≤3°	
NOTE：1. Unit：mm 2. A1= A - A2		

9 REVISION HISTORY

Revision	Date	Description of Change
A0	Nov 3,2015	First Created
A1	Mar 14,2016	Modified the PIN DESCRIPTIONS
A2	Aug 23,2016	Modified the ORDERING INFORMATION
A3	Jan 9,2017	Modified the PACKAGE DIMENSIONS
A4	Oct.25,2017	Changed company's name to Zhuhai Orbita Aerospace Science & Technology Co.，Ltd
A5	Nov.15.2017	Modified FEATURES
B0	Apr 13,2018	Add or reduce chapters