

RoHS Compliant

4GB ECC DDR4 SDRAM UDIMM

Industrial / Halogen free

Product Specifications

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Version 0.4



Apacer Technology Inc.

1F., No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City 236, Taiwan

Tel: +886-2-2267-8000 Fax: +886-2-2267-2261

www.apacer.com

General Description

Apacer **D31.23185S.001** is a 512M x 72 DDR4 SDRAM (Synchronous DRAM) ECC DIMM. This high-density memory module consists of 9 pieces 512M x 8 bits DDR4 synchronous DRAMs in FBGA packages and a 4K Bits EEPROM. The module is a 288-pins dual in-line memory module and is intended for mounting into a connector socket. The following provides general specifications of this module.

Ordering Information

Part Number	Bandwidth	Speed Grade	Max Frequency	CAS Latency
D31.23185S.001	21.3 GB/sec	2666 Mbps	1333 MHz	CL19

Density	Organization	Component	Rank
4GB	512M x 72	512M x8*9	1

Key Parameters

MT/s	DDR4-1866	DDR4-2133	DDR4-2400	DDR4-2666	Unit
Grade	-CL13	-CL15	-CL17	-CL19	
tCK (min)	1.07	0.93	0.83	0.75	ns
CAS latency	13	15	17	19	tCK
tRCD (min)	13.92	14.06	14.16	14.25	ns
tRP (min)	13.92	14.06	14.16	14.25	ns
tRAS (min)	34	33	32	32	ns
tRC (min)	47.92	47.05	46.16	46.25	ns
CL-tRCD-tRP	13-13-13	15-15-15	17-17-17	19-19-19	tCK

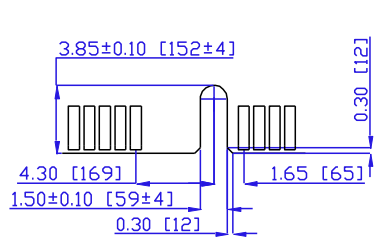
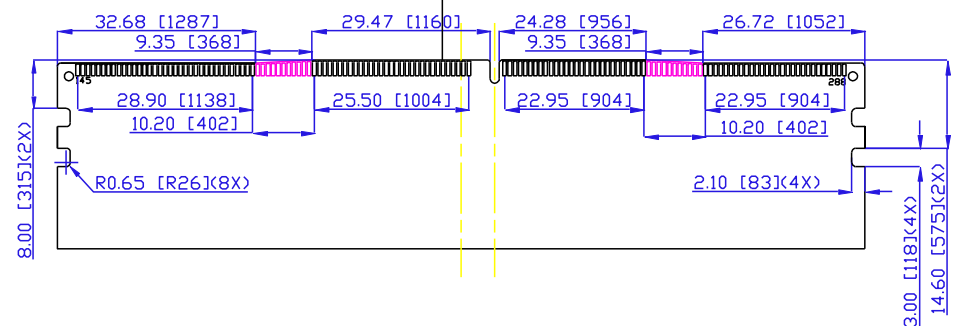
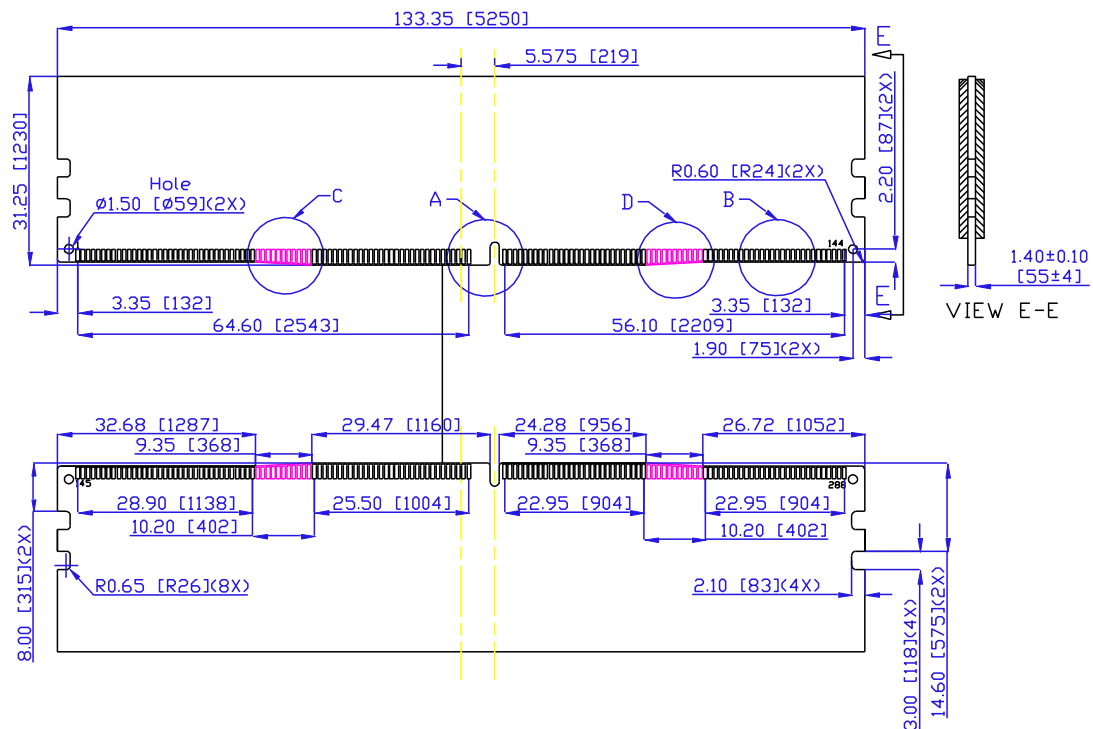
Specifications:

- ◆ Support ECC error detection and correction
- ◆ On-DIMM thermal sensor : Yes
- ◆ Organization: 512 words x 72 bits, 1 rank
- ◆ Integrating 9 pieces of 4G bits DDR4 SDRAM sealed FBGA
- ◆ Package: 288-pin socket type dual in-line memory module (ECC DIMM)
- ◆ PCB: height 31.25 mm, lead pitch 0.85 mm (pin),
- ◆ Serial Presence Detect (SPD)
- ◆ Power Supply: VDD=1.2V (1.14V to 1.26V)
- ◆ VDDQ = 1.2V (1.14V to 1.26V)
- ◆ VPP = 2.5V (2.375V to 2.75V)
- ◆ VDDSPD = 2.2V to 3.6V
- ◆ 16 internal banks
- ◆ CAS Latency (CL): 10, 11, 12, 13, 14, 15,16,17,18,19,20
- ◆ CAS Write Latency (CWL): 14,18
- ◆ Support Industrial Temp (-40°C~95°C)
 - tREFI 7.8us at -40 °C ≤ TCASE ≤ 85°C
 - tREFI 3.9us at 85 °C < TCASE ≤ 95°C
- ◆ Lead-free (RoHS compliant)
- ◆ Halogen free
- ◆ PCB: 30μ inch gold finger

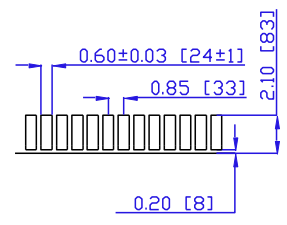
Features:

- ◆ Functionality and operations comply with the DDR4 SDRAM datasheet
- ◆ Bank Grouping is applied, and CAS to CAS latency (tCCD_L, tCCD_S) for the banks in the same or different bank group accesses are available
- ◆ Bi-Directional Differential Data Strobe
- ◆ 8 bit pre-fetch
- ◆ Burst Length (BL) switch on-the-fly BL8 or BC4(Burst Chop)
- ◆ Supports ECC error correction and detection
- ◆ Per DRAM Addressability is supported
- ◆ Internal Vref DQ level generation is available
- ◆ Write CRC is supported at all speed grades
- ◆ DBI (Data Bus Inversion) is supported(x8)
- ◆ CA parity (Command/Address Parity) mode is supported

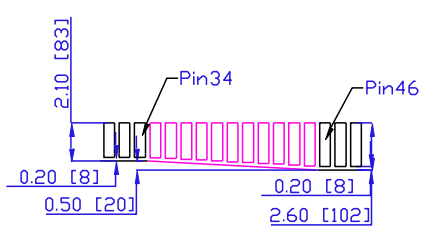
Mechanical Drawing



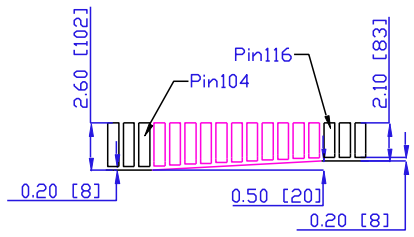
Detail A



Detail B



Detail C



Detail D

30 μ inch gold finger

(All dimensions are in millimeters with ± 0.15 mm tolerance unless specified otherwise.)

Global Presence

Taiwan (Headquarters)

Apacer Technology Inc.

1F., No.32, Zhongcheng Rd., Tucheng Dist.,
New Taipei City 236, Taiwan R.O.C.

Tel: +886-2-2267-8000

Fax: +886-2-2267-2261

amtsales@apacer.com

U.S.A.

Apacer Memory America, Inc.

46732 Lakeview Blvd., Fremont, CA 94538

Tel: 1-408-518-8699

Fax: 1-510-249-9568

sa@apacerus.com

Japan

Apacer Technology Corp.

5F, Matsura Bldg., Shiba, Minato-Ku

Tokyo, 105-0014, Japan

Tel: 81-3-5419-2668

Fax: 81-3-5419-0018

jpservices@apacer.com

Europe

Apacer Technology B.V.

Science Park Eindhoven 5051 5692 EB Son,
The Netherlands

Tel: 31-40-267-0000

Fax: 31-40-290-0686

sales@apacer.nl

China

Apacer Electronic (Shanghai) Co., Ltd.

Room D, 22/FL, No.2, Lane 600, JieyunPlaza,

Tianshan RD , Shanghai , 200051, China

Tel: 86-21-6228-9939

Fax:86-21-6228-9936

sales@apacer.com.cn

India

Apacer Technologies Pvt Ltd.

1874, South End C Cross,9th Block Jayanagar,

Bangalore-560069,INDIA.

Tel: 91-80-4152-9061/62

Fax: 91-80-4170-0215

sales_india@apacer.com