PLUSETECH DDR5 16GB 5600 SO-DIMM Datasheet

PSD5B08MA56SN-16G

Module Part Number	PSD5B08MA56SN-16G
Memory Type	DDR5
Module Type	Unbuffered SO-DIMM
Module Density	16GB
Data Width	x64
Data Rate	5600 MT/s
V_{DD} Voltage	1.1V
Interface	262-pin
Number of Ranks	1
SDRAM Device Width	x8
CAS Latency	CL46
Operation Temperature	0°C ~ +85°C
RoHS	Yes
Standard	JEDEC

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Features

• JEDEC Standard

• 262-pin, small outline dual in-line memory module(SO-DIMM)

• Fast data transfer rates: PC5-5600, backward compatible

• 16GB (2G x 8 x 8PCS)

• V_{DD}/V_{DDQ} = 1.1V (-33mV / +66mV)

• V_{pp} = 2.5V(-125mV / +250mV)

• 8 BG(Bank Group) for x4/x8/x16 configurations

• Single-rank

• 32 bank with x4/x8

• 16 bank with x16

• BL16, BC8 OTF, BL32, BL32 OTF supported

• Same Bank Refresh

• VrefDQ / VrefCA / VrefCS Training

• Per Pin VREFDQ Training

• Read / CA / CS Training Mode

• Hard/Soft Post Package Repair

• Maximum Power Saving Mode (MPSM)

• Multi-Purpose Command (MPC)

• Per DRAM Addressability (PDA)

• Connectivity Test (CT)

• ZQ Calibration

• DFE (Decision Feedback Equalization) for DQ

• DQS Interval Oscillator

• 1N / 2N Mode support for Commands

• Package Output Driver Test Mode

• On-Die ECC

• ECC Transparency and Error Scrub

• CRC (Cyclic Redundancy Check)

• JEDEC standard

  82ball FBGA(x8)

  106ball FBGA(x16)

• Gold edge contacts

• This product in compliance with the RoHS directive

Options

• Operation temperature

- Commercial 0°C ~ +85°C

• Package

- 262-pin DIMM

• Frequency/CAS latency

- 0.357ns @ CL = 46(DDR5-5600BN)

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Table 1: Ordering Information

Part Number	Density	Rank	Voltage	Date rate	Component Composition	Clock cycles (CL-tRCD-tRP)
PSD5B08MA56SN-16G	16GB	1	1.1V	5600 MT/s	2Gx8*8	46-46-46

Table 2: Addressing

Parameter	16GB
Device Configuration	2Gb x 8bit * 8 pcs
ROW address	128K (R[16:0])
Column address	1K (C[9:0])
Device bank group address	4 (BG[1:0])
Device bank address per group	4 (BA[1:0])
Page size	2KB

Table 3: DDR5-5600 Speed Bins

Speed Bin		DDR5-5600BN		Unit	Note
CL - nRCD - nRP		46-46-46			
Parameter	Symbol	min	max		
Internal read command to first data	t_{AA}	16		ns	
ACT to internal read or write delay time	t_{RCD}	16	-	ns	
PRE command period	t_{RP}	16	-	ns	
ACT to ACT or REF command period	t_{RC}	48	-	ns	
ACT to PRE command period	t_{RAS}	32	5 * t_{REFI}	ns	

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Table 4: Operating Conditions

Recommended DC Operating Conditions – DDR5 (1.1V) operation

Symbol	Parameter	Rating			Units	Notes
		Min.	Typ.	Max.		
V_{DD}	Supply Voltage	1.067	1.1	1.166	V	1,2
$V_{DD}Q$	Supply Voltage for Output	1.067	1.1	1.166	V	1,2
VPP	Core Power Voltage	1.746	1.8	1.908	V	1,2

Notes:

1. VDD must be within 66mv of VDDQ.
2. AC parameters are measured with VDD and VDDQ tied together

Table 5: DRAM Component Operating Temperature Range

Symbol	Parameter	Rating	Units	Notes
T_{OPER}	Normal Operating Temperature Range	0 to 85	℃	1,2

Table 6: Absolute Maximum DC Ratings

Symbol	Parameter	Rating	Units	Notes
V_{DD}	Voltage on V_{DD} pin relative to V_{SS}	-0.3V~1.5V	V	1,3
$V_{DD}Q$	Voltage on $V_{DD}Q$ pin relative to V_{SS}	-0.3V~1.5V	V	1,3
V_{pp}	Voltage on V_{PP} pin relative to Vss	-0.3V~1.5V	V	4
V_{IN}, V_{OUT}	Voltage on any pin relative to V_{SS}	-0.3V~1.5V	V	1,3
T_{STG}	Storage Temperature	-55 to +100	℃	1,2

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PCB Feature overview

- **General**

  * Board size: 69.6 x 30 mm ±0.15 mm

  * Finished Board Thickness: 1.2 ±0.1 mm

* Panel: 6 pieces PCB per panel

* **8-layer board**

  * Impedance: 40/55 Ohm ±10% (Single-ended)

    54/70 Ohm ±15% (Differential)

* **Pin count: 262 PIN**

- **PCB Material**

* Glass Epoxy FR4, .UL 94V-0, BP ML

- **Plating**

* Edge Connector Plating: Nickel Followed by gold

  - Nickel Plating Thickness: 100 u" min.
  - Surface treatment:

    Gold Plating: 3u" min.

    SMT PAD: average 2~3u".

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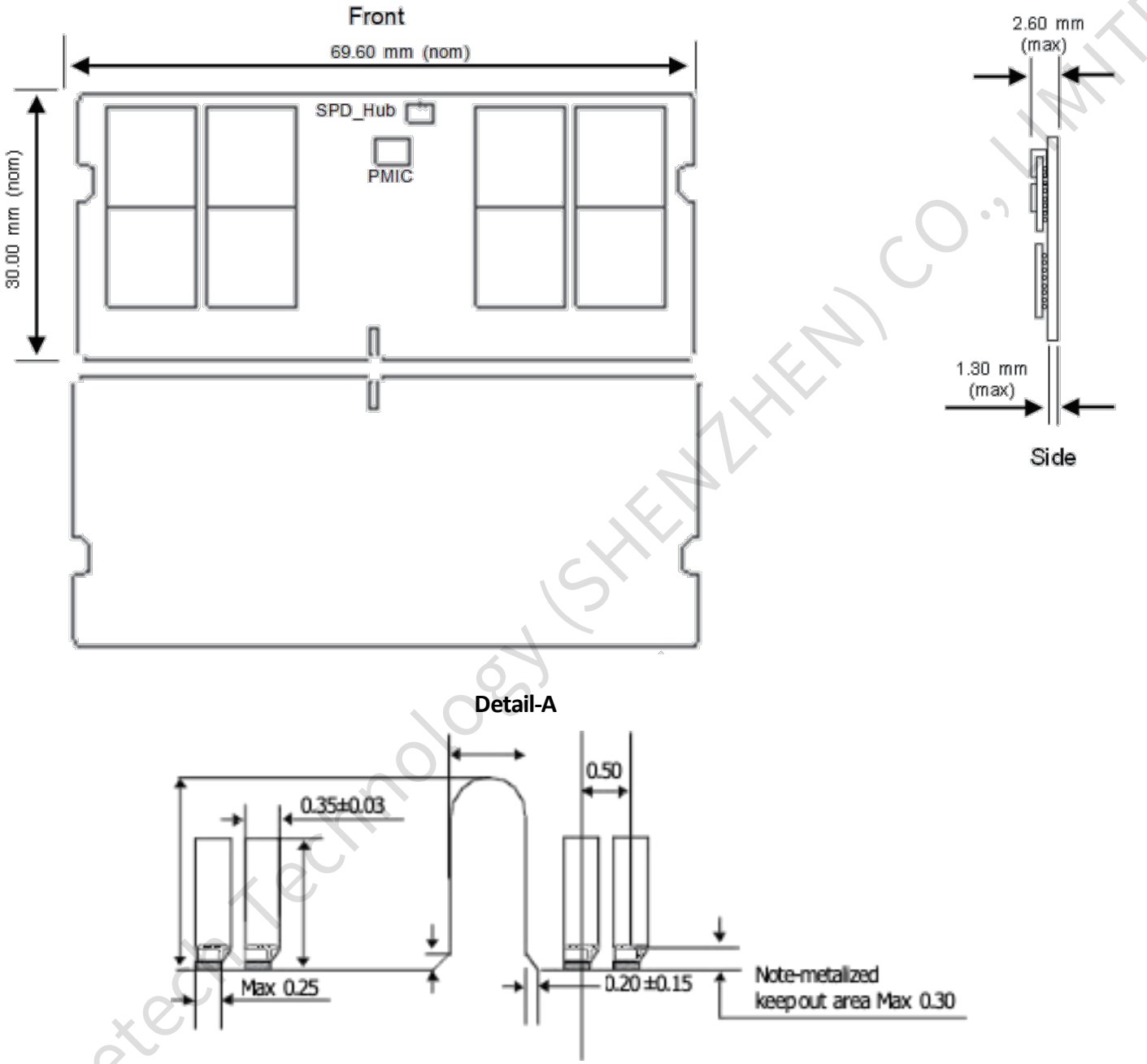
Module Dimensions

Figure 1: 262-pin DDR5 SO-DIMM



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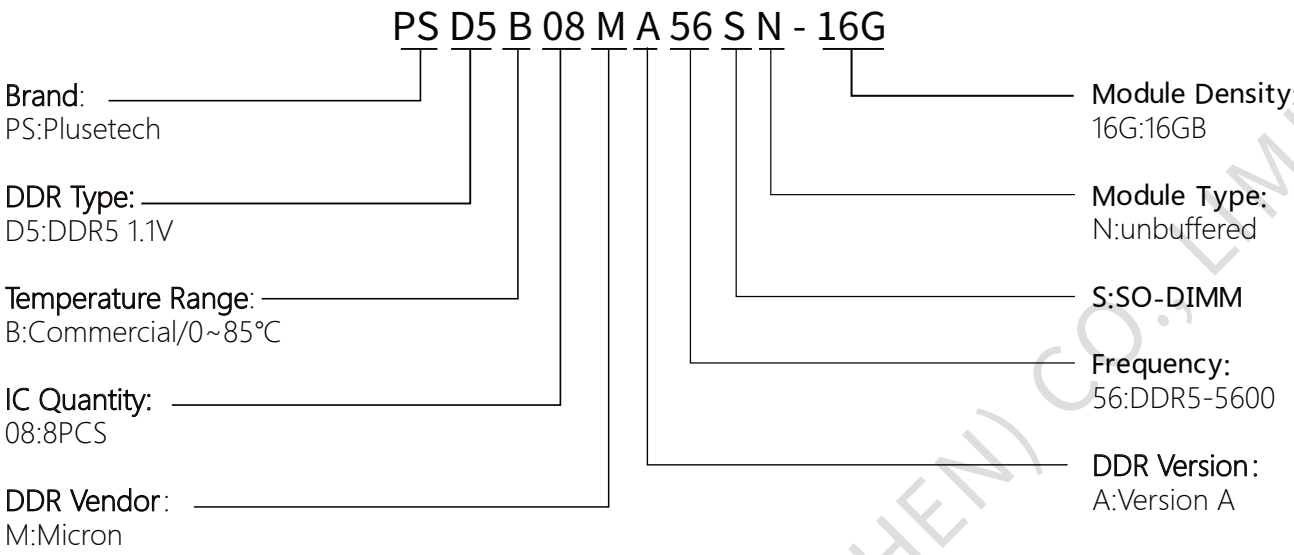
Part Number Decode



Revision History

Rev.A0 – 1 2 / 22

- Initial release.

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