

Plusetech DDR5 16GB 5600 UDIMM Datasheet

PSD5B08MA56UN-16G

Module Part Number	PSD5B08MA56UN-16G
Memory Type	DDR5
Module Type	Unbuffered DIMM
Module Density	16GB
Data Width	x64
Data Rate	5600 MT/s
V_{DD} Voltage	1.1V
Interface	288-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
- 288-pin, sunbuffered dual in-line memory module(UDIMM)
- Fast data transfer rates: PC5-5600, backward compatible PC4-4800.
- 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
 - 288-pin DIMM
- Frequency/CAS latency
 - 0.357ns @ CL = 46(DDR5-5600BN)

Table 1: Ordering Information

Part Number	Density	Rank	Voltage	Date rate	Component Composition	Clock cycles (CL-tRCD-tRP)
PSD5B08MA56UN-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}	16.00		ns	
ACT to internal read or write delay time	t_{RCD}	16.00	-	ns	
PRE command period	t_{RP}	16.00	-	ns	
ACT to ACT or REF command period	t_{RC}	48.00	-	ns	
ACT to PRE command period	t_{RAS}	32.00	5 * t_{REFI}	ns	

Table4: Operating Conditions
Recommended DC Operating Conditions – DDR5 (1.1V) operation

Symbol	Parameter	Rating			Units	Notes
		Min.	Typ.	Max.		
V _{DD}	Device Supply Voltage	1.067	1.1	1.166	V	1,2
V _{DDQ}	Supply Voltage for I/O	1.067	1.1	1.166	V	1,2
V _{PP}	Core Power Voltage	1.746	1.8	1.908	V	1,2

Notes:

1. V_{DD} must be within 66mv of V_{DDQ}.
2. AC parameters are measured with V_{DD} and V_{DDQ} tied together.

Table 5: DRAM Component Operating Temperature Range

Symbol	Parameter	Rating	Units	Notes
T _{OPER}	Normal Operating Temperature Range	0 to 85	°C	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 _{DDQ}	Voltage on V _{DDQ} pin relative to V _{SS}	-0.3V~1.5V	V	1,3
V _{PP}	Voltage on V _{PP} pin relative to V _{SS}	-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	°C	1,2

PCB Feature overview

➤ **General**

* Board size: 133.35 x 31.25 mm ±0.15 mm

* Finished Board Thickness: 1.27 ±0.1 mm

* Panel: 5 pieces PCB per panel

* **8-layer board**

* Impedance: 30/40/55 Ohm ±10% (Single-ended)

40/55 Ohm ±10% (Differential)

* **Pin count:** 288PIN

➤ **PCB Material**

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

➤ **Plating**

* Edge Connector Plating: Nickel Followed by gold

- Nickel Plating Thickness: 100 u" min.

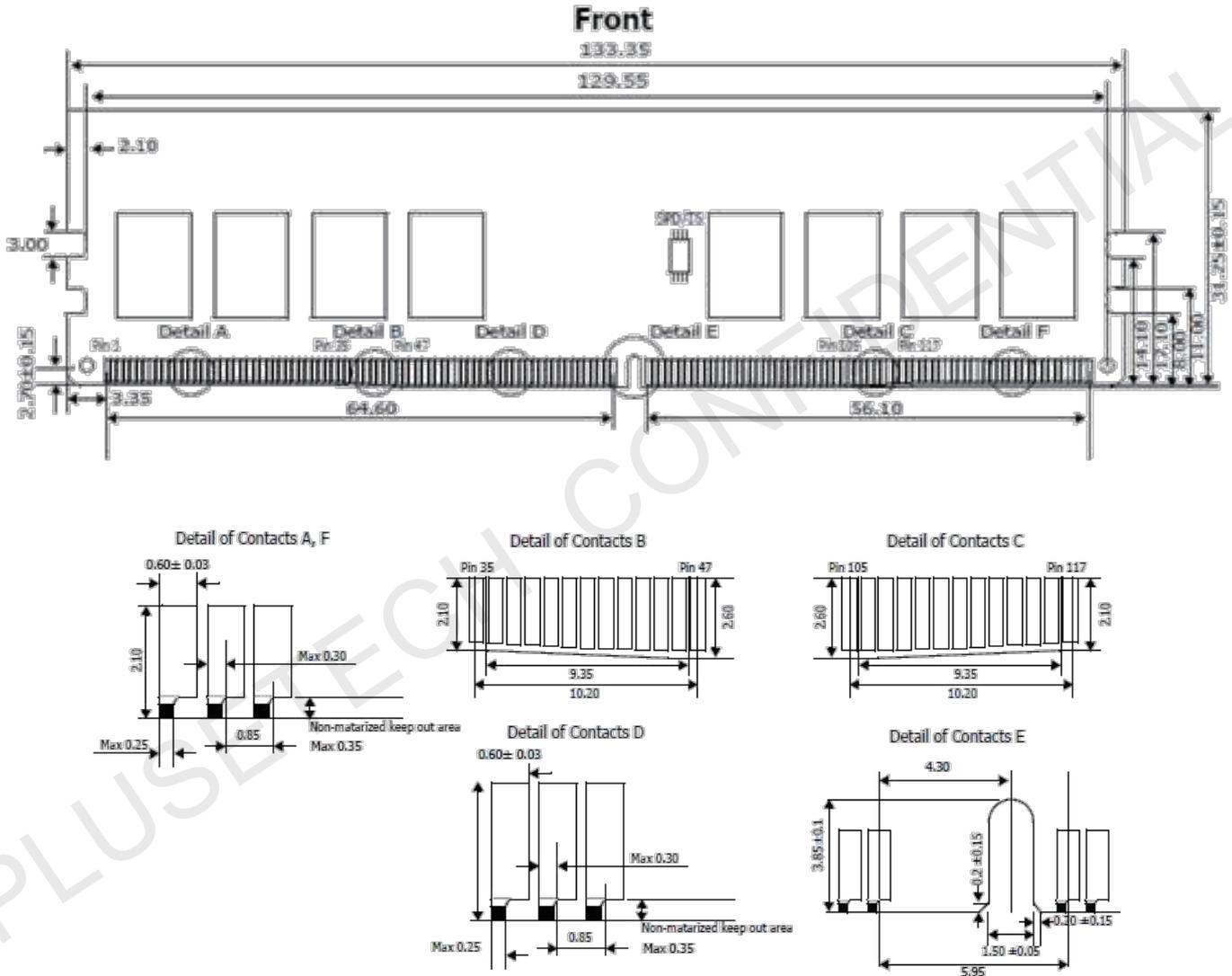
- Surface treatment:

Gold Plating: 3u" min.

SMT PAD: average 2~3u".

Module Dimensions

Figure 1: 288-pin DDR5 UDIMM



Part Number Decode

PS D5 B 08 M A 56 U N - 16G

Brand:

PS:Plusetech

DDR Type:

D5:DDR5 1.1V

Temperature Range:

B:Commercial/0~85°C

IC Quantity:

08:8PCS

DDR Vendor:

M:Micron

Module Density:

16G:16GB

Module Type:

N:unbuffered

U:UDIMM

Frequency:

56:DDR5-5600

DDR Version:

A:Version A

Revision History

Rev.A0 – 12/22

- Initial release.