

# Q4'2014 DATABOOK

Rev 0.0





## DDR4 SDRAM : Component

### ▪ DDR4 SDRAM Solder-Down

VDD	DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.	
1.2V (DDR4)	4Gb	1Gx4	DDR4 2400	H5AN4G4NAFR-UHC	FBGA(78ball)	16Bank, 1.2V, CL17,17-17-17	Q2'15	
				H5AN4G4NMFR-TFC	FBGA(78ball)	16Bank, 1.2V, CL15,15-15-15	Now	
			DDR4 2133	H5AN4G4NAFR-TFC	FBGA(78ball)	16Bank, 1.2V, CL15,15-15-15	Q2'15	
				H5AN4G4NMFR-RDC	FBGA(78ball)	16Bank, 1.2V, CL13,13-13-13	Now	
			DDR4 1866	H5AN4G4NAFR-RDC	FBGA(78ball)	16Bank, 1.2V, CL13,13-13-13	Q2'15	
				H5AN4G4NMFR-PBC	FBGA(78ball)	16Bank, 1.2V, CL11,11-11-11	Now	
			DDR4 1600	H5AN4G4NAFR-PBC	FBGA(78ball)	16Bank, 1.2V, CL11,11-11-11	Q2'15	
				512Mx8	DDR4 2400	H5AN4G8NAFR-UHC	FBGA(78ball)	16Bank, 1.2V, CL15,15-15-15
			H5AN4G8NMFR-TFC			FBGA(78ball)	16Bank, 1.2V, CL15,15-15-15	Now
			DDR4 2133		H5AN4G8NAFR-TFC	FBGA(78ball)	16Bank, 1.2V, CL15,15-15-15	Q2'15
					H5AN4G8NMFR-RDC	FBGA(78ball)	16Bank, 1.2V, CL13,13-13-13	Now
			DDR4 1866		H5AN4G8NAFR-RDC	FBGA(78ball)	16Bank, 1.2V, CL13,13-13-13	Q2'15
		H5AN4G8NMFR-PBC			FBGA(78ball)	16Bank, 1.2V, CL11,11-11-11	Now	
		DDR4 1600	H5AN4G8NAFR-PBC	FBGA(78ball)	16Bank, 1.2V, CL11,11-11-11	Q2'15		
			256Mx16	DDR4 2400	H5AN4G6NAFR-UHC	FBGA(96ball)	16Bank, 1.2V, CL15,15-15-15	Q2'15
		H5AN4G6NMFR-TFC			FBGA(96ball)	16Bank, 1.2V, CL15,15-15-15	Now	
		DDR4 2133		H5AN4G6NAFR-TFC	FBGA(96ball)	16Bank, 1.2V, CL15,15-15-15	Q2'15	
				H5AN4G6NMFR-RDC	FBGA(96ball)	16Bank, 1.2V, CL13,13-13-13	Now	
		DDR4 1866		H5AN4G6NAFR-RDC	FBGA(96ball)	16Bank, 1.2V, CL13,13-13-13	Q2'15	
				H5AN4G6NMFR-PBC	FBGA(96ball)	16Bank, 1.2V, CL11,11-11-11	Now	



## DDR3 SDRAM : Component

### ▪ DDR3 SDRAM Solder-Down

VDD	DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.	
1.5V	2Gb	256Mx8	DDR3 1866	H5TQ2G83EFR-RDC	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now	
			DDR3 1600	H5TQ2G83EFR-PBC	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now	
			DDR3 1333	H5TQ2G83EFR-H9C	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now	
		128Mx16	DDR3 1866	H5TQ2G63FFR-RDC	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now	
			DDR3 1600	H5TQ2G63FFR-PBC	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now	
			DDR3 1333	H5TQ2G63FFR-H9C	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now	
		4Gb	512Mx8	DDR3 1866	H5TQ4G83AFR-RDC	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
					H5TQ4G83BFR-RDC	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
				DDR3 1600	H5TQ4G83AFR-PBC	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
	H5TQ4G83BFR-PBC				FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now	
	DDR3 1333			H5TQ4G83AFR-H9C	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now	
				H5TQ4G83BFR-H9C	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now	
	256Mx16			DDR3 1866	H5TQ4G63AFR-RDC	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now
					H5TQ4G63CFR-RDC	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Q1'15
				DDR3 1600	H5TQ4G63AFR-PBC	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TQ4G63CFR-PBC		FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Q1'15	
			DDR3 1333	H5TQ4G63AFR-H9C	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now	
				H5TQ4G63CFR-H9C	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Q1'15	
	8Gb		1Gx8(DDP)	DDR3 1866	H5TQ8G83AMR-RDC	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
					H5TQ8G83BMR-RDC	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Q1'15
				DDR3 1600	H5TQ8G83AMR-PBC	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
		H5TQ8G83BMR-PBC			FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Q1'15	
		DDR3 1333		H5TQ8G83AMR-H9C	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now	
				H5TQ8G83BMR-H9C	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Q1'15	
DDR3 1066		H5TQ8G83AMR-G7C		FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	Now		
		H5TQ8G83BMR-G7C		FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	Q1'15		
512Mx16(DDP)		DDR3 1866		H5TQ6G63AMR-RDC	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now	
				H5TQ6G63CMR-RDC	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Q1'15	
		DDR3 1600		H5TQ6G63AMR-PBC	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now	
				H5TQ6G63CMR-PBC	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Q1'15	
		DDR3 1333	H5TQ6G63AMR-H9C	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now		
			H5TQ6G63CMR-H9C	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Q1'15		
DDR3 1066		H5TQ6G63AMR-G7C	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	Now			
		H5TQ6G63CMR-G7C	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	Q1'15			



## DDR3 SDRAM : Component

### ▪ DDR3 SDRAM Solder-Down (DDR3L)

VDD	DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.	
1.35V (DDR3L)	2Gb	256Mx8	DDR3 1600	H5TC2G83EFR-PBA	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC2G83EFR-H9A	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
		128Mx16	DDR3 1600	H5TC2G63FFR-PBA	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC2G63FFR-H9A	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now	
	4Gb	512Mx8	DDR3 1600	H5TC4G83AFR-PBA	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC4G83BFR-PBA	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC4G83AFR-H9A	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC4G83BFR-H9A	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
		256Mx16	DDR3 1600	H5TC4G63AFR-PBA	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC4G63CFR-PBA	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15	
			DDR3 1333	H5TC4G63AFR-H9A	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC4G63CFR-H9A	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15	
	8Gb	1Gx8(DDP)	DDR3 1600	H5TC8G83AMR-PBA	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC8G83BMR-PBA	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15	
			DDR3 1333	H5TC8G83AMR-H9A	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC8G83BMR-H9A	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15	
			DDR3 1066	H5TC8G83AMR-G7A	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Now	
				H5TC8G83BMR-G7A	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Q1'15	
			512Mx16(DDP)	DDR3 1600	H5TC8G63AMR-PBA	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
					H5TC8G63CMR-PBA	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15
DDR3 1333		H5TC8G63AMR-H9A		FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now		
		H5TC8G63CMR-H9A		FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15		
DDR3 1066		H5TC8G63AMR-G7A	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Now			
		H5TC8G63CMR-G7A	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Q1'15			



## DDR3 SDRAM : Component

### ▪ DDR3 SDRAM Solder-Down (DDR3L-RS)

VDD	DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.	
1.35V (DDR3L-RS)	2Gb	256Mx8	DDR3 1600	H5TC2G83EFR-PBR	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC2G83EFR-H9R	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
		128Mx16	DDR3 1600	H5TC2G63FFR-PBR	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC2G63FFR-H9R	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now	
	4Gb	512Mx8	DDR3 1600	H5TC4G83AFR-PBR	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC4G83BFR-PBR	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
			DDR3 1333	H5TC4G83AFR-H9R	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC4G83BFR-H9R	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
		256Mx16	DDR3 1600	H5TC4G63AFR-PBR	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC4G63CFR-PBR	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15	
			DDR3 1333	H5TC4G63AFR-H9R	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC4G63CFR-H9R	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15	
	8Gb	1Gx8(DDP)	DDR3 1600	H5TC8G83AMR-PBR	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now	
				H5TC8G83BMR-PBR	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15	
			DDR3 1333	H5TC8G83AMR-H9R	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC8G83BMR-H9R	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15	
			DDR3 1066	H5TC8G83AMR-G7R	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Now	
				H5TC8G83BMR-G7R	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Q1'15	
			512Mx16(DDP)	DDR3 1600	H5TC8G63AMR-PBR	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
					H5TC8G63CMR-PBR	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Q1'15
		DDR3 1333		H5TC8G63AMR-H9R	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now	
				H5TC8G63CMR-H9R	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Q1'15	
		DDR3 1066	H5TC8G63AMR-G7R	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Now		
			H5TC8G63CMR-G7R	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Q1'15		





## DDR4 SDRAM : Module

### ▪ RDIMM (VDD=1.2V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.	
	DENSITY	ORG.								
1.2V	32GB	4Gx72	2Gx4	2133-151515	HMA84GR7MFR4N-TF	FBGA(78ball)	2	31.25mm	Nov'14	
				1866-131313	HMA84GR7MFR4N-RD	FBGA(78ball)	2	31.25mm	Nov'14	
				1600-111111	HMA84GR7MFR4NN-PB	FBGA(78ball)	2	31.25mm	Nov'14	
	16GB	2Gx72	1Gx4	2133-151515	HMA42GR7MFR4N-TF	FBGA(78ball)	2	31.25mm	Now	
					HMA42GR7AFR4N-TF	FBGA(78ball)	2	31.25mm	Nov'14	
				1866-131313	HMA42GR7MFR4N-RD	FBGA(78ball)	2	31.25mm	Now	
					HMA42GR7AFR4N-RD	FBGA(78ball)	2	31.25mm	Nov'14	
				1600-111111	HMA42GR7MFR4N-PB	FBGA(78ball)	2	31.25mm	Now	
					HMA42GR7AFR4N-PB	FBGA(78ball)	2	31.25mm	Nov'14	
	8GB	1Gx72	1Gx4	2133-151515	HMA41GR7MFR4N-TF	FBGA(78ball)	1	31.25mm	Now	
					HMA41GR7AFR4N-TF	FBGA(78ball)	1	31.25mm	Nov'14	
				1866-131313	HMA41GR7MFR4N-RD	FBGA(78ball)	1	31.25mm	Now	
					HMA41GR7AFR4N-RD	FBGA(78ball)	1	31.25mm	Nov'14	
				1600-111111	HMA41GR7MFR4N-PB	FBGA(78ball)	1	31.25mm	Now	
			HMA41GR7AFR4N-PB		FBGA(78ball)	1	31.25mm	Nov'14		
			512Mx8		2133-151515	HMA41GR7MFR8N-TF	FBGA(78ball)	2	31.25mm	Now
						HMA41GR7AFR8N-TF	FBGA(78ball)	2	31.25mm	Nov'14
					1866-131313	HMA41GR7MFR8N-RD	FBGA(78ball)	2	31.25mm	Now
HMA41GR7AFR8N-RD						FBGA(78ball)	2	31.25mm	Nov'14	
1600-111111	HMA41GR7MFR8N-PB	FBGA(78ball)			2	31.25mm	Now			
	HMA41GR7AFR8N-PB	FBGA(78ball)	2	31.25mm	Nov'14					
4GB	512Mx72	512Mx8	2133-151515	HMA451R7MFR8N-TF	FBGA(78ball)	1	31.25mm	Now		
				HMA451R7AFR8N-TF	FBGA(78ball)	1	31.25mm	Nov'14		
			1866-131313	HMA451R7MFR8N-RD	FBGA(78ball)	1	31.25mm	Now		
				HMA451R7AFR8N-RD	FBGA(78ball)	1	31.25mm	Nov'14		
			1600-111111	HMA451R7MFR8N-PB	FBGA(78ball)	1	31.25mm	Now		
				HMA451R7AFR8N-PB	FBGA(78ball)	1	31.25mm	Nov'14		



## DDR4 SDRAM : Module

### ▪ UBDIMM (VDD=1.2V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.	
	DENSITY	ORG.								
1.2V	16GB	2Gx64	512Mx8	2133-151515	HMA82GU6MFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15	
				1866-131313	HMA82GU6MFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15	
				1600-111111	HMA82GU6MFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15	
		2Gx72	512Mx8	2133-151515	HMA82GU7MFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15	
				1866-131313	HMA82GU7MFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15	
				1600-111111	HMA82GU7MFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15	
	8GB	1Gx64	512Mx8	2133-151515	HMA41GU6MFR8N-TF	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU6AFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15	
				1866-131313	HMA41GU6MFR8N-RD	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU6AFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15	
				1600-111111	HMA41GU6MFR8N-PB	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU6AFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15	
		1Gx72	512Mx8	2133-151515	HMA41GU7MFR8N-TF	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU7AFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15	
				1866-131313	HMA41GU7MFR8N-RD	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU7AFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15	
				1600-111111	HMA41GU7MFR8N-PB	FBGA(78ball)	2	31.25mm	Now	
					HMA41GU7AFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15	
		4GB	512Mx64	512Mx8	2133-151515	HMA451U6MFR8N-TF	FBGA(78ball)	1	31.25mm	Now
						HMA451U6AFR8N-TF	FBGA(78ball)	1	31.25mm	Q1'15
					1866-131313	HMA451U6MFR8N-RD	FBGA(78ball)	1	31.25mm	Now
						HMA451U6AFR8N-RD	FBGA(78ball)	1	31.25mm	Q1'15
					1600-111111	HMA451U6MFR8N-PB	FBGA(78ball)	1	31.25mm	Now
						HMA451U6AFR8N-PB	FBGA(78ball)	1	31.25mm	Q1'15
512Mx72	512Mx8		2133-151515	HMA451U7MFR8N-TF	FBGA(78ball)	1	31.25mm	Now		
				HMA451U7AFR8N-TF	FBGA(78ball)	1	31.25mm	Q1'15		
			1866-131313	HMA451U7MFR8N-RD	FBGA(78ball)	1	31.25mm	Now		
				HMA451U7AFR8N-RD	FBGA(78ball)	1	31.25mm	Q1'15		
			1600-111111	HMA451U7MFR8N-PB	FBGA(78ball)	1	31.25mm	Now		
				HMA451U7AFR8N-PB	FBGA(78ball)	1	31.25mm	Q1'15		



## DDR4 SDRAM : Module

### ▪ SODIMM (VDD=1.2V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.2V	16GB	2Gx64	512Mx8	2133-151515	HMA82GS6MFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15
				1866-131313	HMA82GS6MFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15
				1600-111111	HMA82GS6MFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15
		2Gx72	512Mx8	2133-151515	HMA82GS7MFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15
				1866-131313	HMA82GS7MFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15
				1600-111111	HMA82GS7MFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15
	8GB	1Gx64	512Mx8	2133-151515	HMA41GS6AFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15
				1866-131313	HMA41GS6AFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15
				1600-111111	HMA41GS6AFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15
		1Gx72	512Mx8	2133-151515	HMA41GS7AFR8N-TF	FBGA(78ball)	2	31.25mm	Q1'15
				1866-131313	HMA41GS7AFR8N-RD	FBGA(78ball)	2	31.25mm	Q1'15
				1600-111111	HMA41GS7AFR8N-PB	FBGA(78ball)	2	31.25mm	Q1'15
	4GB	512Mx64	512Mx8	2133-151515	HMA451S6AFR8N-TF	FBGA(78ball)	1	31.25mm	Q1'15
				1866-131313	HMA451S6AFR8N-RD	FBGA(78ball)	1	31.25mm	Q1'15
				1600-111111	HMA451S6AFR8N-PB	FBGA(78ball)	1	31.25mm	Q1'15
		512Mx72	512Mx8	2133-151515	HMA451S7AFR8N-TF	FBGA(78ball)	1	31.25mm	Q1'15
				1866-131313	HMA451S7AFR8N-RD	FBGA(78ball)	1	31.25mm	Q1'15
				1600-111111	HMA451S7AFR8N-PB	FBGA(78ball)	1	31.25mm	Q1'15





## DDR4 SDRAM : Module

### ▪ LRDIMM (VDD=1.2V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.2V	64GB	8Gx72	4Gx4 (DDP)	2133-151515	HMAA8GL7MMR4N-TF	FBGA(78ball)	4	31.25mm	Dec'14
				1866-131313	HMAA8GL7MMR4N-RD	FBGA(78ball)	4	31.25mm	Dec'14
				1600-111111	HMAA8GL7MMR4N-PB	FBGA(78ball)	4	31.25mm	Dec'14
	32GB	4Gx72	2Gx4 (DDP)	2133-151515	HMA84GL7MMR4N-TF	FBGA(78ball)	4	31.25mm	Now
					HMA84GL7AMR4N-TF	FBGA(78ball)	4	31.25mm	Q2'15
				1866-131313	HMA84GL7MMR4N-RD	FBGA(78ball)	4	31.25mm	Now
					HMA84GL7AMR4N-RD	FBGA(78ball)	4	31.25mm	Q2'15
				1600-111111	HMA84GL7MMR4N-PB	FBGA(78ball)	4	31.25mm	Now
					HMA84GL7AMR4N-PB	FBGA(78ball)	4	31.25mm	Q2'15
	16GB	2Gx72	1Gx4	2133-151515	HMA42GL7MFR4N-TF	FBGA(78ball)	2	31.25mm	Now
					HMA42GL7AFR4N-TF	FBGA(78ball)	2	31.25mm	Q2'15
				1866-131313	HMA42GL7MFR4N-RD	FBGA(78ball)	2	31.25mm	Now
					HMA42GL7AFR4N-RD	FBGA(78ball)	2	31.25mm	Q2'15
				1600-111111	HMA42GL7MFR4N-PB	FBGA(78ball)	2	31.25mm	Now
					HMA42GL7AFR4N-PB	FBGA(78ball)	2	31.25mm	Q2'15



## DDR4 SDRAM : Module

### ▪ VLP RDIMM (VDD=1.2V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.2V	32GB	4Gx72	2Gx4	2133-151515	HMAA4R8MMR4N-TF	FBGA(78ball)	2	31.25mm	Q1'15
				1866-131313	HMAA4R8MMR4N-RD	FBGA(78ball)	2	31.25mm	Q1'15
				1600-111111	HMAA4R8MMR4N-PB	FBGA(78ball)	2	31.25mm	Q1'15
	16GB	2Gx72	1Gx4	2133-151515	HMA82GR8MMR4N-TF	FBGA(78ball)	2	31.25mm	Q2'15
				1866-131313	HMA82GR8MMR4N-RD	FBGA(78ball)	2	31.25mm	Q2'15
				1600-111111	HMA82GR8MMR4N-PB	FBGA(78ball)	2	31.25mm	Q2'15



## DDR3 SDRAM : Module

### ▪ UBDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.	
	DENSITY	ORG.								
1.5V	8GB	1Gx64	512Mx8	1866-131313	HMT41GU6AFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GU6BFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GU6DFR8C-RD	FBGA(78ball)	2	30mm	Q1'15	
				1600-111111	HMT41GU6AFR8C-PB	FBGA(78ball)	2	30mm	Now	
					HMT41GU6BFR8C-PB	FBGA(78ball)	2	30mm	Now	
					HMT41GU6DFR8C-PB	FBGA(78ball)	2	30mm	Q1'15	
		1333-999	HMT41GU6AFR8C-H9	FBGA(78ball)	2	30mm	Now			
			HMT41GU6BFR8C-H9	FBGA(78ball)	2	30mm	Now			
			HMT41GU6DFR8C-H9	FBGA(78ball)	2	30mm	Q1'15			
		1Gx72	512Mx8	1866-131313	HMT41GU7AFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GU7BFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GU7DFR8C-RD	FBGA(78ball)	2	30mm	Q2'15	
	1600-111111			HMT41GU7AFR8C-PB	FBGA(78ball)	2	30mm	Now		
				HMT41GU7BFR8C-PB	FBGA(78ball)	2	30mm	Now		
				HMT41GU7DFR8C-PB	FBGA(78ball)	2	30mm	Q2'15		
	1333-999		HMT41GU7AFR8C-H9	FBGA(78ball)	2	30mm	Now			
			HMT41GU7BFR8C-H9	FBGA(78ball)	2	30mm	Now			
			HMT41GU7DFR8C-H9	FBGA(78ball)	2	30mm	Q2'15			
	4GB		512Mx64	512Mx8	1866-131313	HMT451U6AFR8C-RD	FBGA(78ball)	1	30mm	Now
						HMT451U6BFR8C-RD	FBGA(78ball)	1	30mm	Now
						HMT451U6DFR8C-RD	FBGA(78ball)	1	30mm	Q1'15
		1600-111111			HMT451U6AFR8C-PB	FBGA(78ball)	1	30mm	Now	
					HMT451U6BFR8C-PB	FBGA(78ball)	1	30mm	Now	
					HMT451U6DFR8C-PB	FBGA(78ball)	1	30mm	Q1'15	
1333-999		HMT451U6AFR8C-H9			FBGA(78ball)	1	30mm	Now		
		HMT451U6BFR8C-H9			FBGA(78ball)	1	30mm	Now		
		HMT451U6DFR8C-H9			FBGA(78ball)	1	30mm	Q1'15		
256Mx8		1866-131313		HMT351U6EFR8C-RD	FBGA(78ball)	2	30mm	Now		
				1600-111111	HMT351U6EFR8C-PB	FBGA(78ball)	2	30mm	Now	
				1333-999	HMT351U6EFR8C-H9	FBGA(78ball)	2	30mm	Now	



## DDR3 SDRAM : Module

### ▪ UBDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.		
	DENSITY	ORG.									
1.5V	4GB	512Mx72	512Mx8	1866-131313	HMT451U7AFR8C-RD	FBGA(78ball)	1	30mm	Now		
					HMT451U7BFR8C-RD	FBGA(78ball)	1	30mm	Now		
					HMT451U7DFR8C-RD	FBGA(78ball)	1	30mm	Q2'15		
				1600-111111	HMT451U7AFR8C-PB	FBGA(78ball)	1	30mm	Now		
					HMT451U7BFR8C-PB	FBGA(78ball)	1	30mm	Now		
					HMT451U7DFR8C-PB	FBGA(78ball)	1	30mm	Q2'15		
			1333-999	HMT451U7AFR8C-H9	FBGA(78ball)	1	30mm	Now			
				HMT451U7BFR8C-H9	FBGA(78ball)	1	30mm	Now			
				HMT451U7DFR8C-H9	FBGA(78ball)	1	30mm	Q2'15			
	256Mx8	256Mx16	1866-131313	1600-111111	HMT351U7EFR8C-PB	FBGA(78ball)	2	30mm	Now		
				1333-999	HMT351U7EFR8C-H9	FBGA(78ball)	2	30mm	Now		
	2GB	256Mx64	256Mx16	1866-131313	HMT425U6CFR8C-RD	FBGA(78ball)	1	30mm	Nov'14		
					1600-111111	HMT425U6CFR8C-PB	FBGA(78ball)	1	30mm	Nov'14	
					1333-999	HMT425U6CFR8C-H9	FBGA(78ball)	1	30mm	Nov'14	
				256Mx8	1866-131313	HMT325U6EFR8C-RD	FBGA(78ball)	1	30mm	Now	
						1600-111111	HMT325U6EFR8C-PB	FBGA(78ball)	1	30mm	Now
						1333-999	HMT325U6EFR8C-H9	FBGA(78ball)	1	30mm	Now
			256Mx72	256Mx8	1866-131313	HMT325U7EFR8C-RD	FBGA(78ball)	1	30mm	Now	
1600-111111						HMT325U7EFR8C-PB	FBGA(78ball)	1	30mm	Now	
1333-999						HMT325U7EFR8C-H9	FBGA(78ball)	1	30mm	Now	



## DDR3 SDRAM : Module

### ▪ UBDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.35V	8GB	1Gx72	512Mx8	1600-111111	HMT41GU7AFR8A-PB	FBGA(78ball)	2	30mm	Now
					HMT41GU7BFR8A-PB	FBGA(78ball)	2	30mm	Now
					HMT41GU7DFR8A-PB	FBGA(78ball)	2	30mm	Q2'15
				1333-999	HMT41GU7AFR8A-H9	FBGA(78ball)	2	30mm	Now
					HMT41GU7BFR8A-H9	FBGA(78ball)	2	30mm	Now
					HMT41GU7DFR8A-H9	FBGA(78ball)	2	30mm	Q2'15
	4GB	512Mx72	512Mx8	1600-111111	HMT451U7AFR8A-PB	FBGA(78ball)	1	30mm	Now
					HMT451U7BFR8A-PB	FBGA(78ball)	1	30mm	Now
					HMT451U7DFR8A-PB	FBGA(78ball)	1	30mm	Q2'15
				1333-999	HMT451U7AFR8A-H9	FBGA(78ball)	1	30mm	Now
					HMT451U7BFR8A-H9	FBGA(78ball)	1	30mm	Now
					HMT451U7DFR8A-H9	FBGA(78ball)	1	30mm	Q2'15
256Mx8			1600-111111	HMT351U7EFR8A-PB	FBGA(78ball)	2	30mm	Now	
			1333-999	HMT351U7EFR8A-H9	FBGA(78ball)	2	30mm	Now	
2GB	256Mx72	256Mx8	1600-111111	HMT325U7EFR8A-PB	FBGA(78ball)	1	30mm	Now	
			1333-999	HMT325U7EFR8A-H9	FBGA(78ball)	1	30mm	Now	



## DDR3 SDRAM : Module

### ▪ RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.5V	32GB	4Gx72	2Gx4 (DDP)	1600-111111	HMT84GR7AMR4C-PB	FBGA(78ball)	4	30mm	Now
					HMT84GR7BMR4C-PB	FBGA(78ball)	4	30mm	Nov'14
					HMT84GR7DMR4C-PB	FBGA(78ball)	4	30mm	Q3'15
				1333-999	HMT84GR7AMR4C-H9	FBGA(78ball)	4	30mm	Now
					HMT84GR7BMR4C-H9	FBGA(78ball)	4	30mm	Nov'14
					HMT84GR7DMR4C-H9	FBGA(78ball)	4	30mm	Q3'15
				1066-777	HMT84GR7AMR4C-G7	FBGA(78ball)	4	30mm	Now
					HMT84GR7BMR4C-G7	FBGA(78ball)	4	30mm	Nov'14
					HMT84GR7DMR4C-G7	FBGA(78ball)	4	30mm	Q3'15
	16GB	2Gx72	1Gx4	1866-131313	HMT42GR7AFR4C-RD	FBGA(78ball)	2	30mm	Now
					HMT42GR7BFR4C-RD	FBGA(78ball)	2	30mm	Now
					HMT42GR7DFR4C-RD	FBGA(78ball)	2	30mm	Q2'15
				1600-111111	HMT42GR7AFR4C-PB	FBGA(78ball)	2	30mm	Now
					HMT42GR7BFR4C-PB	FBGA(78ball)	2	30mm	Now
					HMT42GR7DFR4C-PB	FBGA(78ball)	2	30mm	Q2'15
				1333-999	HMT42GR7AFR4C-H9	FBGA(78ball)	2	30mm	Now
					HMT42GR7BFR4C-H9	FBGA(78ball)	2	30mm	Now
					HMT42GR7DFR4C-H9	FBGA(78ball)	2	30mm	Q2'15
	8GB	1Gx72	1Gx4	1866-131313	HMT41GR7AFR4C-RD	FBGA(78ball)	1	30mm	Now
					HMT41GR7BFR4C-RD	FBGA(78ball)	1	30mm	Now
					HMT41GR7DFR4C-RD	FBGA(78ball)	1	30mm	Q2'15
				1600-111111	HMT41GR7AFR4C-PB	FBGA(78ball)	1	30mm	Now
					HMT41GR7BFR4C-PB	FBGA(78ball)	1	30mm	Now
					HMT41GR7DFR4C-PB	FBGA(78ball)	1	30mm	Q2'15
1333-999				HMT41GR7AFR4C-H9	FBGA(78ball)	1	30mm	Now	
				HMT41GR7BFR4C-H9	FBGA(78ball)	1	30mm	Now	
				HMT41GR7DFR4C-H9	FBGA(78ball)	1	30mm	Q2'15	





## DDR3 SDRAM : Module

### ▪ RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.	
	DENSITY	ORG.								
1.5V	8GB	1Gx72	512Mx8	1866-131313	HMT41GR7AFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GR7BFR8C-RD	FBGA(78ball)	2	30mm	Now	
					HMT41GR7DFR8C-RD	FBGA(78ball)	2	30mm	Q2'15	
				1600-111111	HMT41GR7AFR8C-PB	FBGA(78ball)	2	30mm	Now	
					HMT41GR7BFR8C-PB	FBGA(78ball)	2	30mm	Now	
					HMT41GR7DFR8C-PB	FBGA(78ball)	2	30mm	Q2'15	
			1333-999	HMT41GR7AFR8C-H9	FBGA(78ball)	2	30mm	Now		
				HMT41GR7BFR8C-H9	FBGA(78ball)	2	30mm	Now		
				HMT41GR7DFR8C-H9	FBGA(78ball)	2	30mm	Q2'15		
			512Mx4	1866-131313	HMT31GR7EFR4C-RD	FBGA(78ball)	2	30mm	Now	
				1600-111111	HMT31GR7EFR4C-PB	FBGA(78ball)	2	30mm	Now	
				1333-999	HMT31GR7EFR4C-H9	FBGA(78ball)	2	30mm	Now	
	4GB	512Mx72	512Mx8	1866-131313	HMT451R7AFR8C-RD	FBGA(78ball)	1	30mm	Now	
					HMT451R7BFR8C-RD	FBGA(78ball)	1	30mm	Now	
					HMT451R7DFR8C-RD	FBGA(78ball)	1	30mm	Q2'15	
					1600-111111	HMT451R7AFR8C-PB	FBGA(78ball)	1	30mm	Now
						HMT451R7BFR8C-PB	FBGA(78ball)	1	30mm	Now
						HMT451R7DFR8C-PB	FBGA(78ball)	1	30mm	Q2'15
				1333-999	HMT451R7AFR8C-H9	FBGA(78ball)	1	30mm	Now	
					HMT451R7BFR8C-H9	FBGA(78ball)	1	30mm	Now	
					HMT451R7DFR8C-H9	FBGA(78ball)	1	30mm	Q2'15	
				512Mx4	1866-131313	HMT351R7EFR4C-RD	FBGA(78ball)	1	30mm	Now
					1600-111111	HMT351R7EFR4C-PB	FBGA(78ball)	1	30mm	Now
					1333-999	HMT351R7EFR4C-H9	FBGA(78ball)	1	30mm	Now
256Mx8			1866-131313		HMT351R7EFR8C-RD	FBGA(78ball)	2	30mm	Now	
			1600-111111		HMT351R7EFR8C-PB	FBGA(78ball)	2	30mm	Now	
			1333-999		HMT351R7EFR8C-H9	FBGA(78ball)	2	30mm	Now	
2GB			256Mx72	256Mx8	1866-131313	HMT325R7EFR8C-RD	FBGA(78ball)	1	30mm	Now
					1600-111111	HMT325R7EFR8C-PB	FBGA(78ball)	1	30mm	Now
					1333-999	HMT325R7EFR8C-H9	FBGA(78ball)	1	30mm	Now



## DDR3 SDRAM : Module

### ▪ RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.	
	DENSITY	ORG.								
1.35V	32GB	4Gx72	2Gx4 (DDP)	1600-111111	HMT84GR7AMR4A-PB	FBGA(78ball)	4	30mm	Now	
					HMT84GR7BMR4A-PB	FBGA(78ball)	4	30mm	Nov'14	
					HMT84GR7DMR4A-PB	FBGA(78ball)	4	30mm	Q3'15	
				1333-999	HMT84GR7AMR4A-H9	FBGA(78ball)	4	30mm	Now	
					HMT84GR7BMR4A-H9	FBGA(78ball)	4	30mm	Nov'14	
					HMT84GR7DMR4A-H9	FBGA(78ball)	4	30mm	Q3'15	
				1066-777	HMT84GR7AMR4A-G7	FBGA(78ball)	4	30mm	Now	
					HMT84GR7BMR4A-G7	FBGA(78ball)	4	30mm	Nov'14	
					HMT84GR7DMR4A-G7	FBGA(78ball)	4	30mm	Q3'15	
	16GB	2Gx72	1Gx4	1600-111111	HMT42GR7AFR4A-PB	FBGA(78ball)	2	30mm	Now	
					HMT42GR7BFR4A-PB	FBGA(78ball)	2	30mm	Now	
					HMT42GR7DFR4A-PB	FBGA(78ball)	2	30mm	Q2'15	
					1333-999	HMT42GR7AFR4A-H9	FBGA(78ball)	2	30mm	Now
						HMT42GR7BFR4A-H9	FBGA(78ball)	2	30mm	Now
						HMT42GR7DFR4A-H9	FBGA(78ball)	2	30mm	Q2'15
	8GB	1Gx72	1Gx4	1600-111111	HMT41GR7AFR4A-PB	FBGA(78ball)	1	30mm	Now	
					HMT41GR7BFR4A-PB	FBGA(78ball)	1	30mm	Now	
					HMT41GR7DFR4A-PB	FBGA(78ball)	1	30mm	Q2'15	
				1333-999	HMT41GR7AFR4A-H9	FBGA(78ball)	1	30mm	Now	
					HMT41GR7BFR4A-H9	FBGA(78ball)	1	30mm	Now	
					HMT41GR7DFR4A-H9	FBGA(78ball)	1	30mm	Q2'15	
				512Mx8	1600-111111	HMT41GR7AFR8A-PB	FBGA(78ball)	2	30mm	Now
						HMT41GR7BFR8A-PB	FBGA(78ball)	2	30mm	Now
						HMT41GR7DFR8A-PB	FBGA(78ball)	2	30mm	Q2'15
1333-999			HMT41GR7AFR8A-H9		FBGA(78ball)	2	30mm	Now		
			HMT41GR7BFR8A-H9		FBGA(78ball)	2	30mm	Now		
			HMT41GR7DFR8A-H9		FBGA(78ball)	2	30mm	Q2'15		
512Mx4			1600-111111	HMT31GR7EFR4A-PB	FBGA(78ball)	2	30mm	Now		
				HMT31GR7EFR4A-H9	FBGA(78ball)	2	30mm	Now		



## DDR3 SDRAM : Module

### ▪ RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.		
	DENSITY	ORG.									
1.35V	4GB	512Mx72	512Mx8	1600-111111	HMT451R7AFR8A-PB	FBGA(78ball)	1	30mm	Now		
					HMT451R7BFR8A-PB	FBGA(78ball)	1	30mm	Now		
					HMT451R7DFR8A-PB	FBGA(78ball)	1	30mm	Q2'15		
				1333-999	HMT451R7AFR8A-H9	FBGA(78ball)	1	30mm	Now		
					HMT451R7BFR8A-H9	FBGA(78ball)	1	30mm	Now		
					HMT451R7DFR8A-H9	FBGA(78ball)	1	30mm	Q2'15		
			512Mx4	1600-111111	HMT351R7EFR4A-PB	FBGA(78ball)	1	30mm	Now		
					1333-999	HMT351R7EFR4A-H9	FBGA(78ball)	1	30mm	Now	
			256Mx8	1600-111111	HMT351R7EFR8A-PB	FBGA(78ball)	2	30mm	Now		
					1333-999	HMT351R7EFR8A-H9	FBGA(78ball)	2	30mm	Now	
			2GB	256Mx72	256Mx8	1600-111111	HMT325R7EFR8A-PB	FBGA(78ball)	1	30mm	Now
							1333-999	HMT325R7EFR8A-H9	FBGA(78ball)	1	30mm



## DDR3 SDRAM : Module

### ▪ VLP RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.				
	DENSITY	ORG.											
1.5V	32GB	4Gx72	4Gx4 (QDP)	1600-111111	HMTA4GV7AHR4C-PB	FBGA(82ball)	4	18.75mm	Now				
					HMTA4GV7BHR4C-PB	FBGA(82ball)	4	18.75mm	Q1'15				
					HMTA4GV7DHR4C-PB	FBGA(82ball)	4	18.75mm	Q4'15				
				1333-999	HMTA4GV7AHR4C-H9	FBGA(82ball)	4	18.75mm	Now				
					HMTA4GV7BHR4C-H9	FBGA(82ball)	4	18.75mm	Q1'15				
					HMTA4GV7DHR4C-H9	FBGA(82ball)	4	18.75mm	Q4'15				
				1066-777	HMTA4GV7AHR4C-G7	FBGA(82ball)	4	18.75mm	Now				
					HMTA4GV7BHR4C-G7	FBGA(82ball)	4	18.75mm	Q1'15				
					HMTA4GV7DHR4C-G7	FBGA(82ball)	4	18.75mm	Q4'15				
	16GB	2Gx72	2Gx4 (DDP)	1866-131313	HMT82GV7AMR4C-RD	FBGA(78ball)	2	18.75mm	Now				
						HMT82GV7BMR4C-RD	FBGA(78ball)	2	18.75mm	Nov'14			
						HMT82GV7DMR4C-RD	FBGA(78ball)	2	18.75mm	Q3'15			
					1600-111111	HMT82GV7AMR4C-PB	FBGA(78ball)	2	18.75mm	Now			
						HMT82GV7BMR4C-PB	FBGA(78ball)	2	18.75mm	Nov'14			
						HMT82GV7DMR4C-PB	FBGA(78ball)	2	18.75mm	Q3'15			
					1333-999	HMT82GV7AMR4C-H9	FBGA(78ball)	2	18.75mm	Now			
						HMT82GV7BMR4C-H9	FBGA(78ball)	2	18.75mm	Nov'14			
						HMT82GV7DMR4C-H9	FBGA(78ball)	2	18.75mm	Q3'15			
				1066-777	HMT82GV7AMR4C-G7	FBGA(78ball)	2	18.75mm	Now				
					HMT82GV7BMR4C-G7	FBGA(78ball)	2	18.75mm	Nov'14				
					HMT82GV7DMR4C-G7	FBGA(78ball)	2	18.75mm	Q3'15				
				8GB	1Gx72	1Gx4	1866-131313	HMT41GV7AFR4C-RD	FBGA(78ball)	1	18.75mm	Now	
									HMT41GV7BFR4C-RD	FBGA(78ball)	1	18.75mm	Now
									HMT41GV7DFR4C-RD	FBGA(78ball)	1	18.75mm	Q2'15
1600-111111	HMT41GV7AFR4C-PB	FBGA(78ball)	1					18.75mm	Now				
	HMT41GV7BFR4C-PB	FBGA(78ball)	1					18.75mm	Now				
	HMT41GV7DFR4C-PB	FBGA(78ball)	1					18.75mm	Q2'15				
1333-999	HMT41GV7AFR4C-H9	FBGA(78ball)	1				18.75mm	Now					
	HMT41GV7BFR4C-H9	FBGA(78ball)	1				18.75mm	Now					
	HMT41GV7DFR4C-H9	FBGA(78ball)	1				18.75mm	Q2'15					



## DDR3 SDRAM : Module

### ▪ VLP RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.5V	8GB	1Gx72	512Mx8	1866-131313	HMT41GV7AFR8C-RD	FBGA(78ball)	2	18.75mm	Now
					HMT41GV7BFR8C-RD	FBGA(78ball)	2	18.75mm	Now
					HMT41GV7DFR8C-RD	FBGA(78ball)	2	18.75mm	Q2'15
			1600-111111	HMT41GV7AFR8C-PB	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7BFR8C-PB	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7DFR8C-PB	FBGA(78ball)	2	18.75mm	Q2'15	
			1333-999	HMT41GV7AFR8C-H9	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7BFR8C-H9	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7DFR8C-H9	FBGA(78ball)	2	18.75mm	Q2'15	
	4GB	512Mx72	512Mx8	1866-131313	HMT451V7AFR8C-RD	FBGA(78ball)	1	18.75mm	Now
					HMT451V7BFR8C-RD	FBGA(78ball)	1	18.75mm	Now
					HMT451V7DFR8C-RD	FBGA(78ball)	1	18.75mm	Q2'15
				1600-111111	HMT451V7AFR8C-PB	FBGA(78ball)	1	18.75mm	Now
					HMT451V7BFR8C-PB	FBGA(78ball)	1	18.75mm	Now
					HMT451V7DFR8C-PB	FBGA(78ball)	1	18.75mm	Q2'15
1333-999				HMT451V7AFR8C-H9	FBGA(78ball)	1	18.75mm	Now	
				HMT451V7BFR8C-H9	FBGA(78ball)	1	18.75mm	Now	
				HMT451V7DFR8C-H9	FBGA(78ball)	1	18.75mm	Q2'15	
512Mx4			1866-131313	HMT351V7EFR4C-RD	FBGA(78ball)	1	18.75mm	Now	
			1600-111111	HMT351V7EFR4C-PB	FBGA(78ball)	1	18.75mm	Now	
			1333-999	HMT351V7EFR4C-H9	FBGA(78ball)	1	18.75mm	Now	
256Mx8			1866-131313	HMT351V7EFR8C-RD	FBGA(78ball)	2	18.75mm	Now	
			1600-111111	HMT351V7EFR8C-PB	FBGA(78ball)	2	18.75mm	Now	
			1333-999	HMT351V7EFR8C-H9	FBGA(78ball)	2	18.75mm	Now	
2GB	256Mx72	256Mx8	1866-131313	HMT325V7EFR8C-RD	FBGA(78ball)	1	18.75mm	Now	
			1600-111111	HMT325V7EFR8C-PB	FBGA(78ball)	1	18.75mm	Now	
			1333-999	HMT325V7EFR8C-H9	FBGA(78ball)	1	18.75mm	Now	



## DDR3 SDRAM : Module

### ▪ VLP RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.35V	32GB	4Gx72	4Gx4 (QDP)	1333-999	HMTA4GV7AHR4A-H9	FBGA(82ball)	4	18.75mm	Now
					HMTA4GV7BHR4A-H9	FBGA(82ball)	4	18.75mm	Q1'15
					HMTA4GV7DHR4A-H9	FBGA(82ball)	4	18.75mm	Q4'15
				1066-777	HMTA4GV7AHR4A-G7	FBGA(82ball)	4	18.75mm	Now
					HMTA4GV7BHR4A-G7	FBGA(82ball)	4	18.75mm	Q1'15
					HMTA4GV7DHR4A-G7	FBGA(82ball)	4	18.75mm	Q4'15
	16GB	2Gx72	2Gx4 (DDP)	1600-111111	HMT82GV7AMR4A-PB	FBGA(78ball)	2	18.75mm	Now
					HMT82GV7BMR4A-PB	FBGA(78ball)	2	18.75mm	Nov'14
					HMT82GV7DMR4A-PB	FBGA(78ball)	2	18.75mm	Q3'15
				1333-999	HMT82GV7AMR4A-H9	FBGA(78ball)	2	18.75mm	Now
					HMT82GV7BMR4A-H9	FBGA(78ball)	2	18.75mm	Nov'14
					HMT82GV7DMR4A-H9	FBGA(78ball)	2	18.75mm	Q3'15
				1066-777	HMT82GV7AMR4A-G7	FBGA(78ball)	2	18.75mm	Now
					HMT82GV7BMR4A-G7	FBGA(78ball)	2	18.75mm	Nov'14
					HMT82GV7DMR4A-G7	FBGA(78ball)	2	18.75mm	Q3'15
	8GB	1Gx72	1Gx4	1600-111111	HMT41GV7AFR4A-PB	FBGA(78ball)	1	18.75mm	Now
					HMT41GV7BFR4A-PB	FBGA(78ball)	1	18.75mm	Now
					HMT41GV7DFR4A-PB	FBGA(78ball)	1	18.75mm	Q2'15
1333-999				HMT41GV7AFR4A-H9	FBGA(78ball)	1	18.75mm	Now	
				HMT41GV7BFR4A-H9	FBGA(78ball)	1	18.75mm	Now	
				HMT41GV7DFR4A-H9	FBGA(78ball)	1	18.75mm	Q2'15	
512Mx8			1600-111111	HMT41GV7AFR8A-PB	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7BFR8A-PB	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7DFR8A-PB	FBGA(78ball)	2	18.75mm	Q2'15	
			1333-999	HMT41GV7AFR8A-H9	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7BFR8A-H9	FBGA(78ball)	2	18.75mm	Now	
				HMT41GV7DFR8A-H9	FBGA(78ball)	2	18.75mm	Q2'15	





## DDR3 SDRAM : Module

### ▪ VLP RDIMM (VDD=1.5V)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.		
	DENSITY	ORG.									
1.35V	4GB	512Mx72	512Mx8	1600-111111	HMT451V7AFR8A-PB	FBGA(78ball)	1	18.75mm	Now		
					HMT451V7BFR8A-PB	FBGA(78ball)	1	18.75mm	Now		
					HMT451V7DFR8A-PB	FBGA(78ball)	1	18.75mm	Q2'15		
				1333-999	HMT451V7AFR8A-H9	FBGA(78ball)	1	18.75mm	Now		
					HMT451V7BFR8A-H9	FBGA(78ball)	1	18.75mm	Now		
					HMT451V7DFR8A-H9	FBGA(78ball)	1	18.75mm	Q2'15		
			512Mx4	1600-111111	HMT351V7EFR4A-PB	FBGA(78ball)	1	18.75mm	Now		
					1333-999	HMT351V7EFR4A-H9	FBGA(78ball)	1	18.75mm	Now	
			256Mx8	1600-111111	HMT351V7EFR8A-PB	FBGA(78ball)	2	18.75mm	Now		
					1333-999	HMT351V7EFR8A-H9	FBGA(78ball)	2	18.75mm	Now	
			2GB	256Mx72	256Mx8	1600-111111	HMT325V7EFR8A-PB	FBGA(78ball)	1	18.75mm	Now
							1333-999	HMT325V7EFR8A-H9	FBGA(78ball)	1	18.75mm



## DDR3 SDRAM : Module

### ▪ LRDIMM

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.
	DENSITY	ORG.							
1.5V	64GB	8Gx72	4Gx4 (QDP)	1600-111111	HMTA8GL7AHR4C-PB	FBGA(82ball)	4	30.35mm	Now
					HMTA8GL7BHR4C-PB	FBGA(82ball)	4	30.35mm	Q1'15
				1333-999	HMTA8GL7AHR4C-H9	FBGA(82ball)	4	30.35mm	Now
					HMTA8GL7BHR4C-H9	FBGA(82ball)	4	30.35mm	Q1'15
	32GB	4Gx72	2Gx4 (DDP)	1866-131313	HMT84GL7AMR4C-RD	FBGA(78ball)	4	30.35mm	Now
					HMT84GL7BMR4C-RD	FBGA(78ball)	4	30.35mm	Nov'14
				1600-111111	HMT84GL7AMR4C-PB	FBGA(78ball)	4	30.35mm	Now
					HMT84GL7BMR4C-PB	FBGA(78ball)	4	30.35mm	Nov'14
1333-999	HMT84GL7AMR4C-H9	FBGA(78ball)	4	30.35mm	Now				
	HMT84GL7BMR4C-H9	FBGA(78ball)	4	30.35mm	Nov'14				
1.35V	64GB	8Gx72	4Gx4 (QDP)	1600-111111	HMTA8GL7AHR4A-PB	FBGA(82ball)	4	30.35mm	Now
					HMTA8GL7BHR4A-PB	FBGA(82ball)	4	30.35mm	Q1'15
				1333-999	HMTA8GL7AHR4A-H9	FBGA(82ball)	4	30.35mm	Now
					HMTA8GL7BHR4A-H9	FBGA(82ball)	4	30.35mm	Q1'15
	32GB	4Gx72	2Gx4 (DDP)	1333-999	HMT84GL7AMR4A-H9	FBGA(78ball)	4	30.35mm	Now
					HMT84GL7BMR4A-H9	FBGA(78ball)	4	30.35mm	Nov'14



## DDR3 SDRAM : Module

### ▪ SODIMM (DDR3L-RS)

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.			
	DENSITY	ORG.										
1.35V (DDR3L-RS)	8GB	1Gx64	512Mx8	1866-131313	HMT41GS6AFR8C-RD	FBGA(78ball)	2	30mm	Now			
					HMT41GS6BFR8C-RD	FBGA(78ball)	2	30mm	Now			
					HMT41GS6DFR8C-RD	FBGA(78ball)	2	30mm	Q1'15			
				1600-111111	HMT41GS6AFR8C-PB	FBGA(78ball)	2	30mm	Now			
					HMT41GS6BFR8C-PB	FBGA(78ball)	2	30mm	Now			
					HMT41GS6DFR8C-PB	FBGA(78ball)	2	30mm	Q1'15			
				1333-999	HMT41GS6AFR8C-H9	FBGA(78ball)	2	30mm	Now			
					HMT41GS6BFR8C-H9	FBGA(78ball)	2	30mm	Now			
					HMT41GS6DFR8C-H9	FBGA(78ball)	2	30mm	Q1'15			
	4GB	512Mx64	512Mx8	1866-131313	HMT451S6AFR8C-RD	FBGA(78ball)	1	30mm	Now			
					HMT451S6BFR8C-RD	FBGA(78ball)	1	30mm	Now			
					HMT451S6DFR8C-RD	FBGA(78ball)	1	30mm	Q1'15			
					1600-111111	HMT451S6AFR8C-PB	FBGA(78ball)	1	30mm	Now		
						HMT451S6BFR8C-PB	FBGA(78ball)	1	30mm	Now		
						HMT451S6DFR8C-PB	FBGA(78ball)	1	30mm	Q1'15		
					1333-999	HMT451S6AFR8C-H9	FBGA(78ball)	1	30mm	Now		
						HMT451S6BFR8C-H9	FBGA(78ball)	1	30mm	Now		
						HMT451S6DFR8C-H9	FBGA(78ball)	1	30mm	Q1'15		
				256Mx16	512Mx64	512Mx8	1866-131313	HMT451S6AFR6C-RD	FBGA(78ball)	2	30mm	Now
								HMT451S6AFR6C-PB	FBGA(78ball)	2	30mm	Now
								HMT451S6AFR6C-H9	FBGA(78ball)	2	30mm	Now
							256Mx8	HMT351S6EFR8C-PB	FBGA(78ball)	2	30mm	Now
								HMT351S6EFR8C-H9	FBGA(78ball)	2	30mm	Now
2GB	256Mx64	256Mx16	1866-131313	HMT425S6AFR6C-RD	FBGA(78ball)	1	30mm	Now				
				HMT425S6AFR6C-PB	FBGA(78ball)	1	30mm	Now				
				HMT425S6AFR6C-H9	FBGA(78ball)	1	30mm	Now				
		256Mx8	HMT325S6EFR8C-PB	FBGA(78ball)	1	30mm	Now					
			HMT325S6EFR8C-H9	FBGA(78ball)	1	30mm	Now					



## DDR3 SDRAM : Module

### ▪ ECC SODIMM

VDD	MODULE		BASED COM.	SPEED	PART NUMBER	COMPONENT PKG.	#OF RANK	HEIGHT	AVAIL.		
	DENSITY	ORG.									
1.35V (ECC)	8GB	1Gx64	512Mx8	1866-131313	HMT41GS6AFR8C-RD	FBGA(78ball)	2	30mm	Now		
					HMT41GS6BFR8C-RD	FBGA(78ball)	2	30mm	Now		
					HMT41GS6DFR8C-RD	FBGA(78ball)	2	30mm	Q2'15		
				1600-111111	HMT41GS6AFR8C-PB	FBGA(78ball)	2	30mm	Now		
					HMT41GS6BFR8C-PB	FBGA(78ball)	2	30mm	Now		
					HMT41GS6DFR8C-PB	FBGA(78ball)	2	30mm	Q2'15		
				1333-999	HMT41GS6AFR8C-H9	FBGA(78ball)	2	30mm	Now		
					HMT41GS6BFR8C-H9	FBGA(78ball)	2	30mm	Now		
					HMT41GS6DFR8C-H9	FBGA(78ball)	2	30mm	Q2'15		
	4GB	512Mx64	512Mx8	1866-131313	HMT451S6AFR8C-RD	FBGA(78ball)	1	30mm	Now		
					HMT451S6BFR8C-RD	FBGA(78ball)	1	30mm	Now		
					HMT451S6DFR8C-RD	FBGA(78ball)	1	30mm	Q2'15		
					1600-111111	HMT451S6AFR8C-PB	FBGA(78ball)	1	30mm	Now	
						HMT451S6BFR8C-PB	FBGA(78ball)	1	30mm	Now	
						HMT451S6DFR8C-PB	FBGA(78ball)	1	30mm	Q2'15	
1333-999					HMT451S6AFR8C-H9	FBGA(78ball)	1	30mm	Now		
					HMT451S6BFR8C-H9	FBGA(78ball)	1	30mm	Now		
					HMT451S6DFR8C-H9	FBGA(78ball)	1	30mm	Q2'15		
256Mx8				1600-111111	HMT351S6EFR8C-PB	FBGA(78ball)	2	30mm	Now		
				1333--999	HMT351S6EFR8C-H9	FBGA(78ball)	2	30mm	Now		
				1333-999	HMT325S6EFR8C-H9	FBGA(78ball)	1	30mm	Now		
2GB				256Mx64	256Mx8	1600-111111	HMT325S6EFR8C-PB	FBGA(78ball)	1	30mm	Now
						1333-999	HMT325S6EFR8C-H9	FBGA(78ball)	1	30mm	Now



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