

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
					1600-111111	HMA41GU7MFR8N-PB	FBGA(78ball)	2	31.25mm	Now
							HMA41GU7AFR8N-PB	FBGA(78ball)	2	31.25mm
	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
					1600-111111	HMA451U6MFR8N-PB	FBGA(78ball)	1	31.25mm	Now
							HMA451U6AFR8N-PB	FBGA(78ball)	1	31.25mm
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
					1600-111111	HMA451U7MFR8N-PB	FBGA(78ball)	1	31.25mm	Now
							HMA451U7AFR8N-PB	FBGA(78ball)	1	31.25mm



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	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	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			
					HMT351V7EFR4C-PB	FBGA(78ball)	1	18.75mm	Now			
					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	1866-131313	HMT451S6AFR6C-RD	FBGA(78ball)	2	30mm	Now	
						HMT451S6AFR6C-PB	FBGA(78ball)	2	30mm	Now	
						HMT451S6AFR6C-H9	FBGA(78ball)	2	30mm	Now	
					256Mx8	1600-111111	HMT351S6EFR8C-PB	FBGA(78ball)	2	30mm	Now
						1333-999	HMT351S6EFR8C-H9	FBGA(78ball)	2	30mm	Now
						1600-111111	HMT425S6AFR6C-RD	FBGA(78ball)	1	30mm	Now
2GB	256Mx64	256Mx16	1600-111111	HMT425S6AFR6C-PB	FBGA(78ball)	1	30mm	Now			
			1333-999	HMT425S6AFR6C-H9	FBGA(78ball)	1	30mm	Now			
			256Mx8	1600-111111	HMT325S6EFR8C-PB	FBGA(78ball)	1	30mm	Now		
		1333-999	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



DDR4 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
4Gb	512Mx8	DDR4 2400	H5AN4G8NMFR-UH	FBGA(78ball)	16Bank, 1.2V,CL17,17-17-17	Now
		DDR4 2133	H5AN4G8NMFR-TF	FBGA(78ball)	16Bank, 1.2V,CL15,15-15-15	Now
		DDR4 1866	H5AN4G8NMFR-RD	FBGA(78ball)	16Bank, 1.2V,CL13,13-13-13	Now
	256Mx16	DDR4 2400	H5AN4G6NMFR-UH	FBGA(96ball)	8Bank, 1.2V,CL17,17-17-17	Now
		DDR4 2133	H5AN4G6NMFR-TF	FBGA(96ball)	8Bank, 1.2V,CL15,15-15-15	Now
		DDR4 2133	H5AN4G6NMFR-TF	FBGA(96ball)	8Bank, 1.2V,CL15,15-15-15	Now



DDR3 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
8Gb(2CS)	1Gx8	DDR3 1866	H5TQ8G83AMR-RD	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC8G83AMR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1600	H5TQ8G83AFR-PB	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC8G83AFR-PB	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1333	H5TQ8G83AFR-H9	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC8G83AFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now
	512Mx16	DDR3 1866	H5TQ8G63AMR-RD	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC8G63AMR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1600	H5TQ8G63AFR-PB	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC8G63AFR-PB	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1333	H5TQ8G63AFR-H9	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC8G63AFR-H9	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now



DDR3 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
4Gb	512Mx8	DDR3 2133	H5TQ4G83AFR-TE	FBGA(78ball)	8Bank, 1.5V, CL14,14-14-14	Now
			H5TC4G83CFR-TE	FBGA(78ball)	8Bank, 1.5V, CL14,14-14-14	Now
		DDR3 1866	H5TQ4G83AFR-RD	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC4G83AFR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	Now
			H5TQ4G83CFR-RD	FBGA(78ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC4G83CFR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1600	H5TQ4G83AFR-PB	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC4G83AFR-PB	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now
			H5TQ4G83CFR-PB	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC4G83CFR-PB	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1333	H5TQ4G83AFR-H9	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC4G83AFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now
			H5TQ4G83CFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now
			H5TC4G83CFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now
		DDR3 1066	H5TQ4G83AFR-G7	FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	Now
			H5TC4G83AFR-G7	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Now
	H5TQ4G83CFR-G7		FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	Now	
	H5TC4G83CFR-G7		FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Now	
	256Mx16	DDR3 2133	H5TQ4G63AFR-TE	FBGA(96ball)	8Bank, 1.5V, CL14,14-14-14	Now
			H5TC4G63CFR-TE	FBGA(96ball)	8Bank, 1.5V, CL14,14-14-14	Now
		DDR3 1866	H5TQ4G63AFR-RD	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC4G63AFR-RD	FBGA(96ball)	8Bank, 1.35V, CL13,13-13-13	Now
			H5TQ4G63CFR-RD	FBGA(96ball)	8Bank, 1.5V, CL13,13-13-13	Now
			H5TC4G63CFR-RD	FBGA(96ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1600	H5TQ4G63AFR-PB	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC4G63AFR-PB	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
			H5TQ4G63CFR-PB	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC4G63CFR-PB	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1333	H5TQ4G63AFR-H9	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC4G63AFR-H9	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now
			H5TQ4G63CFR-H9	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC4G63CFR-H9	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now
DDR3 1066		H5TQ4G63AFR-G7	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	Now	
		H5TC4G63AFR-G7	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Now	
		H5TQ4G63CFR-G7	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	Now	
		H5TC4G63CFR-G7	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Now	



DDR3 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
2Gb	256Mx8	DDR3 2133	H5TQ2G83FFR-TE	FBGA(78ball)	8Bank, 1.5V, CL14,14-14-14	Now
			H5TC2G83FFR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1866	H5TQ2G83FFR-RD	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC2G83FFR-PB	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1600	H5TQ2G83FFR-PB	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC2G83FFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	Now
		DDR3 1333	H5TQ2G83FFR-H9	FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	Now
			H5TC2G83FFR-G7	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	Now
	128Mx16	DDR3 2133	H5TQ2G63FFR-TE	FBGA(96ball)	8Bank, 1.5V, CL14,14-14-14	Now
			H5TC2G63FFR-RD	FBGA(96ball)	8Bank, 1.35V, CL13,13-13-13	Now
		DDR3 1866	H5TQ2G63FFR-RD	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	Now
			H5TC2G63FFR-RB	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	Now
		DDR3 1600	H5TQ2G63FFR-RB	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	Now
			H5TC2G63FFR-H9	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	Now
		DDR3 1333	H5TQ2G63FFR-H9	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	Now
			H5TC2G63FFR-G7	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	Now
1Gb	128Mx16	DDR3 2133	H5TQ1G83EFR-TE	FBGA(78ball)	8Bank, 1.5V, CL14,14-14-14	EOL:Q1'15
			H5TC1G83EFR-RD	FBGA(78ball)	8Bank, 1.35V, CL13,13-13-13	EOL:Q1'15
		DDR3 1866	H5TQ1G83EFR-RD	FBGA(78ball)	8Bank, 1.5V, CL11,11-11-11	EOL:Q1'15
			H5TC1G83EFR-PB	FBGA(78ball)	8Bank, 1.35V, CL11,11-11-11	EOL:Q1'15
		DDR3 1600	H5TQ1G83EFR-PB	FBGA(78ball)	8Bank, 1.5V, CL9,9-9-9	EOL:Q1'15
			H5TC1G83EFR-H9	FBGA(78ball)	8Bank, 1.35V, CL9,9-9-9	EOL:Q1'15
		DDR3 1333	H5TQ1G83EFR-H9	FBGA(78ball)	8Bank, 1.5V, CL7,7-7-7	EOL:Q1'15
			H5TC1G83EFR-G7	FBGA(78ball)	8Bank, 1.35V, CL7,7-7-7	EOL:Q1'15
	64Mx16	DDR3 2133	H5TQ1G63EFR-TE	FBGA(96ball)	8Bank, 1.5V, CL14,14-14-14	EOL:Q1'15
			H5TC1G63EFR-RD	FBGA(96ball)	8Bank, 1.35V, CL13,13-13-13	EOL:Q1'15
		DDR3 1866	H5TQ1G63EFR-RD	FBGA(96ball)	8Bank, 1.5V, CL11,11-11-11	EOL:Q1'15
			H5TC1G63EFR-PB	FBGA(96ball)	8Bank, 1.35V, CL11,11-11-11	EOL:Q1'15
		DDR3 1600	H5TQ1G63EFR-PB	FBGA(96ball)	8Bank, 1.5V, CL9,9-9-9	EOL:Q1'15
			H5TC1G63EFR-H9	FBGA(96ball)	8Bank, 1.35V, CL9,9-9-9	EOL:Q1'15
		DDR3 1333	H5TQ1G63EFR-H9	FBGA(96ball)	8Bank, 1.5V, CL7,7-7-7	EOL:Q1'15
			H5TC1G63EFR-G7	FBGA(96ball)	8Bank, 1.35V, CL7,7-7-7	EOL:Q1'15



DDR2 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
1Gb	64Mx8	DDR2 1066	H5PS1G83KFR-G7	FBGA(60ball)	8Bank, 1.8V, 7-7-7	Now
		DDR2 800	H5PS1G83KFR-S5	FBGA(60ball)	8Bank, 1.8V, 5-5-5	Now
		DDR2 667	H5PS1G83KFR-Y5	FBGA(60ball)	8Bank, 1.8V, 5-5-5	Now
	64Mx16	DDR2 1066	H5PS1G63KFR-G7	FBGA(84ball)	8Bank, 1.8V, 7-7-7	Now
		DDR2 800	H5PS1G63KFR-S5	FBGA(84ball)	8Bank, 1.8V, 5-5-5	Now
		DDR2 667	H5PS1G63KFR-Y5	FBGA(84ball)	8Bank, 1.8V, 5-5-5	Now
512Mb	64Mx8	DDR2 1066	H5PS5182KFR-G7	FBGA(60ball)	4Bank, 1.8V, 7-7-7	Now
		DDR2 800	H5PS5182KFR-S5	FBGA(60ball)	4Bank, 1.8V, 5-5-5	Now
		DDR2 667	H5PS5182KFR-Y5	FBGA(60ball)	4Bank, 1.8V, 5-5-5	Now
	32Mx16	DDR2 1066	H5PS5162KFR-G7	FBGA(84ball)	4Bank, 1.8V, 7-7-7	Now
		DDR2 800	H5PS5162KFR-S5	FBGA(84ball)	4Bank, 1.8V, 5-5-5	Now
		DDR2 667	H5PS5162KFR-Y5	FBGA(84ball)	4Bank, 1.8V, 5-5-5	Now



HBM (High Bandwidth Memory)

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
1Gb	128GB/s	1.0Gbps	H5VR8GESM4R-20C	5mKGSD	4Hi stack, VDD/VDDQ=1.2V	Now



GDDR5 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
4Gb	128Mx32	8.0Gbps	H5GQ4H24AJR-R4C	FBGA(170ball)	16Bank, 1.55V/1.55V	Now
		7.0Gbps	H5GC4H24AJR-R0C	FBGA(170ball)	16Bank, 1.5V/1.5V	Now
		6.0Gbps			16Bank, 1.35V/1.35V	Now
		5.0Gbps	H5GC4H24AJR-T2C	FBGA(170ball)	16Bank, 1.5V/1.5V	Now
		4.0Gbps			16Bank, 1.35V/1.35V	Now
4Gb	128Mx32	7.0Gbps	H5GQ4H24MFR-R2C	FBGA(170ball)	16Bank, 1.55V/1.55V	Now
		6.0Gbps	H5GC4H24MFR-T2C	FBGA(170ball)	16Bank, 1.5V/1.5V	Now
		5.0Gbps			16Bank, 1.35V/1.35V	Now
		5.0Gbps	H5GC4H24MFR-T0C	FBGA(170ball)	16Bank, 1.5V/1.5V	Now
		4.0Gbps			16Bank, 1.35V/1.35V	Now
2Gb	64Mx32	7.0Gbps	H5GQ2H24BFR-R2C	FBGA(170ball)	16Bank, 1.55V/1.55V	Now
		6.0Gbps	H5GC2H24BFR-R0C	FBGA(170ball)	16Bank, 1.35V/1.35V	Now



DDR3 SDRAM

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
4Gb	256Mx16	1.2GHz(0.83ns)	H5TQ4G63CFR-N2C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		1.1GHz(0.9ns)	H5TC4G63CFR-N0C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		1.0GHz (1.0ns)		FBGA(96ball)	8Bank, 1.35V/1.35V	Now
		1.1GHz (0.9ns)	H5TQ4G63AFR-N1C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		1.0GHz (1.0ns)	H5TC4G63AFR-11C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		900MHz (1.1ns)		FBGA(96ball)	8Bank, 1.35V/1.35V	Now
		900MHz (1.1ns)	H5TQ4G63MFR-11C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
2Gb	128Mx16	1.1GHz (0.9ns)	H5TQ2G63FFR-N1C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		1.0GHz (1.0ns)	H5TC2G63FFR-N0C	FBGA(96ball)	8Bank, 1.35V/1.35V	Now
		1.0GHz (1.0ns)	H5TC2G63FFR-11C	FBGA(96ball)	8Bank, 1.5V/1.5V	Now
		900MHz (1.1ns)		FBGA(96ball)	8Bank, 1.35V/1.35V	Now



LPDDR3

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
24Gb	192M x 32	DDR3-1866	H9CKNNNDATMTDR-NUH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CKNNNDATMRPR-NUH	FBGA(256ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CKNNNDBTMTAR-NUH	FBGA(504ball)	8Bank, 1.8V/1.2V/1.2V	Now
16Gb	256M x 32	DDR3-1866	H9CKNNNBJTmplR-NUH	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CKNNNBKTMtDR-NUH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H9CKNNNBKTMtDR-NTH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CKNNNBKTMrPR-NUH	FBGA(256ball)	8Bank, 1.8V/1.2V/1.2V	Now
	128M x 32	DDR3-1866	H9CCNNNBTLAR-NUH	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H10CCNNNBTLAR-NTM	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CKNNNBPTATDR-NUH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H9CKNNNBPTATDR-NTH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CCNNNBPTALBR-NUH	FBGA(253ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H9CCNNNBPTALBR-NTM	FBGA(253ball)	8Bank, 1.8V/1.2V/1.2V	Now
8Gb	256M x 32	DDR3-1866	H9CKNNN8GTmplR-NUH	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H9CKNNN8GTmplR-NTH	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
	128M x 32	DDR3-1866	H9CCNNN8JTALAR-NUH	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1600	H9CCNNN8JTALAR-NTM	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1866	H9CCNNN8KTALBR-NUH	FBGA(253ball)	8Bank, 1.8V/1.2V/1.2V	Now
4Gb	128M x 32	DDR3-1600	H9CCNNN4GTMLAR-NTM	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR3-1333	H9CCNNN4GTMLAR-NKM	FBGA(178ball)	8Bank, 1.8V/1.2V/1.2V	Now

* All SDRAM is Available For Lead Free or Lead & Halogen Free



LPDDR2

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
16Gb	128M x 32	DDR2-1066	H9TCNNNBLDMMPR-NGM	FBGA(134ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TCNNNBLDMMPR-NDM	FBGA(134ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNNBLDMPLR-NGM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNNBPDMPQR-NGH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNNBPDMPQR-NDH	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNNBPDMPRAR-NGH	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNNBPDMPRAR-NDH	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNNBPDARAR-NGH	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
DDR2-800	H9TKNNNBPDARAR-NDH	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now		
8Gb	128M x 32	DDR2-1066	H9TCNNN8JDMMPR-NGM	FBGA(134ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TCNNN8JDMMPR-NDM	FBGA(134ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8JDMPLR-NGM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN8JDMPLR-NDM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8JDAPLR-NGH	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8JDMRHR-NGM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8JDARHR-NGM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN8JDMRHR-NDM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8KDMRAR-NGM	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN8KDMRAR-NDM	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8KDARAR-NGH	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN8KDARAR-NDM	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN8KDMPRR-NGM	FBGA(240ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN8KDMPRR-NDM	FBGA(240ball)	8Bank, 1.8V/1.2V/1.2V	Now

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LPDDR2

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
4Gb	128M x 32	DDR2-1066	H9TKNNN4GDMPLR-NGM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4GDMPLR-NDM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4GDAPLR-NGH	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4GDMRHR-NGM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4GDMRHR-NDM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4GDARHR-NGM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4GDARHR-NDM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
	64M x 32	DDR2-1066	H9TKNNN4JDAPLR-NGM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4JDAPLR-NDM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4KDAPQR-NGM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4KDAPQR-NDM	FBGA(216ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4KDMRAR-NGM	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN4KDMRAR-NDM	FBGA(220ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-1066	H9TKNNN4KDAPRR-NGM	FBGA(240ball)	8Bank, 1.8V/1.2V/1.2V	Now
2Gb	64M x 32	DDR2-1066	H9TKNNN2GDAPLR-NGM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now
		DDR2-800	H9TKNNN2GDAPLR-NDM	FBGA(168ball)	8Bank, 1.8V/1.2V/1.2V	Now

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Mobile DDR

DENSITY	ORG.	SPEED	PART NUMBER	PKG.	FEATURE	AVAIL.
2Gb	64M x 16	DDR400	H5MS2G62BFR-E3M	FBGA(60ball)	4Bank, 1.8V/1.8V	Now
		DDR333	H5MS2G62BFR-J3M	FBGA(60ball)	4Bank, 1.8V/1.8V	Now
	32M x 32	DDR400	H5MS2G22BFR-EBM	FBGA(90ball)	4Bank, 1.8V/1.8V	Now
		DDR333	H5MS2G32BFR-J3M	FBGA(90ball)	4Bank, 1.8V/1.8V	Now
	32M x 32 (reduced page size)	DDR400	H5MS2G32BFR-E3M	FBGA(90ball)	4Bank, 1.8V/1.8V	Now
		DDR333	H5MS2G32BFR-J3M	FBGA(90ball)	4Bank, 1.8V/1.8V	Now

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SLC

PRODUCT	TECH.	DENSITY	BLOCK SIZE	STACK	VCC/ORG	PKG.	AVAIL.	REMARK
H27U1G8F2B	4xnm class	1Gb	128KB	SDP	3.3v/X8	TSOP/FBGA	Now	-
H27S1G8F2B	4xnm class	1Gb	128KB	SDP	1.8v/X8	FBGA	Now	-
H27U1G8F2C	3xnm class	1Gb	128KB	SDP	3.3v/X8	TSOP/FBGA	Now	-
H27S1G8F2C	3xnm class	1Gb	128KB	SDP	1.8v/X8	FBGA	Now	-
H27U2G8F2C	4ynm class	2Gb	128KB	SDP	3.3v/X8	TSOP/FBGA	Now	-
H27S2G8F2C	4ynm class	2Gb	128KB	SDP	1.8v/X8	FBGA	Now	-
H27U2G8F2D	3xnm class	2Gb	128KB	SDP	3.3v/X8	TSOP	Now	-
H27U4G8F2D	4ynm class	4Gb	128KB	SDP	3.3v/X8	TSOP	Now	-
H27U4G8F2E	3xnm class	4Gb	128KB	SDP	3.3v/X8	TSOP	Now	-
H27U4G8F2F	2xnm class	4Gb	256KB	SDP	3.3v/X8	TSOP	Now	-
H27S4G8F2F	2xnm class	4Gb	256KB	SDP	1.8v/X8	TSOP	Now	-
H27U8G8G5D	4ynm class	8Gb	128KB	DDP	3.3v/X8	TSOP	Now	-



MLC

PRODUCT	TECH.	DENSITY	BLOCK SIZE	STACK	VCC/ORG	PKG.	AVAIL.	REMARK
H27UCG8T2A	2ynm class	64Gb	2MB	SDP	3.3v/X8	TSOP	Now	-
H27UCG8T2B	2ynm class	64Gb	4MB	SDP	3.3v/X8	TSOP/FBGA-132	Now	-
H27UBG8T2C	2ynm class	32Gb	2MB	SDP	3.3v/X8	TSOP	Now	-
H27UAG8T2C	2ynm class	16Gb	2MB	SDP	3.3v/X8	TSOP/PGD2	Now	-
H27QCGDT2B	2ynm class	64Gb	4MB	SDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QDGDUDB	2ynm class	128Gb	4MB	DDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QEGDVEB	2ynm class	256Gb	4MB	QDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QFGDYEB	2ynm class	512Gb	4MB	ODP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27UCG8T2E	1xnm class	64Gb	4MB	SDP	3.3v/x8	TSOP	Now	-
H27QCG8T2D	1xnm class	64Gb	2MB	SDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QDG8UDD	1xnm class	128Gb	2MB	DDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QEG8VED	1xnm class	256Gb	2MB	QDP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QFG8YED	1xnm class	512Gb	2MB	ODP	3.3v/x8	FBGA-132	Now	HS(ONFi3.0)
H27QCG8T2E	1xnm class	64Gb	4MB	SDP	3.3v/x8	FBGA-132	Now	HS(Toggle2.0)
H27QDG8UDE	1xnm class	128Gb	4MB	DDP	3.3v/x8	FBGA-132	Now	HS(Toggle2.0)
H27QEG8VEE	1xnm class	256Gb	4MB	QDP	3.3v/x8	FBGA-132	Now	HS(Toggle2.0)
H27QFG8YEE	1xnm class	512Gb	4MB	ODP	3.3v/x8	FBGA-132	Now	HS(Toggle2.0)
H27QCG8T2F	1xnm class	64Gb	4MB	SDP	3.3v/x8	FBGA-132	Q4'14	HS(Toggle2.0)
H27QDG8UDF	1xnm class	128Gb	4MB	DDP	3.3v/x8	FBGA-132	Q4'14	HS(Toggle2.0)
H27QEG8VEF	1xnm class	256Gb	4MB	QDP	3.3v/x8	FBGA-132	Q4'14	HS(Toggle2.0)
H27QFG8YEF	1xnm class	512Gb	4MB	ODP	3.3v/x8	FBGA-132	Q4'14	HS(Toggle2.0)
H27QDG8T2B	1xnm class	128Gb	4MB	SDP	3.3v/x8	FBGA-152	Now	HS(Toggle2.0)
H27QEG8UDB	1xnm class	256Gb	4MB	DDP	3.3v/x8	FBGA-152	Now	HS(Toggle2.0)
H27QFG8VEB	1xnm class	512Gb	4MB	QDP	3.3v/x8	FBGA-152	Now	HS(Toggle2.0)
H27Q1T8YEB	1xnm class	1024Gb	4MB	ODP	3.3v/x8	FBGA-152	Now	HS(Toggle2.0)
H27QEG8T2M	3D-V2 class	256Gb	9MB	SDP	3.3v/x8	FBGA-132	Q2'15	HS(Toggle2.0)
H27QFG8UDM	3D-V2 class	512Gb	9MB	DDP	3.3v/x8	FBGA-132	Q2'15	HS(Toggle2.0)
H27Q1T8VEM	3D-V2 class	1Tb	9MB	QDP	3.3v/x8	FBGA-132	Q2'15	HS(Toggle2.0)
H27Q2T8YEM	3D-V2 class	2Tb	9MB	ODP	3.3v/x8	FBGA-132	Q2'15	HS(Toggle2.0)
H27QCG8T2A	2ynm class	64Gb	2MB	SDP	3.3v/x8	FBGA-132	Now	HS(ONFi2.2)
H27QDG8UDA	2ynm class	128Gb	2MB	DDP	3.3v/x8	FBGA-132	Now	HS(ONFi2.2)
H27QEG8VEA	2ynm class	256Gb	2MB	QDP	3.3v/x8	FBGA-132	Now	HS(ONFi2.2)
H27QFG8YEA	2ynm class	512Gb	2MB	ODP	3.3v/x8	FBGA-132	Now	HS(ONFi2.2)



TLC

PRODUCT	TECH.	DENSITY	BLOCK SIZE	STACK	VCC/ORG	PKG.	AVAIL.	REMARK
H27QDG8M2M	1xnm class	128Gb	4MB	SDP	3.3v/X8	FBGA-132	Q4'14 (TBD)	HS(Toggle2.0)
H27QEG8NDM	1xnm class	256Gb	4MB	DDP	3.3v/X8	FBGA-132	Q4'14 (TBD)	HS(Toggle2.0)
H27QFG8PEM	1xnm class	512Gb	4MB	QDP	3.3v/X8	FBGA-132	Q4'14 (TBD)	HS(Toggle2.0)
H27Q1T8QEM	1xnm class	1Tb	4MB	ODP	3.3v/X8	FBGA-132	Q4'14 (TBD)	HS(Toggle2.0)



eMMC

PRODUCT	DENSITY	BASE COMPONENT			VCC/ORG	VERSION	AVAIL.	REMARK
		TECH.	DENSITY	STACK				
H26M21001FPR	2GB	2ynm class	16Gb	1	3.3V/x8/x4	MMC4.41	Now	11.5x13x0.8
H26M21001FRR	2GB	2ynm class	16Gb	1	3.3V/x8/x4	MMC4.41	Now	11x10x0.8
H26M31002GPR	4GB	2ynm class	32Gb	1	3.3V/x8/x4	MMC4.41	EOL	11.5x13x0.8
H26M31002GRR	4GB	2ynm class	32Gb	1	3.3V/x8/x4	MMC4.41	EOL	11x10x0.8
H26M31003GMR	4GB	2ynm class	32Gb	1	3.3V/x8/x4	MMC4.5	EOL	11.5x13x1.0
H26M31001HPR	4GB	1xnm Class	32Gb	1	3.3V/x8/x4	MMC4.5	Now	11.5x13x0.8
H26M42003GMR	8GB	2ynm class	32Gb	2	3.3V/x8/x4	MMC4.5	EOL	11.5x13x1.0
H26M41001HPR	8GB	1xnm Class	64Gb	1	3.3V/x8/x4	MMC4.5	EOL	11.5x13x0.8
H26M41103HPR	8GB	1xnm Class	64Gb	1	3.3V/x8/x4	MMC5.0	Now	11.5x13x0.8
H26M52003EQR	16GB	2ynm class	64Gb	2	3.3V/x8/x4	MMC4.5	EOL	12x16x1.0
H26M54003EMR	16GB	2ynm class	32Gb	4	3.3V/x8/x4	MMC4.5	EOL	11.5x13x1.0
H26M52001FMR	16GB	1xnm class	64Gb	2	3.3V/x8/x4	MMC4.5	EOL	11.5x13x1.0
H26M52001FPR	16GB	1xnm class	64Gb	2	3.3V/x8/x4	MMC5.0	EOL	11.5x13x0.8
H26M52103FPR	16GB	1xnm class	64Gb	2	3.3V/x8/x4	MMC5.0	Now	11.5x13x0.8
H26M52103FMR	16GB	1xnm class	64Gb	2	3.3V/x8/x4	MMC5.0	Now	11.5x13x1.0
H26M64003DQR	32GB	2ynm class	64Gb	4	3.3V/x8/x4	MMC 4.5	EOL	12x16x1.0
H26M64001EMR	32GB	1xnm class	64Gb	4	3.3V/x8/x4	MMC 4.5	EOL	11.5x13x1.0
H26M64103EMR	32GB	1xnm class	64Gb	4	3.3V/x8/x4	MMC 5.0	Now	11.5x13x1.0
H26M78003BFR	64GB	2ynm class	64Gb	8	3.3V/x8/x4	MMC 4.5	EOL	12x16x1.2
H26M78103CMR	64GB	1xnm class	64Gb	8	3.3V/x8/x4	MMC 5.0	EOL	11.5x13x1.0
H26M78103CCR	64GB	1xnm class	64Gb	8	3.3V/x8/x4	MMC 5.0	Now	11.5x13x1.2
H26M41208HPR	8GB	1xnm class	64Gb	1	3.3V/x8/x4	MMC 5.1	Q1'15	11.5x13x0.8
H26M52208FMR	16GB	1xnm class	64Gb	2	3.3V/x8/x4	MMC 5.1	Q1'15	11.5x13x0.8
H26M64208EMR	32GB	1xnm class	64Gb	4	3.3V/x8/x4	MMC 5.1	Q1'15	11.5x13x1.0
H26M78208CMR	64GB	1xnm class	64Gb	8	3.3V/x8/x4	MMC 5.1	Q1'15	11.5x13x1.0



E2NAND3.0

PRODUCT	TECH.	DENSITY	BLOCK SIZE	STACK	VCC/ORG	PKG.	AVAIL.	REMARK
H2JTCG8T21BMR	1xnm class	64Gb	4MB	1	3.0V,3.3V/x8	WLGA	Now	Non Shielded
H2JTDG8UD1BMR	1xnm class	128Gb	4MB	2	3.0V,3.3V/x8	WLGA	Now	Non Shielded
H2JTEG8VD1BMR	1xnm class	256Gb	4MB	4	3.0V,3.3V/x8	WLGA	Now	Non Shielded
H2JTFG8YD1BMR	1xnm class	512Gb	4MB	8	3.0V,3.3V/x8	WLGA	Now	Non Shielded
H2JTDG8UD1BMS	1xnm class	128Gb	4MB	2	3.0V,3.3V/x8	WLGA	Now	EMI Shielded
H2JTEG8VD1BMS	1xnm class	256Gb	4MB	4	3.0V,3.3V/x8	WLGA	Now	EMI Shielded
H2JTFG8YD1BMS	1xnm class	512Gb	4MB	8	3.0V,3.3V/x8	WLGA	Now	EMI Shielded



Standard 2.5" 7mm Form Factor

PRODUCT	DENSITY	NAND COMPONENT			Form Factor	I/F.	AVAIL.
		TECH.	DENSITY	STACK			
HFS064G32MNB-2200A	64GB	2ynm	64Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS128G32MNB-2200A	128GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS256G32MNB-2200A	256GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS512G32MNB-2200A	512GB	2ynm	64Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS250G32MNB-2000A	250GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	EOL
HFS500G32MNB-2000A	500GB	2ynm	64Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	EOL
HFS060G32MNB-2000A	60GB	2ynm	64Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS120G32MNB-2000A	120GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS240G32MNB-2000A	240GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS480G32MNB-2000A	480GB	2ynm	64Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS060G32MEB-2400A	60GB	2ynm	64Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS120G32MEB-2400A	120GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS240G32MEB-2400A	240GB	2ynm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS400G32MEB-2420A	400GB	2ynm	64Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	EOL
HFS480G32MEB-2400A	480GB	2ynm	64Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS128G32MND-2200A	128GB	1xnm	128Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS256G32MND-2200A	256GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS512G32MND-2200A	512GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS128G32MNC-2200A	128GB	1xnm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Now
HFS128G32MND-3310A	128GB	1xnm	128Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS256G32MND-3310A	256GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS512G32MND-3310A	512GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS128G32MNC-3310A	128GB	1xnm	64Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS250G32TND-3300A	250GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS500G32TND-3300A	500GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS120G32MED-3400A	120GB	1xnm	128Gb	2	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS240G32MED-3400A	240GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS480G32MED-3400A	480GB	1xnm	128Gb	4	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14
HFS960G32MED-3400A	960GB	1xnm	128Gb	8	STD. SSD 2.5"	SATA III (6Gbps)	Dec'14



mSATA

PRODUCT	DENSITY	NAND COMPONENT			Form Factor	I/F.	AVAIL.
		TECH.	DENSITY	STACK			
HFS032G3AMNB-2200A	32GB	2ynm	64Gb	2	mSATA	SATA III (6Gbps)	Now
HFS064G3AMNB-2200A	64GB	2ynm	64Gb	2	mSATA	SATA III (6Gbps)	Now
HFS128G3AMNB-2200A	128GB	2ynm	64Gb	4	mSATA	SATA III (6Gbps)	Now
HFS256G3AMNB-2200A	256GB	2ynm	64Gb	8	mSATA	SATA III (6Gbps)	Now
HFS128G3AMND-2200A	128GB	1xnm	128Gb	2	mSATA	SATA III (6Gbps)	Now
HFS256G3AMND-2200A	256GB	1xnm	128Gb	4	mSATA	SATA III (6Gbps)	Now
HFS128G3AMNC-2200A	128GB	1xnm	64Gb	4	mSATA	SATA III (6Gbps)	Now
HFS128G3AMND-3310A	128GB	1xnm	128Gb	2	mSATA	SATA III (6Gbps)	Dec'14
HFS256G3AMND-3310A	256GB	1xnm	128Gb	4	mSATA	SATA III (6Gbps)	Dec'14
HFS512G3AMND-3310A	512GB	1xnm	128Gb	8	mSATA	SATA III (6Gbps)	Dec'14
HFS128G3AMNC-3310A	128GB	1xnm	64Gb	4	mSATA	SATA III (6Gbps)	Dec'14



NGFF (M.2)

PRODUCT	DENSITY	NAND COMPONENT			Form Factor	I/F.	AVAIL.
		TECH.	DENSITY	STACK			
HFS032G34MNB-2200A	32GB	2ynm	64Gb	4	M.2 2242	SATA III (6Gbps)	Now
HFS128G36MNB-2300A	128GB	2ynm	64Gb	4	M.2 2260	SATA III (6Gbps)	Now
HFS256G36MNB-2300A	256GB	2ynm	64Gb	8	M.2 2260	SATA III (6Gbps)	Now
HFS064G38MNB-2200A	64GB	2ynm	64Gb	4	M.2 2280	SATA III (6Gbps)	Now
HFS128G38MNB-2200A	128GB	2ynm	64Gb	4	M.2 2280	SATA III (6Gbps)	Now
HFS256G38MNB-2200A	256GB	2ynm	64Gb	8	M.2 2280	SATA III (6Gbps)	Now
HFS128G39MND-2200A	128GB	1xnm	128Gb	4	M.2 2280 Single	SATA III (6Gbps)	Now
HFS256G39MND-2200A	256GB	1xnm	128Gb	8	M.2 2280 Single	SATA III (6Gbps)	Now
HFS128G39MNC-2200A	128GB	1xnm	64Gb	8	M.2 2280 Single	SATA III (6Gbps)	Now
HFS128G39MND-3310A	128GB	1xnm	128Gb	4	M.2 2280 Single	SATA III (6Gbps)	Dec'14
HFS256G39MND-3310A	256GB	1xnm	128Gb	8	M.2 2280 Single	SATA III (6Gbps)	Dec'14
HFS512G39MND-3310A	512GB	1xnm	128Gb	16	M.2 2280 Single	SATA III (6Gbps)	Dec'14
HFS128G39MNC-3310A	128GB	1xnm	64Gb	8	M.2 2280 Single	SATA III (6Gbps)	Dec'14
HFS256GA6MND-4210A	256GB	1xnm	128Gb	8	M.2 2260 Double	PCIe Gen2x2	Nov'14
HFS512GA6MND-4210A	512GB	1xnm	128Gb	16	M.2 2260 Double	PCIe Gen2x2	Dec'14
HFS128GB9MND-4210A	128GB	1xnm	128Gb	4	M.2 2280 Single	PCIe Gen2x4	Nov'14
HFS256GB9MND-4210A	256GB	1xnm	128Gb	8	M.2 2280 Single	PCIe Gen2x4	Nov'14
HFS512GB9MND-4210A	512GB	1xnm	128Gb	16	M.2 2280 Single	PCIe Gen2x4	Dec'14
HFS128GB9MNC-4210A	128GB	1xnm	64Gb	8	M.2 2280 Single	PCIe Gen2x4	Dec'14
HFS256GB9MNC-4210A	256GB	1xnm	64Gb	16	M.2 2280 Single	PCIe Gen2x4	Dec'14



		VGA			HD		
Part Number		YACBA21S	YACBAD1S	YACBAE1S	YACY611C	YACY9A1C	YACY6A1C
		Hi-704	Hi-707	Hi-708	Hi-162	Hi-191	Hi-165
Optical Format		1/10-inch	1/10-inch	1/10-inch	1/5.5-inch	1/9-inch	1/6-inch
Pixel Size		2.25um x 2.25um	2.2um x 2.2um	2.125um x 2.125um	2.0um x 2.0um	1.4um x 1.4um BSI	1.75um x 1.75um BSI
Active Array Format		640H x 480V	640H x 480V	640H x 480V	1280H x 800V	1280H x 720V	1280H x 800V
Frame Rate		30-fps @full resolution	30-fps @full resolution	30-fps @full resolution	30-fps @full resolution 30-fps @ 720P	60-fps @full resolution 60-fps @ 720P	30fps @full resolution
Type		SOC	SOC	SOC	RAW	RAW	RAW
Output Format		YUV4:2:2 RGB5:6:5 RGB4:4:4	YUV4:2:2 RGB5:6:5 RGB4:4:4	YUV4:2:2 RGB5:6:5 RGB4:4:4	Bayer 10bit	Bayer 10bit	Bayer 10bit
Supply Voltage	Digital I/O	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V
	Digital Core	1.8V	1.8V	1.8V	1.8V	1.2V / 1.8V	1.2V
	Analog & Pixel	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Operating Temp.		-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Status		Mass Production	Mass Production	Mass Production	Mass Production	Mass Production	Mass Production
Packaging		Bare Die (COB) ShellUT CSP	Bare Die (COB) NeoPAC CSP	Bare Die (COB) TSV CSP	Bare Die (COB) ShellUT CSP NeoPAC CSP	Bare Die (COB) NeoPAC CSP	Bare die (COB) NeoPAC CSP
Interface		Parallel	MIPI	Parallel	Parallel	Parallel / MIPI	Parallel / MIPI



		1.3M	2M				
Part Number		YACC6C1S	YACD511S	YACD5C1S	YACD521S	YACD5D1S	YACD5E1S
		Hi-163	Hi-253	Hi-255	Hi-256	Hi-257	Hi-258
Optical Format		1/6-inch	1/5-inch	1/5-inch	1/5-inch	1/5-inch	1/5-inch
Pixel Size		1.75um x 1.75um	1.75um x 1.75um	1.75um x 1.75um	1.75um x 1.75um	1.75um x 1.75um	1.75um x 1.75um
Active Array Format		1280H x 960V	1600H x 1200V	1600H x 1200V	1600H x 1200V	1600H x 1200V	1600H x 1200V
Frame Rate		15-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution
Type		SOC	SOC	SOC	SOC	SOC	SOC
Output Format		YUV4:2:2 / RGB5:6:5 / ITU656-like Bayer 8-bit @ Parallel Bayer 10-bit @ MIPI	YUV4:2:2 RGB5:6:5 ITU656-like	YUV4:2:2 RGB5:6:5 ITU656-like	YUV4:2:2 RGB5:6:5 ITU656-like	YUV4:2:2 RGB5:6:5	YUV4:2:2 RGB5:6:5/4:4:4/5:5:5
Supply Voltage	Digital I/O	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V
	Digital Core	1.8V	1.8V	1.8V	1.8V	1.8V	1.8V
	Analog & Pixel	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Operating Temp.		-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Status		Mass Production	Mass Production	Mass Production	Mass Production	Mass Production	Mass Production
Packaging		Bare die (COB) Recon. Wafer NeoPAC CSP	Bare die (COB) ShellUT CSP	Bare die (COB)	ShellUT CSP	Bare die (COB) TSV CSP	Bare die (COB) TSV CSP
Interface		Parallel / MIPI	Parallel	Parallel / MIPI	Parallel / MIPI	Parallel	MIPI



		2M	FHD	3M		5M	
Part Number		YACD5F1C	YACD6A1C	YACE5B1S	YACE5C1S	YACF4D1C	YACF4B1C
		Hi-259	Hi-261	Hi-351	Hi-352	Hi-541	Hi-542
Optical Format		1/5-inch	1/6-inch	1/5-inch	1/5-inch	1/4-inch	1/4-inch
Pixel Size		1.75um x 1.75um	1.34um x 1.34um BSI	1.4um x 1.4um	1.4um x 1.4um	1.4um x 1.4um	1.4um x 1.4um
Active Array Format		1632H x 1238V	1920H x 1080V	2048H x 1536V	2048H x 1536V	2592H x 1944V	2592H x 1944V
Frame Rate		30-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution	15-fps @full resolution
Type		RAW	RAW	SOC	SOC	SOC	RAW
Output Format		Bayer 10-bit	Bayer 10-bit	YUV4:2:2,RGB5:6:5 ITU656-like, Bayer 10bit,	YUV4:2:2,RGB5:6:5 ITU656-like, Bayer 10bit,	YUV4:2:2 RGB5:6:5	Bayer 10bit
Supply Voltage	Digital I/O	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V
	Digital Core	1.8V	1.2V / 1.8V	1.2V	1.2V	1.2V / 1.8V	1.2V / 1.5V / 1.8V
	Analog & Pixel	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Operating Temp.		-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Status		Sampling	Mass Production	Mass Production	Mass Production	Mass Production	Mass Production
Packaging		Bare die (COB)	Bare die (COB) Neopac CSP (TSV CSP)	Bare die (COB) Recon. Wafer	Bare die (COB) Recon. Wafer	Recon. Wafer	Recon. Wafer
Interface		MIPI	Parallel / MIPI	Parallel / MIPI	Parallel / MIPI	Parallel / MIPI	Parallel / MIPI



		5M				8M	13M
Part Number		YACF4C1C	YACF4E1C	YACF4F1C	YACF5A1C	YACG4A1C	YACJ3A0C
		Hi-543	Hi-544	Hi-545	Hi-551	Hi-841	Hi-1331
Optical Format		1/4-inch	1/4-inch	1/4-inch	1/5-inch	1/4-inch	1/3-inch
Pixel Size		1.4um x 1.4um	1.4um x 1.4um	1.4um x 1.4um BSI	1.12um x 1.12um BSI	1.12um x 1.12um BSI	1.12um x 1.12um BSI-2
Active Array Format		2592H x 1944V	2592H x 1944V	2592H x 1944V	2592H x 1944V	3264H x 2448V	4208H x 3120V
Frame Rate		30-fps @full resolution	30-fps @full resolution	30-fps @full resolution	30-fps @full resolution	30-fps @full resolution	30-fps @full resolution
Type		RAW	RAW	RAW	RAW	RAW	RAW
Output Format		Bayer 10bit	Bayer 10bit	Bayer 10bit	Bayer 10bit	Bayer 10bit	Bayer 10bit
Supply Voltage	Digital I/O	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V	1.8V / 2.8V
	Digital Core	1.8V	1.2V / 1.8V	1.2V / 1.8V	1.2V / 1.8V	1.2V / 1.8V	1.2V
	Analog & Pixel	2.8V	2.8V	2.8V	2.8V	2.8V	2.8V
Operating Temp.		-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C
Status		Mass Production	Mass Production	Mass Production	Mass Production	Mass Production	Sampling
Packaging		Recon. Wafer	Recon. Wafer (TSV CSP)	Recon. Wafer (TSV CSP)	Recon. Wafer (TSV CSP)	Recon. Wafer	Recon. Wafer
Interface		Parallel / MIPI	MIPI	MIPI	MIPI	Parallel / MIPI	MIPI



Becoming the World's Best

With the industry's leading process technology and innovate design skills, SK hynix continuously introduces groundbreaking products that are high in performance and low in energy consumption giving its significant advantages over competition and securing global market leadership.