

Memory Brochure 2025

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GSI's Vanguard Rad-Hard SRAMs

GSI Technology's inaugural projects in the Aerospace and Defense industry are groups of Radiation-Hardened and Radiation-Tolerant synchronous SRAMs:

- **A family of SigmaQuad-II+ products:** available in 288Mb, 144Mb, and 72Mb densities, x18 and x36 configurations, On-Die Termination (ODT), and up to 350 MHz performance
- **A family of SyncBurst & NBT products:** available in 144Mb, 72Mb, and 36Mb densities, x18 and x36 configurations, and up to 333 MHz performance

These Rad-Hard SRAMs are expected to serve as a critical element for advanced systems that leverage leading-edge FPGAs, ADCs, and DACs; but until now lacked the high density, high performance, and power efficiency that our outstanding memory products bring. These devices are qualified to Class-Q and Class-V levels to meet the rigorous requirements of aerospace and defense customers.

For our satellite and defense customers that have been anxiously awaiting an alternative to current Rad-Hard memory solutions, our Rad-Hard SRAMs leverage our proven commercial technology and architecture with radiation-hardening, creating an efficient, high performance, leading-edge memory at the 40nm technology node.

For less robust applications, GSI offers Radiation-Tolerant SRAMs, as well.

For more information, contact us at aerospace@gsitechnology.com.

Note:
GE and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for E or D package (leaded version) availability.

Radiation-Hardened SRAM Offerings

TID = 200 krad(Si), SEL Immunity = 77 MeV-cm²/mg

Rad-Hard SigmaQuad-II+™ (In Production)

GSI P/N	Density	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	165 BGA	
								CCGA (CE)	LGA (LE)
GS82612QT37yy-####a GS82612QT19yy-####a	288Mb	8M x 36 16M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	●	●
GS81332QT37yy-####a GS81332QT19yy-####a	144Mb	4M x 36 8M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	●	●
GS8692QT37yy-####a GS8692QT19yy-####a	72Mb	2M x 36 4M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	●	●
GS82612DT37yy-####a GS82612DT19yy-####a	288Mb	8M x 36 16M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	●	●
GS81332DT37yy-####a GS81332DT19yy-####a	144Mb	4M x 36 8M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	●	●
GS8692DT37yy-####a GS8692DT19yy-####a	72Mb	2M x 36 4M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ} V	●	●

* yy = Package Designator; ### = Speed Bin Designator. Alpha character at the end of the PN denotes qualification nomenclature (S = Eng Sample; V = Class-V; Q = Class-Q.)

Rad-Hard No Bus Turnaround (Built Upon Request)

GSI P/N	Density	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage	100 QFP
						QFP (CQ)
GS81320Z36yy-####a GS81320Z18yy-####a	144Mb	4M x 36 8M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS8680Z36yy-####a GS8680Z18yy-####a	72Mb	2M x 36 4M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS8360Z36yy-####a GS8360Z18yy-####a	36Mb	1M x 36 2M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●

* yy = Package Designator; ### = Speed Bin Designator. Alpha character at the end of the PN denotes qualification nomenclature (S = Eng Sample; V = Class-V; Q = Class-Q.)

Rad-Hard Synchronous Burst (Built Upon Request)

GSI P/N	Density	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage	100 QFP
						QFP (CQ)
GS8132036yy-###a GS8132018yy-###a	144Mb	4M x 36 8M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	
GS868036yy-###a GS868018yy-###a	72Mb	2M x 36 4M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	
GS836036yy-###a GS836018yy-###a	36Mb	1M x 36 2M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	

* yy = Package Designator; ### = Speed Bin Designator. Alpha character at the end of the PN denotes qualification nomenclature (S = Eng Sample; V = Class-V; Q = Class-Q.)

Radiation-Tolerant SRAM Offerings

TID = 50 krad (Si), SEL Immunity = 42 MeV-cm²/mg

Rad-Tolerant SigmaQuad-II+™ (In Production)

GSI P/N	Density	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	165 BGA
								LBGA (RE)
GS82582QT37yy-### GS82582QT19yy-###	288Mb	8M x 36 16M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	
GS81302QT37yy-### GS81302QT19yy-###	144Mb	4M x 36 8M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	
GS8662QT37yy-### GS8662QT19yy-###	72Mb	2M x 36 4M x 18	2	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	
GS82582DT37yy-### GS82582DT19yy-###	288Mb	8M x 36 16M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	
GS81302DT37yy-### GS81302DT19yy-###	144Mb	4M x 36 8M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	
GS8662DT37yy-### GS8662DT19yy-###	72Mb	2M x 36 4M x 18	4	2.0	Weak/Strong	350/250 (Military Temp)	1.8 V V _{DD} 1.5 V/1.8 V V _{DDQ}	

* yy = Package Designator; ### = Speed Bin Designator.

Rad-Tolerant No Bus Turnaround (Built Upon Request)

GSI P/N	Density	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage	100 TQFP
						TQFP (RT)
GS81280Z36yy-####a GS81280Z18yy-####a	144Mb	4M x 36 8M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS8640Z36yy-####a GS8640Z18yy-####a	72Mb	2M x 36 4M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS8320Z36yy-####a GS8320Z18yy-####a	36Mb	1M x 36 2M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●

* yy = Package Designator; ### = Speed Bin Designator.

Rad-Tolerant Synchronous Burst (Built Upon Request)

GSI P/N	Density	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage	100 TQFP
						TQFP (RT)
GS8128036yy-####a GS8128018yy-####a	144Mb	4M x 36 8M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS864036yy-####a GS864018yy-####a	72Mb	2M x 36 4M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●
GS832036yy-####a GS832018yy-####a	36Mb	1M x 36 2M x 18	333/250 (Military Temp)	2.5	2.5 V/3.3 V V _{DD} 2.5 V/3.3 V V _{DDQ}	●

* yy = Package Designator; ### = Speed Bin Designator.

Standard Military Temperature SRAMs

SigmaQuad™ SRAMs

144Mb SigmaQuad-IVe					
GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS81314LD36GK-120M GS81314LD18GK-120M	4M x 36 8M x 18	1200	1.25 ~ 1.3 V V _{DD} 1.2 ~ 1.3 V V _{DDQ} HSTL I/O	260 BGA	SigmaQuad-IVe Burst of 4 Read Latency = 6 On-Die Termination Option Multi-Bank, ECCRAM™
GS81314LQ36GK-120M GS81314LQ18GK-120M	4M x 36 8M x 18	1200	1.25 ~ 1.3 V V _{DD} 1.2 ~ 1.3 V V _{DDQ} HSTL I/O	260 BGA	SigmaQuad-IVe Burst of 2 Read Latency = 6 On-Die Termination Option Multi-Bank, ECCRAM™
GS81314LD37GK-800M GS81314LD19GK-800M	4M x 36 8M x 18	800	1.25 ~ 1.3 V V _{DD} 1.2 ~ 1.3 V V _{DDQ} HSTL I/O	260 BGA	SigmaQuad-IVe Burst of 4 Read Latency = 5 On-Die Termination Option Single-Bank, ECCRAM™
GS81314LQ37GK-800M GS81314LQ19GK-800M	4M x 36 8M x 18	800	1.25 ~ 1.3 V V _{DD} 1.2 ~ 1.3 V V _{DDQ} HSTL I/O	260 BGA	SigmaQuad-IVe Burst of 2 Read Latency = 5 On-Die Termination Option Single-Bank, ECCRAM™

Note:
GK package is 6/6 RoHS-compliant. Contact your local sales representative for K package (leadless version) availability.

288Mb SigmaQuad-IIIe

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS82583ED36GK-625M GS82583ED18GK-625M	8M x 36 16M x 18	625	1.3 V V_{DD} 1.2V/1.3 V/1.5 V V_{DDQ}	260 BGA	SigmaQuad-IIIe Burst of 4 Read Latency = 3 On-Die Termination Option
GS82583EQ36GK-450M GS82583EQ18GK-450M	8M x 36 16M x 18	450	1.3 V V_{DD} 1.2V/1.3 V/1.5 V V_{DDQ}	260 BGA	SigmaQuad-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option

144Mb SigmaQuad-IIIe

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS81313LD36GK-714M GS81313LD18GK-714M	4M x 36 8M x 18	714	1.25 ~ 1.3 V V_{DD} 1.2 ~ 1.3 V V_{DDQ} HSTL I/O	260 BGA	SigmaQuad-IIIe Burst of 4 Read Latency = 3 On-Die Termination Option ECCRAM™
GS81313LQ36GK-714M GS81313LQ18GK-714M	4M x 36 8M x 18	714	1.25 ~ 1.3 V V_{DD} 1.2 ~ 1.3 V V_{DDQ} HSTL I/O	260 BGA	SigmaQuad-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option ECCRAM™

72Mb SigmaQuad-IIIe

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS8673ED36BGK-625M GS8673ED18BGK-625M	2M x 36 4M x 18	625	1.35 V V_{DD} 1.2 V/1.5 V V_{DDQ}	260 BGA	SigmaQuad-IIIe Burst of 4 Read Latency = 3 On-Die Termination Option ECCRAM™
GS8673EQ36BGK-625M GS8673EQ18BGK-625M	2M x 36 4M x 18	625	1.35 V V_{DD} 1.2 V/1.5 V V_{DDQ}	260 BGA	SigmaQuad-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option ECCRAM™

Note:
GK package is 6/6 RoHS-compliant. Contact your local sales representative for K package (leaded version) availability.

288Mb SigmaQuad-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS82582D38GE-500M GS82582D20GE-500M	8M x 36 16M x 18	500	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (15 x 17 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.5 On-Die Termination Option
GS82582Q37GE-375M GS82582Q19GE-375M	4M x 36 8M x 18	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (15 x 17 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.0 On-Die Termination Option

288Mb SigmaQuad-II

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS82582D36GE-375M GS82582D18GE-375M	8M x 36 16M x 18	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ} V	165 BGA (15 x 17 mm)	SigmaQuad-II+ Burst of 4
GS82582Q36GE-333M GS82582Q18GE-333M	4M x 36 8M x 18	333	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (15 x 17 mm)	SigmaQuad-II+ Burst of 2

144Mb SigmaQuad-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS81302D38AGD-550M GS81302D20AGD-550M	4M x 36 8M x 18	550	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.5 On-Die Termination Option
GS81302Q37AGD-400M GS81302Q19AGD-400M	4M x 36 8M x 18	400	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.0 On-Die Termination Option

144Mb SigmaQuad-II

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS81302D36AGD-375M GS81302D18AGD-375M	4M x 36 8M x 18	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 4
GS81302Q36AGD-375M GS81302Q18AGD-375M	4M x 36 8M x 18	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 2

72Mb SigmaQuad-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS8662D38CGD-550M GS8662D20CGD-550M	2M x 36 4M x 18	550	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.5 On-Die Termination Option
GS8662D38BD-450M GS8662D20BD-450M GS8662D11BD-450M GS8662D06BD-450M	2M x 36 4M x 18 8M x 9 8M x 8	450	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.5 On-Die Termination Option
GS8662Q37BD-333M GS8662Q19BD-333M GS8662Q10BD-333M GS8662Q07BD-333M	2M x 36 4M x 18 8M x 9 8M x 8	333	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.0 On-Die Termination Option

72Mb SigmaQuad-II

GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8662D36BD-350M GS8662D18BD-350M GS8662D09BD-350M GS8662D08BD-350M	2M x 36 4M x 18 8M x 9 8M x 8	350	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 4
GS8662Q36BD-333M GS8662Q18BD-333M GS8662Q09BD-333M GS8662Q08BD-333M	2M x 36 4M x 18 8M x 9 8M x 8	333	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 2

36Mb SigmaQuad-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8342D38BD-500M GS8342D20BD-500M GS8342D11BD-500M GS8342D06BD-500M	1M x 36 2M x 18 4M x 9 4M x 8	500	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.5 On-Die Termination Option
GS8342Q37BD-333M GS8342Q19BD-333M GS8342Q10BD-333M GS8342Q07BD-333M	1M x 36 2M x 18 4M x 9 4M x 8	333	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.0 On-Die Termination Option

36Mb SigmaQuad-II					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8342D36BD-350M GS8342D18BD-350M GS8342D09BD-350M GS8342D08BD-350M	1M x 36 2M x 18 4M x 9 4M x 8	350	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 4
GS8342Q36BD-333M GS8342Q18BD-333M GS8342Q09BD-333M GS8342Q08BD-333M	1M x 36 2M x 18 4M x 9 4M x 8	333	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 2
18Mb SigmaQuad-II+					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8182D37BD-400M GS8182D19BD-400M	512K x 36 1M x 18	400	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 4 Read Latency = 2.0
18Mb SigmaQuad-II					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8182D36BD-375M GS8182D18BD-375M GS8182D09BD-375M GS8182D08BD-375M	512K x 36 1M x 18 2M x 9 2M x 8	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 4
GS8182Q36BD-300M GS8182Q18BD-300M GS8182Q09BD-300M GS8182Q08BD-300M	512K x 36 1M x 18 2M x 9 2M x 8	300	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II Burst of 2

Note:
GE and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for E or D package (leaded version) availability.

SigmaDDR™ SRAMs

288Mb SigmaDDR-IIIe					
GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS82583ET36GK-625M GS82583ET18GK-625M	8M x 36 16M x 18	625	1.3 V V_{DD} 1.2 V/1.3 V/1.5 V V_{DDQ}	260 BGA	DDR-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option
144Mb SigmaDDR-IIIe					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS81313LT36GK-714M GS81313LT18GK-714M	4M x 36 8M x 18	714	1.25 ~ 1.3 V V_{DD} 1.2 ~ 1.3 V V_{DDQ} HSTL I/O	260 BGA	DDR-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option ECCRAM™
72Mb SigmaDDR-IIIe					
GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS8673ET36BHK-550M GS8673ET18BHK-550M	2M x 36 4M x 18	550	1.35 V V_{DD} 1.2 V/1.5 V V_{DDQ}	260 BGA	DDR-IIIe Burst of 2 Read Latency = 3 On-Die Termination Option ECCRAM™

Note:

GK package is 6/6 RoHS-compliant. Contact your local sales representative for K package (leaded version) availability. HK package is 5/6 RoHS-compliant with leaded package balls and lead-free die bumps.

288Mb SigmaDDR-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS82582T38GE-500M GS82582T20GE-500M	8M x 36 16M x 18	500	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (15 x 17 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.0 On-Die Termination Option

144Mb SigmaDDR-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package*	Features
GS81302T38AGD-550M GS81302T20AGD-550M	4M x 36 8M x 18	550	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II+ Burst of 2 Read Latency = 2.5 On-Die Termination Option

144Mb SigmaDDR-II

GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS81302T36E-350M GS81302T18E-350M GS81302T09E-350M GS81302T08E-350M	4M x 36 8M x 18 16M x 9 16M x 8	350	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (15 x 17 mm)	DDR-II Burst of 2

72Mb SigmaDDR-II+

GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8662T38CGD-550M GS8662T20CGD-550M	2M x 36 4M x 18	550	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	SigmaQuad-II+ Burst of 2 Read Latency = 2.5 On-Die Termination Option
GS8662T38BD-450M GS8662T20BD-450M GS8662T11BD-450M GS8662T06BD-450M	2M x 36 4M x 18 8M x 9 8M x 8	450	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II+ Burst of 2 Read Latency = 2.5

72Mb SigmaDDR-II

GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8662T36BD-350M GS8662T18BD-350M GS8662T09BD-350M GS8662T08BD-350M	2M x 36 4M x 18 8M x 9 8M x 8	350	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II Burst of 2

36Mb SigmaDDR-II+					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8342T38BD-500M GS8342T20BD-500M GS8342T11BD-500M GS8342T06BD-500M	1M x 36 2M x 18 4M x 9 4M x 8	500	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II+ Burst of 2 Read Latency = 2.5 On-Die Termination Option
36Mb SigmaDDR-II					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8342T36BD-350M GS8342T18BD-350M GS8342T09BD-350M GS8342T08BD-350M	1M x 36 2M x 18 4M x 9 4M x 8	350	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II Burst of 2
18Mb SigmaDDR-II+					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8182T37BD-400M GS8182T19BD-400M	512K x 36 1M x 18	400	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II+ Burst of 2 Read Latency = 2.0
18Mb SigmaDDR-II					
GSI P/N	Config	Speed (MHz)	Voltage	Package	Features
GS8182T36BD-375M GS8182T18BD-375M GS8182T09BD-375M GS8182T08BD-375M	512K x 36 1M x 18 2M x 9 2M x 8	375	1.8 V V_{DD} 1.5 V/1.8 V V_{DDQ}	165 BGA (13 x 15 mm)	DDR-II Burst of 2

Note:
GE and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for E and D package (leaded version) availability.

No Bus Turnaround (NBT™) SRAMs

288Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS82564Z36GB-333M GS82564Z18GB-333M	8M x 36 16M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS82564Z36GD-333M GS82564Z18GD-333M	8M x 36 16M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
144Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS81282Z36GB-333M GS81282Z18GB-333M	4M x 36 8M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS81282Z36GD-333M GS81282Z18GD-333M	4M x 36 8M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
72Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package	Features
				V _{DD}	V _{DDQ}		
GS8642Z36B-250M GS8642Z18B-250M	2M x 36 4M x 18	250	2.3–3.5	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8642Z72C-250M	1M x 72	250	2.3–3.5	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes

Note:
1. GB and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for B and D package (leaded version) availability.

No Bus Turnaround (NBT™) SRAMs

36Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS8322Z36AB-375M GS8322Z18AB-375M	1M x 36 2M x 18	375	2.5–4.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8322Z36AD-375M GS8322Z18AD-375M	1M x 36 2M x 18	375	2.5–4.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8322Z72C-225M	512K x 72	225	2.5–4.0	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
18Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS8162Z36DB-375M GS8162Z18DB-375M	512K x 36 1M x 18	375	2.5–3.8	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8162Z36DD-375M GS8162Z18DD-375M	512K x 36 1M x 18	375	2.5–3.8	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8162Z72CC-300M	256K x 72	300	2.8–3.8	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
9Mb NBT							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package	Features
				V _{DD}	V _{DDQ}		
GS882Z36CB-300M GS882Z18CB-300M	256K x 36 512K x 18	300	2.3–3.8	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS882Z36CD-300M GS882Z18CD-300M	256K x 36 512K x 18	300	2.3–3.8	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes

Note:

1. GB and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for B and D package (leaded version) availability.

Synchronous Burst SRAMs

288Mb SyncBurst							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS8256436GB-333M GS8256418GB-333M	8M x 36 16M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8256436GD-333M GS8256418GD-333M	8M x 36 16M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
144Mb SyncBurst							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package*	Features
				V _{DD}	V _{DDQ}		
GS8128236GB-333M GS8128218GB-333M	4M x 36 8M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8128236GD-333M GS8128218GD-333M	4M x 36 8M x 18	333	2.5–3.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
72Mb SyncBurst							
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Package	Features
				V _{DD}	V _{DDQ}		
GS864236B-250M GS864218B-250M	2M x 36 4M x 18	250	2.3–3.5	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS864272C-250M	1M x 72	250	2.3–3.5	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes

Note:
1. GB and GD packages are 6/6 RoHS-compliant. Contact your local sales representative for B and D package (leaded version) availability.

36Mb SyncBurst

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Packages	Features
				V _{DD}	V _{DDQ}		
GS832236AB-375M GS832218AB-375M	1M x 36 2M x 18	375	2.5–4.0	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS832236AD-375M GS832218AD-375M	1M x 36 2M x 18	375	2.5–4.0	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS832272C-225M	512K x 72	225	2.5–4.0	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes

18Mb SyncBurst

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Packages	Features
				V _{DD}	V _{DDQ}		
GS816272CC-200M	256K x 72	200	2.8–3.8	2.5/3.3 V	2.5/3.3 V	209 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS816236DB-375M GS816218DB-375M	512K x 36 1M x 18	375	2.5–3.8	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS816236DD-375M GS816218DD-375M	512K x 36 1M x 18	375	2.5–3.8	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes

9Mb SyncBurst

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Packages	Features
				V _{DD}	V _{DDQ}		
GS88236CB-300M GS88218CB-300M	256K x 36 512K x 18	300	2.5–3.8	2.5/3.3 V	2.5/3.3 V	119 BGA	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS88236CD-300M GS88218CD-300M	256K x 36 512K x 18	300	2.5–3.8	2.5/3.3 V	2.5/3.3 V	165 BGA (13 x 15 mm)	JTAG; FLXDrive™; Pipeline and Flow Through modes

GSI's Legacy SRAM Offerings

Since 1995, GSI Technology has been designing, developing, and marketing a broad range of high performance memory products for networking, military, medical, automotive and other applications. We specialize in memory products featuring very high transaction rates, high density, low latency, high bandwidth, fast clock access times, and low power consumption. We offer unusually long product support life cycles, short lead times, the largest high performance memory product portfolio in the market and complete pre and post-sale support.

GSI Technology offers both Static Random Access Memory products (SRAMs) and Low Latency DRAM products (LLDRAM). GSI's SRAMs utilize world-class, low power CMOS process technologies down to 40 nanometer. Our Low Latency DRAM product line is fabricated using a 72nm DRAM process technology. Most GSI products are specifically recommended for use with a variety of host devices, such as NPUs and FPGAs.

SigmaQuad-IVe™ SRAMs

GSI's 4th Generation SigmaQuad™ SRAMs are our highest performance synchronous memories. They come in a 144Mb density with up to a 1333 MHz operating frequency, and are suitable for a variety of applications, including packet processing and image processing.

SigmaQuad SRAMs are synchronous memories with separate read and write data buses. “Quad” refers to their ability to transfer 4 beats of data (2 beats per data bus) in a single clock cycle.

GSI Technology IVe customers have access to a free SRAM Controller IP for Xilinx FPGAs.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Leaded (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

144Mb SigmaQuad-IVe™ ECCRAM™ Multi-Bank							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS81314LQ36yy-### GS81314LQ18yy-###	4M x 36 8M x 18	2	6	•	1333/1200/1066	V _{DD} —1.3 V V _{DDQ} —1.2 V	•
GS81314LD36yy-### GS81314LD18yy-###	4M x 36 8M x 18	4	6	•	1333/1200/1066	V _{DD} —1.3 V V _{DDQ} —1.2 V	•
144Mb SigmaQuad-IVe™ ECCRAM™ Single-Bank							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS81314LQ37yy-### GS81314LQ19yy-###	4M x 36 8M x 18	2	5	•	933/800	V _{DD} —1.3 V V _{DDQ} —1.2 V	•
GS81314LD37yy-### GS81314LD19yy-###	4M x 36 8M x 18	4	5	•	933/800	V _{DD} —1.3 V V _{DDQ} —1.2 V	•

SigmaQuad-IVe and ECCRAMs are trademarks of GSI Technology.

SigmaQuad-IIIe™ SRAMs

GSI's 3rd Generation SigmaQuad™ SRAMs are high performance memories with a powerful combination of capacity and transaction rate capability.

SigmaQuad SRAMs are synchronous memories with separate read and write data buses. “Quad” refers to their ability to transfer 4 beats of data (2 beats per data bus) in a single clock cycle.

GSI Technology IIIe customers have access to a free SRAM Controller IP for Xilinx FPGAs.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Leaded (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

288Mb SigmaQuad-IIIe™							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS82583EQ36yy-### GS82583EQ18yy-###	8M x 36 16M x 18	2	3	•	500/450/400	V _{DD} —1.3 V V _{DDQ} —1.2 V/1.5 V	•
GS82583ED36yy-### GS82583ED18yy-###	8M x 36 16M x 18	4	3	•	675/625/550/500	V _{DD} —1.3 V V _{DDQ} —1.2 V/1.5 V	•
144Mb SigmaQuad-IIIe™ ECCRAMs™							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS81313LQ36yy-### GS81313LQ18yy-###	4M x 36 8M x 18	2	3	•	800/714/600	V _{DD} —1.3 V V _{DDQ} —1.2 V	•
GS81313LD36yy-### GS81313LD18yy-###	4M x 36 8M x 18	4	3	•	833/714/625	V _{DD} —1.3 V V _{DDQ} —1.2 V	•

SigmaQuad-IIIe and ECCRAMs are trademarks of GSI Technology.

72Mb SigmaQuad-IIIe™ ECCRAMs™ (Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS8673EQ36Byy-### GS8673EQ18Byy-###	2M x 36 4M x 18	2	3	•	675/625/550/500	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	•
GS8673ED36Byy-### GS8673ED18Byy-###	2M x 36 4M x 18	4	3	•	675/625/550/500	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	•

72Mb SigmaQuad-IIIe™ ECCRAMs™—For Use with the GSI Memory Controller IP (Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS8673EQ36Byy-###S GS8673EQ18Byy-###S	2M x 36 4M x 18	2	3	•	725/625/550	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	•
GS8673ED36Byy-###S GS8673ED18Byy-###S	2M x 36 4M x 18	4	3	•	725/625/550	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	•

SigmaQuad-IIIe and ECCRAMs are trademarks of GSI Technology.

SigmaQuad-II+™ and SigmaQuad-II™ SRAMs

GSI SigmaQuad™ SRAMs are the preferred choice in leading edge applications from data packet statistics to radar signature processing.

SigmaQuad SRAMs are synchronous memories with separate read and write data buses. “Quad” refers to their ability to transfer 4 beats of data (2 beats per data bus) in a single clock cycle.

GSI’s SigmaQuad devices are compatible with all competitor Quad Data Rate SRAMs.

GSI Technology II+ customers have access to a free SRAM Controller IP for Xilinx FPGAs.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Lead-free (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

288Mb SigmaQuad-II+™ and SigmaQuad-II™									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS82582QT38yy-### GS82582QT20yy-###	8M x 36 16M x 18	2	2.5	•		500/450/400/375	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582Q38yy-### GS82582Q20yy-###	8M x 36 16M x 18	2	2.5		•	500/450/400/375	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582DT38yy-### GS82582DT20yy-###	8M x 36 16M x 18	4	2.5	•		550/500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582D38yy-### GS82582D20yy-###	8M x 36 16M x 18	4	2.5		•	550/500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582QT37yy-### GS82582QT19yy-###	8M x 36 16M x 18	2	2.0	•		400/375/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582Q37yy-### GS82582Q19yy-###	8M x 36 16M x 18	2	2.0		•	400/375/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582DT37yy-### GS82582DT19yy-###	8M x 36 16M x 18	4	2.0	•		450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582D37yy-### GS82582D19yy-###	8M x 36 16M x 18	4	2.0		•	450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

288Mb SigmaQuad-II+™ and SigmaQuad-II™ (Continued)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS82582Q36yy-### GS82582Q18yy-###	8M x 36 16M x 18	2	1.5	n/a	n/a	357/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582D36yy-### GS82582D18yy-###	8M x 36 16M x 18	4	1.5	n/a	n/a	400/375/333/ 300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

144Mb SigmaQuad-II+™ and SigmaQuad-II™
(Rev. A)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302QT38Ayy-### GS81302QT20Ayy-###	4M x 36 8M x 18	2	2.5	•		500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302Q38Ayy-### GS81302Q20Ayy-###	4M x 36 8M x 18	2	2.5		•	500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302DT38Ayy-### GS81302DT20Ayy-###	4M x 36 8M x 18	4	2.5	•		633/550/500/450	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302D38Ayy-### GS81302D20Ayy-###	4M x 36 8M x 18	4	2.5		•	633/550/500/450	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302QT37Ayy-### GS81302QT19Ayy-###	4M x 36 8M x 18	2	2.0	•		450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302Q37Ayy-### GS81302Q19Ayy-###	4M x 36 8M x 18	2	2.0		•	450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302DT37Ayy-### GS81302DT19Ayy-###	4M x 36 8M x 18	4	2.0	•		450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302D37Ayy-### GS81302D19Ayy-###	4M x 36 8M x 18	4	2.0		•	450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

144Mb SigmaQuad-II+™ and SigmaQuad-II™ (Rev. A) (Continued)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302Q36Ayy-### GS81302Q18Ayy-###	4M x 36 8M x 18	2	1.5	n/a	n/a	400/375/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302D36Ayy-### GS81302D18Ayy-###	4M x 36 8M x 18	4	1.5	n/a	n/a	400/375/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

144Mb SigmaQuad-II+™ and SigmaQuad-II™

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302Q10yy-### GS81302Q07yy-###	16M x 9 16M x 8	2	2.0		•	318/300/250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302D11yy-### GS81302D06yy-###	16M x 9 16M x 8	4	2.5		•	500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302D10yy-### GS81302D07yy-###	16M x 9 16M x 8	4	2.0		•	450/400/375/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302Q09yy-### GS81302Q08yy-###	16M x 9 16M x 8	2	1.5	n/a	n/a	300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302D09yy-### GS81302D08yy-###	16M x 9 16M x 8	4	1.5	n/a	n/a	375/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

72Mb SigmaQuad-II+™ and SigmaQuad-II™ (Rev. C)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662DT38Cyy-### GS8662DT20Cyy-###	2M x 36 4M x 18	4	2.5	•		633/550/500	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662D38Cyy-### GS8662D20Cyy-###	2M x 36 4M x 18	4	2.5		•	633/550/500	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662QT38Cyy-### GS8662QT20Cyy-###	2M x 36 4M x 18	2	2.5	•		500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662Q38Cyy-### GS8662Q20Cyy-###	2M x 36 4M x 18	2	2.5		•	500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaQuad-II and SigmaQuad-II+ products are pin and function compatible with QDR-II™ and QDR-II+™ products, respectively.
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72Mb SigmaQuad-II+™ and SigmaQuad-II™ (Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662DT38Byy-### GS8662DT20Byy-### GS8662DT11Byy-### GS8662DT06Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	2.5	•		550/500/450/400/350 (x18/x36) 500/450/400/350 (x8/x9)	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662D38Byy-### GS8662D20Byy-### GS8662D11Byy-### GS8662D06Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	2.5		•	550/500/450/400/350 (x18/x36) 500/450/400/350 (x8/x9)	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

72Mb SigmaQuad-II+™ and SigmaQuad-II™ (Rev. B) (Continued)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662QT37Byy-### GS8662QT19Byy-### GS8662QT10Byy-### GS8662QT07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.0	•		357/333/300/ 250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662Q37Byy-### GS8662Q19Byy-### GS8662Q10Byy-### GS8662Q07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.0		•	357/333/300/ 250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662DT37Byy-### GS8662DT19Byy-### GS8662DT10Byy-### GS8662DT07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	2.0	•		450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662D37Byy-### GS8662D19Byy-### GS8662D10Byy-### GS8662D07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662Q36Byy-### GS8662Q18Byy-### GS8662Q09Byy-### GS8662Q08Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	1.5	n/a	n/a	357/333/300/250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662D36Byy-### GS8662D18Byy-### GS8662D09Byy-### GS8662D08Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	1.5	n/a	n/a	400/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaQuad-II and SigmaQuad-II+ products are pin and function compatible with QDR-II™ and QDR-II+™ products, respectively.
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36Mb SigmaQuad-II+™ and SigmaQuad-II™ (Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8342DT38Byy-### GS8342DT20Byy-### GS8342DT11Byy-### GS8342DT06Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	2.5	•		550/500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342D38Byy-### GS8342D20Byy-### GS8342D11Byy-### GS8342D06Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	2.5		•	550/500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342QT37Byy-### GS8342QT19Byy-### GS8342QT10Byy-### GS8342QT07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.0	•		357/333/300/250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342Q37Byy-### GS8342Q19Byy-### GS8342Q10Byy-### GS8342Q07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.0		•	357/333/300/250/200	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342DT37Byy-### GS8342DT19Byy-### GS8342DT10Byy-### GS8342DT07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342D37Byy-### GS8342D19Byy-### GS8342D10Byy-### GS8342D07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342Q36Byy-### GS8342Q18Byy-### GS8342Q09Byy-### GS8342Q08Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	1.5	n/a	• n/a	357/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342D36Byy-### GS8342D18Byy-### GS8342D09Byy-### GS8342D08Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	1.5	n/a	• n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaQuad-II and SigmaQuad-II+ products are pin and function compatible with QDR-II™ and QDR-II+™ products, respectively.
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SigmaDDR-IIIe™ SRAMs

GSI's 3rd Generation SigmaDDR SRAMs are high performance memories with a powerful combination of capacity and transaction rate capability.

SigmaDDR SRAMs are synchronous memories with a common read and write data bus. "DDR" refers to their ability to transfer 2 beats of data on the data bus in a single clock cycle.

GSI Technology IIIe customers have access to a free SRAM Controller IP for Xilinx FPGAs.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Leaded (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

288Mb SigmaDDR-IIIe™							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS82583ET36yy-### GS82583ET18yy-###	8M x 36 16M x 18	2	3	•	675/625/550/500	V _{DD} —1.3 V V _{DDQ} —1.2 V/1.5 V	•
144Mb SigmaDDR-IIIe™ ECCRAMs™							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS81313LT36yy-### GS81313LT18yy-###	4M x 36 8M x 18	2	3	•	833/714/625	V _{DD} —1.3 V V _{DDQ} —1.2 V	•
72Mb SigmaDDR-IIIe™ ECCRAMs™ (Rev. B)							
GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS8673ET36Byy-### GS8673ET18Byy-###	2M x 36 4M x 18	2	3	•	675/625/550/500	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	•

SigmaDDR-IIIe and ECCRAMs are trademarks of GSI Technology.

**72Mb SigmaDDR-IIIe™ ECCRAMs™—For Use with the GSI Memory Controller IP
(Rev. B)**

GSI P/N	Config	Burst Length	Read Latency	ODT	Speed (MHz)	Voltage	260 BGA (GK)
				Weak/Strong/None			
GS8673ET36Byy-###S GS8673ET18Byy-###S	2M x 36 4M x 18	2	3	●	725/625/550	V _{DD} —1.35 V V _{DDQ} —1.2 V/1.5 V	●

SigmaDDR-IIIe and ECCRAMs are trademarks of GSI Technology.

SigmaDDR-II+™ and SigmaDDR-II™ SRAMs

GSI SigmaDDR SRAMs are the preferred choice in leading edge applications from data packet statistics to radar signature processing.

SigmaDDR SRAMs are synchronous memories with a common read and write data bus. “DDR” refers to their ability to transfer 2 beats of data on the data bus in a single clock cycle.

GSI’s SigmaDDR devices are compatible with all competitor Double Data Rate SRAMs.

GSI Technology II+ customers have access to a free SRAM Controller IP for Xilinx FPGAs.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Leaded (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

SigmaDDR-II+ and SigmaDDR-II SRAMs

288Mb SigmaDDR-II+™									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS82582TT38yy-### GS82582TT20yy-###	8M x 36 16M x 18	2	2.5	•		550/500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582T38yy-### GS82582T20yy-###	8M x 36 16M x 18	2	2.5		•	550/500/450/400	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582TT37yy-### GS82582TT19yy-###	8M x 36 16M x 18	2	2.0	•		450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS82582T37yy-### GS82582T19yy-###	8M x 36 16M x 18	2	2.0		•	450/400/375/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

SigmaDDR-II and SigmaDDR-II+ products are pin and function compatible with DDR II CIO™ and DDR II+ CIO™ products, respectively.
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144Mb SigmaDDR-II+™ (Rev. A)									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302TT38Ayy-### GS81302TT20Ayy-###	4M x 36 8M x 18	2	2.5	•		633/550/500/450	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302T38Ayy-### GS81302T20Ayy-###	4M x 36 8M x 18	2	2.5		•	633/550/500/450	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302TT37Ayy-### GS81302TT19Ayy-###	4M x 36 8M x 18	2	2.0	•		450/400/350/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS81302T37Ayy-### GS81302T19Ayy-###	4M x 36 8M x 18	2	2.0		•	450/400/350/333	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaDDR-II and SigmaDDR-II+ products are pin and function compatible with DDR II CIO™ and DDR II+ CIO™ products, respectively.
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144Mb SigmaDDR-II+™ and SigmaDDR-II™									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302TT11yy-### GS81302TT06yy-###	16M x 9 16M x 8	2	2.5	•		500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302T11yy-### GS81302T06yy-###	16M x 9 16M x 8	2	2.5		•	500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302TT10yy-### GS81302TT07yy-###	16M x 9 16M x 8	2	2.0	•		450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302T10yy-### GS81302T07yy-###	16M x 9 16M x 8	2	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

144Mb SigmaDDR-II+™ and SigmaDDR-II™

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302T36yy-### GS81302T18yy-### GS81302T09yy-### GS81302T08yy-###	4M x 36 8M x 18 16M x 9 16M x 8	2	1.5	n/a	n/a	375/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
GS81302R36yy-### GS81302R18yy-### GS81302R09yy-### GS81302R08yy-###	4M x 36 8M x 18 16M x 9 16M x 8	4	1.5	n/a	n/a	375/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•

SigmaDDR-II and SigmaDDR-II+ products are pin and function compatible with DDR II CIO™ and DDR II+ CIO™ products, respectively.
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72Mb SigmaDDR-II+™ and SigmaDDR-II™
(Rev. C)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662TT38Cyy-### GS8662TT20Cyy-###	2M x 36 4M x 18	2	2.5	•		633/550/500	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662T38Cyy-### GS8662T20Cyy-###	2M x 36 4M x 18	2	2.5		•	633/550/500	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaDDR-II and SigmaDDR-II+ products are pin and function compatible with DDR II CIO™ and DDR II+ CIO™ products, respectively.
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72Mb SigmaDDR-II+™ and SigmaDDR-II™
(Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662TT38Byy-### GS8662TT20Byy-### GS8662TT11Byy-### GS8662TT06Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.5	•		550/500/450/400/350 (x18/x36) 500/450/400/350 (x8/x9)	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662T38Byy-### GS8662T20Byy-### GS8662T11Byy-### GS8662T06Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.5		•	550/500/450/400/350 (x18/x36) 500/450/400/350 (x8/x9)	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662TT37Byy-### GS8662TT19Byy-### GS8662TT10Byy-### GS8662TT07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.0	•		450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662T37Byy-### GS8662T19Byy-### GS8662T10Byy-### GS8662T07Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662T36Byy-### GS8662T18Byy-### GS8662T09Byy-### GS8662T08Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8662R36Byy-### GS8662R18Byy-### GS8662R09Byy-### GS8662R08Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	4	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

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36Mb SigmaDDR-II+™ and SigmaDDR-II™ (Rev. B)

GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/Strong	Weak/None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8342TT38Byy-### GS8342TT20Byy-### GS8342TT11Byy-### GS8342TT06Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.5	•		550/500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342T38Byy-### GS8342T20Byy-### GS8342T11Byy-### GS8342T06Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.5	•		550/500/450/400/350	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342TT37Byy-### GS8342TT19Byy-### GS8342TT10Byy-### GS8342TT07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.0	•		450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342T37Byy-### GS8342T19Byy-### GS8342T10Byy-### GS8342T07Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	2.0		•	450/400/350/333/300	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342T36Byy-### GS8342T18Byy-### GS8342T09Byy-### GS8342T08Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
GS8342R36Byy-### GS8342R18Byy-### GS8342R09Byy-### GS8342R08Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	4	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

SigmaDDR-II and SigmaDDR-II+ products are pin and function compatible with DDR II CIO™ and DDR II+ CIO™ products, respectively.

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SigmaSIO DDR-II SRAMs

288Mb SigmaSIO DDR-II™									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS82582S36yy-### GS82582S18yy-###	8M x 36 16M x 18	2	1.5	n/a	n/a	400/375/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
144Mb SigmaSIO DDR-II™ (Rev. A)									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302S36Ayy-### GS81302S18Ayy-###	4M x 36 8M x 18	2	1.5	n/a	n/a	400/375/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
144Mb SigmaSIO DDR-II™									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS81302S09yy-### GS81302S08yy-###	16M x 9 16M x 8	2	1.5	n/a	n/a	375/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V		•
72Mb SigmaSIO DDR-II™ (Rev. B)									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8662S36Byy-### GS8662S18Byy-### GS8662S09Byy-### GS8662S08Byy-###	2M x 36 4M x 18 8M x 9 8M x 8	2	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	
36Mb SigmaSIO DDR-II™ (Rev. B)									
GSI P/N	Config	Burst Length	Read Latency	ODT		Speed (MHz)	Voltage	165 BGA	
				Weak/ Strong	Weak/ None			13 x 15 mm (GD)	15 x 17 mm (GE)
GS8342S36Byy-### GS8342S18Byy-### GS8342S09Byy-### GS8342S08Byy-###	1M x 36 2M x 18 4M x 9 4M x 8	2	1.5	n/a	n/a	400/350/333/300/250	V _{DD} —1.8 V V _{DDQ} —1.5 V/1.8 V	•	

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No Bus Turnaround (NBT)TM SRAMs

GSI No Bus Turnaround (NBT)TM SRAMs have been the workhorses for midrange data acquisition designs for over 15 years and are available in a huge assortment of densities, packages, and design options. These SRAMs also come with the best long-term memory IC support plan in the business.

NBT SRAMs are synchronous, burst-capable memories with a simplified interface that is designed to use a data bus’s maximum bandwidth. NBT devices do not require “turnaround” cycles (idle clock cycles between a read and write operation).

NBT SRAMs are used in networking, industrial, automotive, and medical imaging applications where a mid-range performance point (typically a 333–166 MHz clock rate) is required.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Leaded (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

No Bus Turnaround (NBT)TM SRAMs

288Mb (2-Die Module)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS82564Z36yy-### GS82564Z18yy-###	8M x 36 16M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3	●	●				●	●	●
GS82564Z36yy-###V GS82564Z18yy-###V	8M x 36 16M x 18	333/ 250/200	2.5–3.0	1.8/2.5	●	●				●	●	●

144Mb												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS81282Z36yy-### GS81282Z18yy-###	4M x 36 8M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3	●	●				●	●	●
GS81280FZ36yy-### GS81280FZ18yy-###	4M x 36 8M x 18	6.5 (ns)	n/a	2.5/3.3					●	FT Only		
GS81280Z36yy-### GS81280Z32yy-### GS81280Z18yy-###	4M x 36 4M x 32 8M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3					●	●	●	
GS81282Z36yy-###V GS81282Z18yy-###V	4M x 36 8M x 18	333/ 250/200	2.5–3.0	1.8/2.5	●	●				●	●	●

144Mb (Continued)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS81280Z36yy-###V GS81280Z32yy-###V GS81280Z18yy-###V	4M x 36 4M x 32 8M x 18	333/ 250/200	2.5–3.0	2.5/3.3					•	•	•	
72Mb												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS8642Z72yy-### GS8642Z36yy-### GS8642Z18yy-###	1M x 72 2M x 36 4M x 18	300/250/200/167	2.3–3.5	2.5/3.3	•			•		•	•	•
GS8640FZ36yy-### GS8640FZ32yy-### GS8640FZ18yy-###	2M x 36 2M x 32 4M x 18	6.5 (ns)	n/a	2.5/3.3					•	FT Only		
GS8640Z36yy-### GS8640Z32yy-### GS8640Z18yy-###	2M x 36 2M x 32 4M x 18	300/250/200/167	2.3–3.5	2.5/3.3					•	•	•	
GS8642Z72yy-###V GS8642Z36yy-###V GS8642Z18yy-###V	1M x 72 2M x 36 4M x 18	250/200/167	3.0–3.5	1.8/2.5	•			•		•	•	•
GS864036yy-###V GS864032yy-###V GS864018yy-###V	2M x 36 2M x 32 4M x 18	250/200/167	3.0–3.5	1.8/2.5					•	•	•	
GS864436yy-###V GS864418yy-###V	2M x 36 4M x 18	250/225/200/ 166/150/133	2.5–4.0	1.8/2.5			•			•	•	•

36Mb (Rev. A)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS8322Z36Ayy-### GS8322Z18Ayy-###	1M x 36 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3	•	•				•	•	•
GS8321Z36Ayy-### GS8321Z32Ayy-### GS8321Z18Ayy-###	1M x 36 1M x 32 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•				•	•	
GS8320Z36Ayy-### GS8320Z18Ayy-###	1M x 36 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•		
GS8322Z36Ayy-###V GS8322Z18Ayy-###V	1M x 36 2M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5	•	•				•	•	•
GS8321Z36Ayy-###V GS8321Z32Ayy-###V GS8321Z18Ayy-###V	1M x 36 1M x 32 2M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5		•				•	•	
GS8320Z36Ayy-###V GS8320Z18Ayy-###V	1M x 36 2M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5					•	•		
36Mb (Original Rev.)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS8322Z72yy-###	512K x 72	250/225/200/166/ 150/133	3.0–4.0	2.5/3.3				•		•	•	•
GS8322Z72yy-###V	512K x 72	250/225/200/166/ 150/133	3.0–4.0	1.8/2.5				•		•	•	•

18Mb (Rev. D)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS8162Z36Dyy-### GS8162Z18Dyy-###	512K x 36 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3	•	•				•	•	•
GS8161Z36Dyy-### GS8161Z32Dyy-### GS8161Z18Dyy-###	512K x 36 512K x 32 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•			•	•	•	
GS8160Z36Dyy-### GS8160Z18Dyy-###	512K x 36 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•		
GS8162Z36Dyy-###V GS8162Z18Dyy-###V	512K x 36 1M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5	•	•				•	•	•
GS8161Z36Dyy-###V GS8161Z32Dyy-###V GS8161Z18Dyy-###V	512K x 36 512K x 32 1M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5		•			•	•		
GS8160Z36Dyy-###V GS8160Z18Dyy-###V	512K x 36 1M x 18	333/250/ 200/150	3.0–3.8	1.8/2.5					•	•		
18Mb (Rev. C)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS8162Z72Cyy-###	256K x 72	333/300/250/ 200/150	2.8–3.8	2.5/3.3				•		•	•	•
GS8162Z72Cyy-###V	256K x 72	250/200/150	3.0–3.8	1.8/2.5				•		•	•	•

9Mb (Rev. C)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS882Z36Cyy-### GS882Z18Cyy-###	256K x 36 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3	•	•				•	•	•
GS881Z36Cyy-### GS881Z32Cyy-### GS881Z18Cyy-###	256K x 36 256K x 32 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3		•			•	•	•	
GS880Z36Cyy-### GS880Z18Cyy-###	256K x 36 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3					•	•		
GS882Z36Cyy-###V GS882Z18Cyy-###V	256K x 36 512K x 18	250/200/150	3.0–3.8	1.8/2.5	•	•				•	•	•
GS881Z36Cyy-###V GS881Z32Cyy-###V GS881Z18Cyy-###V	256K x 36 256K x 32 512K x 18	250/200/150	3.0–3.8	1.8/2.5		•			•	•	•	
GS880Z36Cyy-###V GS880Z18Cyy-###V	256K x 36 512K x 18	250/200/150	3.0–3.8	1.8/2.5					•	•		
4Mb (Rev. C)												
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} & V _{DDQ}	Packages					Features		
					BGA				TQFP			
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	JTAG	FLXDrive™
GS842Z36Cyy-### GS842Z18Cyy-###	128K x 36 256K x 18	250/200/166/ 150/100	3.2–4.5	3.3 2.5/3.3	•					•	•	•
GS841Z36Cyy-### GS841Z18Cyy-###	128K x 36 256K x 18	250/200/166/ 150/100	3.2–4.5	3.3 2.5/3.3					•	•	•	
GS840Z36Cyy-### GS840Z18Cyy-###	128K x 36 256K x 18	250/200/166/ 150/100	3.2–4.5	3.3 2.5/3.3					•	•		

Synchronous Burst (SyncBurst™) SRAMs

GSI SyncBurst™ SRAMs have been the workhorses for midrange data acquisition designs for over 15 years and are available in a huge assortment of densities, packages and design options. These SRAMs also come with the best long-term memory IC support plan in the business. SyncBurst SRAMs provide a “burst” of 2 to 4 words in response to a single clock signal.

SyncBurst SRAMs are used in networking, industrial, automotive and medical imaging applications where a mid-range performance point (typically a 333–166 MHz clock rate) is required.

*GSI offers all products in lead-free (6/6 RoHS compliant) packages; therefore, only these products are listed. Lead-free (5/6 RoHS-compliant) packages are still available for our 65nm and 90nm product families. Please contact your local sales representative if you are interested in a 5/6 part.

Synchronous Burst (SyncBurst™) SRAMs

288Mb (2-Die Module)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS8256436yy-### GS8256418yy-###	8M x 36 16M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3	•	•				•		•	•	•
GS8256436yy-###V GS8256418yy-###V	8M x 36 16M x 18	333/ 250/200	2.5–3.0	1.8/2.5	•	•				•		•	•	•
144Mb														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS8128236yy-### GS8128218yy-###	4M x 36 8M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3	•	•				•	•	•	•	•
GS81280E36yy-### GS81280E32yy-### GS81280E18yy-###	4M x 36 4M x 32 8M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3					•	•		•		
GS81280F36yy-### GS81280F18yy-###	4M x 36 8M x 18	6.5 (ns)	n/a	2.5/3.3					•	FT Only				
GS8128036yy-### GS8128032yy-### GS8128018yy-###	4M x 36 4M x 32 8M x 18	400/333/ 250/200	2.5–3.0	2.5/3.3					•	•	•			
GS8128236yy-###V GS8128218yy-###V	4M x 36 8M x 18	333/ 250/200	2.5–3.0	1.8/2.5	•	•				•	•	•	•	•
GS81280E36yy-###V GS81280E32yy-###V GS81280E18yy-###V	4M x 36 4M x 32 8M x 18	333/ 250/200	2.5–3.0	2.5/3.3					•	•		•		

144Mb (Continued)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS8128036yy-###V GS8128032yy-###V GS8128018yy-###V	4M x 36 4M x 32 8M x 18	333/ 250/200	2.5–3.0	2.5/3.3					•	•	•			
72Mb														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS864272yy-### GS864236yy-### GS864218yy-###	1M x 72 2M x 36 4M x 18	300/250/200/167	2.3–3.5	2.5/3.3	•			•		•	•	•	•	•
GS8640E36yy-### GS8640E32yy-### GS8640E18yy-###	2M x 36 2M x 32 4M x 18	300/250/200/167	2.3–3.5	2.5/3.3					•	•		•		
GS8640F36yy-### GS8640F32yy-### GS8640F18yy-###	2M x 36 2M x 32 4M x 18	6.5 (ns)	n/a	2.5/3.3					•	FT Only				
GS864036yy-### GS864032yy-### GS864018yy-###	2M x 36 2M x 32 4M x 18	300/250/200/167	2.3–3.5	2.5/3.3					•	•	•			
GS864436yy-### GS864418yy-###	2M x 36 4M x 18	250/225/200/ 166/150/133	2.5–4.0	2.5/3.3			•			•	•	•	•	•
GS864272yy-###V GS864236yy-###V GS864218yy-###V	1M x 72 2M x 36 4M x 18	250/200/167	3.0–3.5	1.8/2.5	•			•		•	•	•	•	•
GS8640E36yy-###V GS8640E32yy-###V GS8640E18yy-###V	2M x 36 2M x 32 4M x 18	250/200/167	3.0–3.5	1.8/2.5					•	•		•		
GS864036yy-###V GS864032yy-###V GS864018yy-###V	2M x 36 2M x 32 4M x 18	250/200/167	3.0–3.5	1.8/2.5					•	•	•			
GS864436yy-###V GS864418yy-###V	2M x 36 4M x 18	250/225/200/ 166/150/133	2.5–4.0	1.8/2.5			•			•	•	•	•	•

36Mb (Rev. A)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS832236Ayy-### GS832218Ayy-###	1M x 36 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3	•	•				•	•	•	•	•
GS8321E36Ayy-### GS8321E32Ayy-### GS8321E18Ayy-###	1M x 36 1M x 32 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•				•		•	•	
GS832136Ayy-### GS832132Ayy-### GS832118Ayy-###	1M x 36 1M x 32 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•				•			•	
GS8320E36Ayy-### GS8320E32Ayy-### GS8320E18Ayy-###	1M x 36 1M x 32 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•		•		
GS8320F36Ayy-### GS8320F32Ayy-### GS8320F18Ayy-###	1M x 36 1M x 32 2M x 18	6.5 (ns)	n/a	2.5/3.3					•	FT Only				
GS832036Ayy-### GS832032Ayy-### GS832018Ayy-###	1M x 36 1M x 32 2M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•	•			
GS832236Ayy-###V GS832218Ayy-###V	1M x 36 2M x 18	333/250/200/150	3.0–3.8	1.8/2.5	•	•				•	•	•	•	•
GS8321E36Ayy-###V GS8321E32Ayy-###V GS8321E18Ayy-###V	1M x 36 1M x 32 2M x 18	333/250/200/150	3.0–3.8	1.8/2.5		•				•		•	•	
GS832136Ayy-###V GS832132Ayy-###V GS832118Ayy-###V	1M x 36 1M x 32 2M x 18	333/250/200/150	3.0–3.8	1.8/2.5		•				•			•	
GS8320E36Ayy-###V GS8320E32Ayy-###V GS8320E18Ayy-###V	1M x 36 1M x 32 2M x 18	333/250/200/150	3.0–3.8	1.8/2.5					•	•		•		
GS832036Ayy-###V GS832032Ayy-###V GS832018Ayy-###V	1M x 36 1M x 32 2M x 18	333/250/200/150	3.0–3.8	1.8/2.5					•	•	•			

36Mb (Original Rev.)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS832272yy-###	512K x 72	250/225/200/ 166/150/133	3.0–4.0	2.5/3.3				•		•	•	•	•	•
GS832272yy-###V	512K x 72	250/225/200/ 166/150/133	3.0–4.0	1.8/2.5				•		•	•	•	•	•
18Mb (Rev. D)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS816236Dyy-### GS816218Dyy-###	512K x 36 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3	•	•				•	•	•	•	•
GS8161E36Dyy-### GS8161E32Dyy-### GS8161E18Dyy-###	512K x 36 512K x 32 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•			•	•		•		
GS816136Dyy-### GS816132Dyy-### GS816118Dyy-###	512K x 36 512K x 32 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3		•			•	•		•		
GS8160E36Dyy-### GS8160E32Dyy-### GS8160E18Dyy-###	512K x 36 512K x 32 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•		•		
GS8160F36Dyy-### GS8160F32Dyy-### GS8160F18Dyy-###	512K x 36 512K x 32 1M x 18	6.5/7.5 (ns)	n/a	2.5/3.3					•	FT Only				
GS816036Dyy-### GS816032Dyy-### GS816018Dyy-###	512K x 36 512K x 32 1M x 18	400/375/333/ 250/200/150	2.5–3.8	2.5/3.3					•	•	•			
GS816236Dyy-###V GS816218Dyy-###V	512K x 36 1M x 18	333/250/200/150	3.0–3.8	1.8/2.5	•	•				•	•	•	•	•
GS8161E36Dyy-###V GS8161E32Dyy-###V GS8161E18Dyy-###V	512K x 36 512K x 32 1M x 18	333/250/200/150	3.0–3.8	1.8/2.5		•			•	•		•	•	
GS816136Dyy-###V GS816132Dyy-###V GS816118Dyy-###V	512K x 36 512K x 32 1M x 18	333/250/200/150	3.0–3.8	1.8/2.5		•			•	•			•	

18Mb (Rev. D) (Continued)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS8160E36Dyy-###V GS8160E32Dyy-###V GS8160E18Dyy-###V	512K x 36 512K x 32 1M x 18	333/250/200/150	3.0–3.8	1.8/2.5					•	•		•		
GS816036Dyy-###V GS816032Dyy-###V GS816018Dyy-###V	512K x 36 512K x 32 1M x 18	333/250/200/150	3.0–3.8	1.8/2.5					•	•	•			
18Mb (Rev. C)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS816272Cyy-###	256K x 72	333/300/250/ 200/150	2.8–3.8	2.5/3.3				•		•	•	•	•	•
GS816272Cyy-###V	256K x 72	250/200/150	3.0–3.8	1.8/2.5				•		•	•	•	•	•
GS816273Cyy-###	256K x 72	333/300/250/ 200/150	2.3–2.5	2.5/3.3				•		PL Only	•	•	•	•
GS816273Cyy-###V	256K x 72	250/200/150	2.5	1.8/2.5				•		PL Only	•	•	•	•
9Mb (Rev. C)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)					
GS88236Cyy-### GS88218Cyy-###	256K x 36 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3	•	•				•	•	•	•	•
GS881E36Cyy-### GS881E32Cyy-### GS881E18Cyy-###	256K x 36 256K x 32 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3		•			•	•		•		

9Mb (Rev. C) (Continued)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	SCD	DCD	JTAG	FLXDrive™
GS88136Cyy-### GS88132Cyy-### GS88118Cyy-###	256K x 36 256K x 32 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3		•			•	•			•	
GS880E36Cyy-### GS880E32Cyy-### GS880E18Cyy-###	256K x 36 256K x 32 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3					•	•		•		
GS880F36Cyy-### GS880F32Cyy-### GS880F18Cyy-###	256K x 36 256K x 32 512K x 18	4.5/5/5.5/ 6.5/7.5 (ns)	n/a	2.5/3.3					•	FT Only	•			
GS88036Cyy-### GS88032Cyy-### GS88018Cyy-###	256K x 36 256K x 32 512K x 18	333/300/250/ 200/150	2.5–3.8	2.5/3.3					•	•	•			
GS88237Cyy-###	256K x 36	333/300/250/200	2.0–2.7	2.5/3.3	•					PL Only	•	•	•	•
GS88037Cyy-###	256K x 36	333/300/250/200	2.0–2.7	2.5/3.3					•	PL Only	•			
GS88236Cyy-###V GS88218Cyy-###V	256K x 36 512K x 18	250/200/150	3.0–3.8	1.8/2.5	•	•				•	•	•	•	•
GS881E36Cyy-###V GS881E32Cyy-###V GS881E18Cyy-###V	256K x 36 256K x 32 512K x 18	250/200/150	3.0–3.8	1.8/2.5		•			•	•		•	•	
GS88136Cyy-###V GS88132Cyy-###V GS88118Cyy-###V	256K x 36 256K x 32 512K x 18	250/200/150	3.0–3.8	1.8/2.5		•			•	•			•	
GS880E36Cyy-###V GS880E32Cyy-###V GS880E18Cyy-###V	256K x 36 256K x 32 512K x 18	250/200/150	3.0–3.8	1.8/2.5					•	•		•		
GS880F36Cyy-###V GS880F32Cyy-###V GS880F18Cyy-###V	256K x 36 256K x 32 512K x 18	5.5/6.5/7.5 (ns)	n/a	1.8/2.5					•	FT Only	•			
GS88036Cyy-###V GS88032Cyy-###V GS88018Cyy-###V	256K x 36 256K x 32 512K x 18	250/200/150	3.0–3.8	1.8/2.5					•	•	•			
GS88237Cyy-###V	256K x 36	333/300/ 250/200	2.5	1.8/2.5	•					PL Only	•	•	•	•
GS88037Cyy-###V	256K x 36	333/300/ 250/200	2.5	1.8/2.5					•	PL Only	•			

4Mb (Rev. C)														
GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	V _{DD} V _{DDQ}	Packages					Features				
					BGA				TQFP					
					119 (GB)	165 (GD)	165 (GE)	209 (GC)	100 (GT)	FT/PL	SCD	DCD	JTAG	FLXDrive™
GS84036Cyy-### GS84032Cyy-### GS84018Cyy-###	128K x 36 128K x 32 256K x 18	250/200/166/150	2.5–3.8	3.3 2.5/3.3	●				●	●				

Low Latency DRAMs (LLDRAMs)

GSI's 2nd generation Low Latency DRAM (LLDRAM II) is an ideal solution for advanced data networking applications. It offers an eight-bank memory array architecture for high transaction rates, a simplified address interface, and double data rate transfers. The result is a device that can maintain near-100% bus utilization for many networking tasks.

GSI's LLDRAM devices are ideal for 10GbE, 40GbE and 100GbE packet buffering, lookup tables, and inspection tasks. A variety of Network Processors and high performance FPGAs are already equipped with RAM ports ready to host LLDRAM II devices.

Drop-in compatible with RLDRAM 2 (Reduced Latency DRAM)

- 533 MHz DDR interface (1.067Gbit/s/pin)
- Common (x36) I/O
- 8-bank architecture
- 15 ns tRC
- Single-cycle (SRAM-like) address load

A complete set of design options:

- Configurable read/write latencies & cycle times
- Configurable burst lengths (2/4/8)
- On-Die Input Termination
- IEEE 1149.1 boundary scan
- Traditional multiplexed address bus option for backward compatibility

288Mb LLDRAM II

GSI P/N	Config	V _{EXT} and V _{DD} Voltage	I/O Voltage	I/O		Speed (MHz)	144 mBGA (GL)
				Common	Separate		
GS4288C36yy-###	8M x 36	V _{EXT} —2.5 V V _{DD} —1.8 V	1.5 and 1.8 V HSTL	•		533/400/300	•