

Military Temperature NBT™ SRAM & SyncBurst™ SRAM

Founded in 1995, GSI Technology, Inc. is a leading provider of high performance semiconductor memory solutions for military, medical, automotive and other applications.

GSI SyncBurst™ and NoBusTurnaround™ 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.

Synchronous Burst (SyncBurst™)

SRAMs SyncBurst SRAMs provide a “burst” of 2 to 4 words in response to a single clock signal.

No Bus Turnaround (NBT™) SRAMs

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).

SyncBurst and 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.

Features

- Pin-compatible across multiple densities allows easy upgrades
- Constructed using foundry-standard CMOS, 100-pin TQFP, and 119/165/209-ball BGA packaging (both leaded and RoHS-compliant BGA options)
- Industrial temperature support for all densities and functional options. Extended and military temperature support upon request.

Design Models



Verilog

- Configurable for full- or reduced-array simulations
- Error checks for proper timing constraints
- No compiler switches necessary for setup



VHDL

- Configured for worst-case data valid windows
- Configured for worst-case QK to data valid.



IBIS

- 100 data points for V/T and DC curves
- 50 data points for Power & Ground clamps
- Programmable-impedance I/Os: full range, 5Ω increments
- Programmable-termination inputs: full range, 5Ω increments
- Includes per-pin and mutual-per-pin RLC models



BSDL

Boundary-scan description language – available as needed

72 Mb

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		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	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	JTAG; FLXDrive™; Pipeline and Flow Through modes

36 Mb

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		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	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	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	JTAG; FLXDrive™; Pipeline and Flow Through modes

Burst RAM & NBT SRAM

36Mbit
GS836xxx

72Mbit
GS868xxx

144Mbit
GS8130xxx

No Burst Turnaround (NBT) SRAM

18 Mb

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Features
				V _{DD}	V _{DDQ}	
GS8162Z72CC-300M	256K x 72	300	2.8-3.8	2.5/3.3 V	2.5/3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8162Z36DB-200M GS8162Z18DB-200M	512k x 36 1M x 18	200	2.5-3.8	2.5/3.3 V	2.5/3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS8162Z36DD-200M GS8162Z18DD-200M	512K X 36 1M x 18	200	2.5-3.8	2.5/3.3 V	2.5/3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes

9 Mb

GSI P/N	Config	Speed (MHz)	Pipeline tKQ (ns)	Voltage Options		Features
				V _{DD}	V _{DDQ}	
GS882Z36CB-300M GS882Z18CB-300M	256K x 36 512K x 18	300	2.5 - 3.8	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS882Z36CD-300M GS882Z18CD-300M	256 x 36 512K x 18	300	2.5 - 3.8	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes

SyncBurst and No Bus Turnaround SRAMs

Density	4Mb	9Mb	18Mb	36Mb	72Mb	144Mb	288Mb
Max Freq. (3.3 V)	250 MHz	333 MHz	400 MHz	400 MHz	300 MHz	300 MHz	250 MHz
Max Freq. (3.3 V)	250 MHz	250 MHz	333 MHz	333 MHz	250 MHz	250 MHz	200 MHz
Pipelined Burst	GS840	GS880 GS881* GS882**	GS8160 GS8161* GS8162**	GS8320 GS8321* GS8322**	GS8640 GS8642**	GS81280 GS81282* GS81284**	GS82564**
Pipelined Burst (DCD)	GS840E	GS880E GS881E*	GS8160E GS8161E*	GS8320E GS8321E*	GS8640E	GS81280E	—
Pipelined NBT	GS840Z	GS880Z GS881Z* GS882Z**	GS8160Z GS8161Z* GS8162Z**	GS8320Z GS8321Z* GS8322Z**	GS8640Z GS8642Z**	GS81280Z GS81282Z* GS81284Z**	GS82564Z**
Flow Through	GS840F	GS880F	GS8160F	GS8320F	GS8640F	GS81280F	—

* JTAG

**JTAG and FLXDrive™

Sync Burst SRAM

72 Mb

Speed (MHz) - 250 Pipeline tKQ (ns) - 2.3 - 3.5

GSI P/N	Config	Voltage Options		Features
		V _{DD}	V _{DDQ}	
GS864236B-300M GS864218B-300M	2M x 36 4M x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS864272C-250M	1M x 72	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes

36 Mb

Speed (MHz) - 375 Pipeline tKQ (ns) - 2.5-4.0

GSI P/N	Config	Voltage Options		Features
		V _{DD}	V _{DDQ}	
GS832236AB-375M GS832218AB-375M	1M x 36 2M x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS832236AB-375M GS832218AB-375M	1M x 36 2M x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS832272C-225M	512K x 72	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes

18 Mb

Speed (MHz) - 200 Pipeline tKQ (ns) - 2.8-3.8

GSI P/N	Config	Voltage Options		Features
		V _{DD}	V _{DDQ}	
GS816272CC-200M	256K x 72	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS816236DB-200M GS816218DB-200M	512K x 36 1M x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS816236DD-200M GS816218DD-200M	512K x 36 1M x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS816036DGT-200M GS816032DGT-200M GS816018DGT-200M	512K x 36 512K x 32 1M x 18	2.5 / 3.3 V	2.5 / 3.3 V	Pipeline and Flow Through modes

9 Mb

Speed (MHz) - 300 Pipeline tKQ (ns) - 2.5 - 3.8

GSI P/N	Config	Voltage Options		Features
		V _{DD}	V _{DDQ}	
GS88236CB-300M GS88218CB-300M	256K x 36 512K x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes
GS88236CD-300M GS88218CD-300M	256K x 36 512K x 18	2.5 / 3.3 V	2.5 / 3.3 V	JTAG; FLXDrive™; Pipeline and Flow Through modes



Technical Notes



Timing Designer

