



# Specialty NOR Flash Memory

## 36 Series

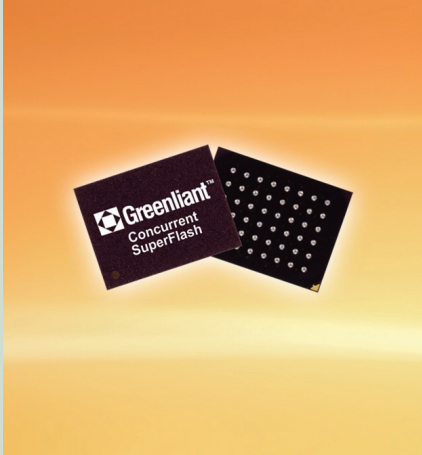
## Product Brief

### Product Description

Greenliant's Concurrent SuperFlash™ (CSF™) products provide high reliability of more than 100 years data retention and endurance up to 100,000 cycles, low power consumption and a small footprint, making them well suited for code storage applications and space-constrained systems. Available in industrial grade temperatures, CSF devices are offered in industry-standard packages.

Based on SuperFlash technology, Greenliant's parallel flash products meet customer demands for high performance and increased data protection. The multi-bank architecture and Read-while-Write operations of the CSF series make it well-suited for automotive, communications and industrial applications. These devices meet the needs of embedded designs that demand stability, small size and long battery life.

Greenliant's proven industry leadership is based on more than 30 years of technological know-how in the flash memory market. Greenliant's specialty memory products are compatible with popular NOR flash devices that are currently not available from other suppliers. They are designed to meet the stringent quality and long-term support requirements of embedded applications.



### Key Features

#### Small Footprint

- Small sector architecture
- Tiny industry-standard packages:  
TSOP: 12x20x1.2mm;  
TFBGA: 6x8x1.1mm

#### Proven Technology

- Endurance of 100,000 cycles
- Greater than 100 years data retention
- JEDEC-approved package outlines and standard pinouts

#### Concurrent Read / Write Operation

- Dual bank architecture: 2 KWord uniform sector-erase, 32 KWord block-erase or chip-erase capability

#### Fast Program / Erase

- Sector-Erase Time: 18 ms (typical)
- Block-Erase Time: 18 ms (typical)
- Chip-Erase Time: 35 ms (typical)
- Program Time: 7 μs (typical)

#### Data Protection

- Hardware and software features to protect data from inadvertent writes

#### Low Power Consumption

- Standby current as low as 4 μA (typical)
- Active current as low as 6 mA (typical)
- 3V supply voltage

#### Industrial Temperature

- Operation: -40°C to +85°C



### Applications

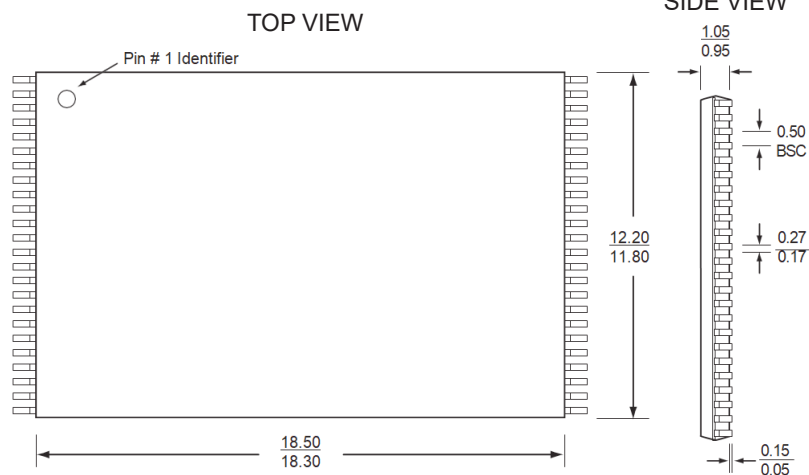
- Mobile phone
- Portable multimedia player
- Portable navigation device
- Switch / Router
- Fixed wireless terminal
- Video conferencing equipment
- Network interface card
- Industrial PC
- Point of Sale terminal
- Power meter
- Industrial gaming system
- Medical imaging
- Monitor / Scanner
- Industrial automation & control
- Test & measurement instrumentation

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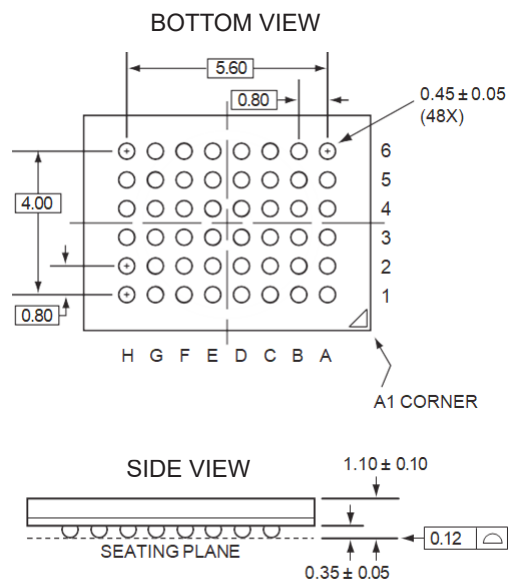
[www.Greenliant.com](http://www.Greenliant.com)

## Concurrent SuperFlash Package Diagrams

48-lead TSOP package  
12mm x 20mm x 1.2mm  
Pb-free (RoHS compliant)






48-ball TFBGA package  
6mm x 8mm x 1.1mm  
Pb-free (RoHS compliant)



### Product Lineup

Part Number	GLS36VF1601G	GLS36VF3203
Type	16 Mbit (x8/x16) Concurrent SuperFlash, Bottom Boot	32 Mbit (x8/x16) Concurrent SuperFlash, Bottom Boot
Density	1 Mbit x16 or 2 Mbit x8	4 Mbit x8 or 2 Mbit x16
Voltage	2.7V – 3.6V	
Operating Temperature	Industrial: -40°C to +85°C	
Storage Temperature	-65°C to +150°C	
Read Access Speed (ns)	70	
Package Type / Dimensions (mm)	TSOP-48 / 12 x 20 x 1.2	TFBGA-48 / 6 x 8 x 1.1

Microchip (Atmel) Cross-Reference: [www.greenliant.com/products/flash-memory.dot](http://www.greenliant.com/products/flash-memory.dot)

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