

## HIGH-RELIABILITY, SUPER-SMALL PACKAGE 3-WIRE SERIAL E<sup>2</sup>PROM

## ► NEW S-93C46B/56B/66B/76A/86B

The S-93C46B/56B/66B/76A/86B is high speed, low current consumption, 3-wire 1/2/4/8 or 16 Kb E<sup>2</sup>PROM with a wide operating voltage range. It is organized as 64-word × 16-bit, 128-word × 16-bit, 256-word × 16-bit, 512-word × 16-bit, and 1024 words × 16 bits respectively. Each is capable of sequential read, at which time addresses are automatically incremented in 16-bit blocks. The instruction code is compatible with the NM93CSxx.

These highly reliable E<sup>2</sup>PROM memories feature a guaranteed endurance of 1 million cycles over a wide operating temperature range (−40 to +85°C), data retention of 10 years, and a maximum operating temperature of 105°C.

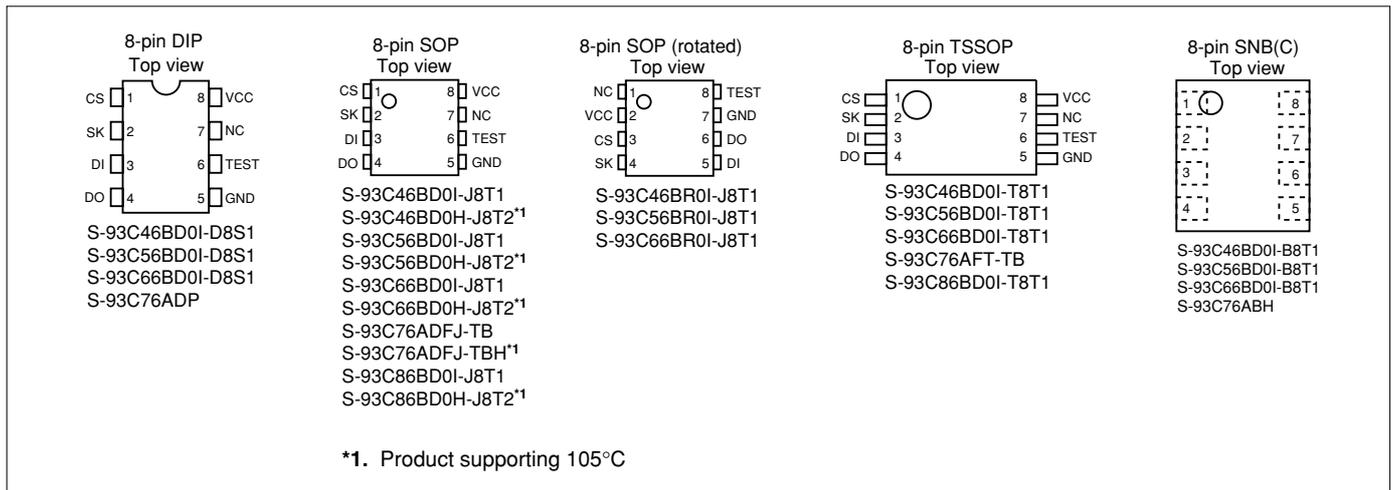
Built-in data protection functions such as prohibiting write operations during low-voltage supply and protecting against write due to erroneous instruction recognition make these products ideal for storing important data.

The use of a super-small 8-pin SNB package means that these memories are excellent for small and thin applications such as mobile devices.

### ■ FEATURES

- Low current consumption:
  - 1.5 μA max. (V<sub>CC</sub> = 5.5 V, during standby)
  - 0.8 mA max. (V<sub>CC</sub> = 5.5 V, during reading)
  - 0.4 mA max. (V<sub>CC</sub> = 2.5 V, during reading)
- Wide operating voltage range:
  - 1.8 to 5.5 V (during reading)
  - 2.7 to 5.5 V (during writing)
- Sequential read capable
- Write protection under low power supply voltage
- Protect function against write due to erroneous instruction recognition (S-93C46B/56B/66B/86B)
- Endurance:
  - Up to 10 million cycles (25°C)
  - 1 million cycles guaranteed (85°C)
- Data retention: 10 years
- High temperature operation: Supports 105°C max.

### ■ PIN CONFIGURATIONS



### ■ SPECIFICATIONS

Memory size	Product name	Organization	Instruction code	Operating voltage range		Current consumption		Clock frequency (max.)	Endurance	Data retention	Package
				Read	Write	Read (max.)	Standby (max.)				
1 Kb	S-93C46B	64 × 16	NM93CSxx compatible	1.8 V to 5.5 V	2.7 V to 5.5 V	0.8 mA (5.5 V) 0.4 mA (2.5 V)	1.5 μA	0.25 MHz (1.8 V) to 2.0 MHz (5.5 V)	10 million cycles (25°C) 1 million cycles (85°C)	10 years (After 1 million cycles)	8DIP/8SOP/ 8TSSOP/8SNB
2 Kb	S-93C56B	128 × 16	NM93CSxx compatible	1.8 V to 5.5 V	2.7 V to 5.5 V	0.8 mA (5.5 V) 0.4 mA (2.5 V)	1.5 μA	0.25 MHz (1.8 V) to 2.0 MHz (5.5 V)	10 million cycles (25°C) 1 million cycles (85°C)	10 years (After 1 million cycles)	8DIP/8SOP/ 8TSSOP/8SNB
4 Kb	S-93C66B	256 × 16	NM93CSxx compatible	1.8 V to 5.5 V	2.7 V to 5.5 V	0.8 mA (5.5 V) 0.4 mA (2.5 V)	1.5 μA	0.25 MHz (1.8 V) to 2.0 MHz (5.5 V)	10 million cycles (25°C) 1 million cycles (85°C)	10 years (After 1 million cycles)	8DIP/8SOP/ 8TSSOP/8SNB
8 Kb	S-93C76A	512 × 16	NM93CSxx compatible	1.8 V to 5.5 V	2.7 V to 5.5 V	0.8 mA (5.5 V) 0.4 mA (2.5 V)	1.5 μA	0.25 MHz (1.8 V) to 2.0 MHz (5.5 V)	10 million cycles (25°C) 1 million cycles (85°C)	10 years (After 1 million cycles)	8DIP/8SOP/ 8TSSOP/8SNB
16 Kb	S-93C86B	1024 × 16	NM93CSxx compatible	1.8 V to 5.5 V	2.7 V to 5.5 V	0.8 mA (5.5 V) 0.4 mA (2.5 V)	1.5 μA	0.25 MHz (1.8 V) to 2.0 MHz (5.5 V)	10 million cycles (25°C) 1 million cycles (85°C)	10 years (After 1 million cycles)	8SOP/ 8TSSOP