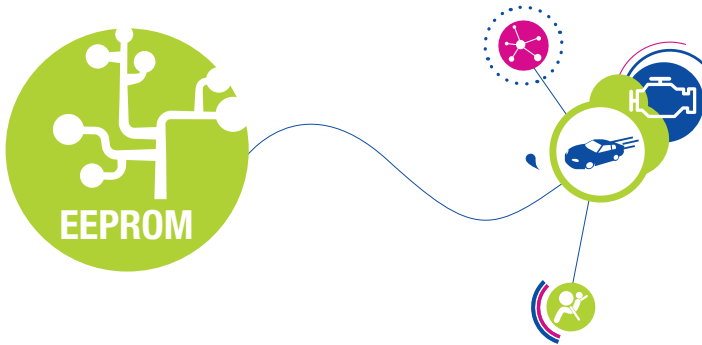


# Advanced Automotive EEPROM



**Boost your flexibility with the world's #1  
EEPROM supplier**



# Introduction to Advanced Automotive EEPROM

Serial EEPROM is the most flexible type of non-volatile memory. When many parameters, heavy cycling requirements, safe data retention and high temperature mission profiles are required, EEPROM is the ideal product for high-quality and flexible parameter storage.

For the past 9 years, ST's automotive serial EEPROM has been ranked #1 offering a wide portfolio covering automotive needs and requirements. ST's Advanced Automotive series is designed to answer new automotive trends while offering increased robustness with AEC-Q100 Grade 0 qualification, PPAP Level 3 compliancy, zero-defect built-in quality and embedded Error Correction Code for safe and long-lasting data retention.

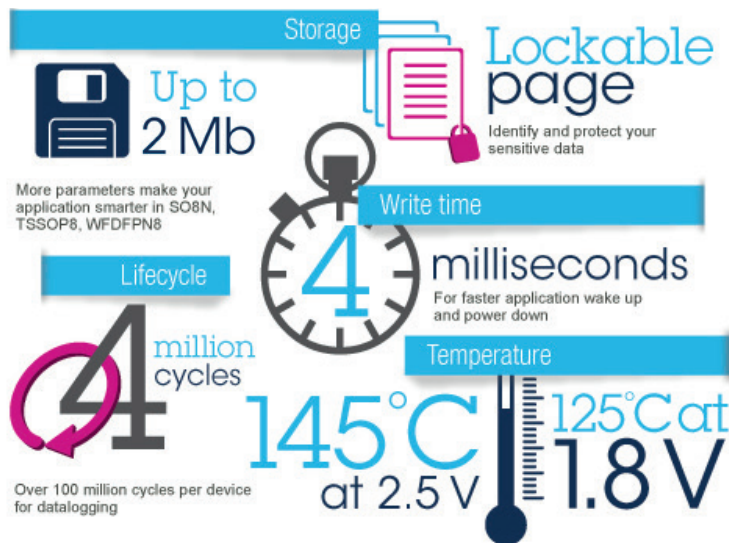
Three industry standard serial buses are supported: I2C, SPI and Microwire. Thanks to an advanced proprietary manufacturing process, ST's Advanced Automotive series proposes an enlarged portfolio and offers a complete range of densities from 1 Kbit to 2 Mbits:

- Available in standard S08N, TSSOP8 and small leadless WDFPN8 packages to answer space and PCB cost constraints
- Following increasing temperature trends with 125 °C and 145 °C in-package solutions
- Operating from 5 V down to 1.8 V for compatibility with advanced digital cores




- Ensuring fast application wake-up and shutdown with 20 MHz for SPI and 1 MHz for I2C as well as data storage in 4 ms
- Supporting datalogging and event recording with 4 million E/W cycles at 25 °C, 1.2 million at 85 °C and 0.4 million at 145 °C (per byte) as well as over 100 million cycles per device
- Offering best-in-class retention times of 100 years at 25 °C and 50 years at 125°C

ST also offers an embedded lockable identification page to identify the EEPROM device and safely store your most sensitive parameters. With a specific set of instructions, data such as traceability, serial number, as well as unique ID can be stored and locked.

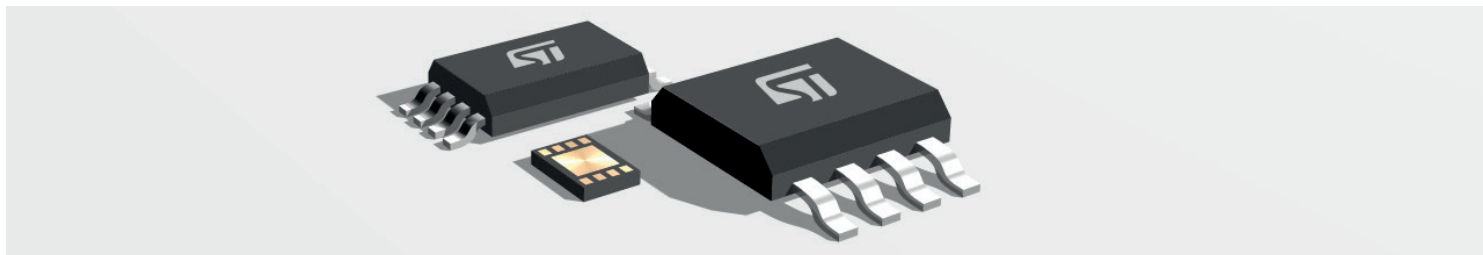
IBIS and Verilog models are available on our website for all products.



## Package options

Name	Package	Overall width (max)	Overall length (max)	Projected PCB area (mm <sup>2</sup> )	Overall height (max)	Pitch	Weight (mg)	Number of pins/balls	Comments
S08N		5	6.2	31	1.75	1.27	80	8	
TSSOP8		3.1	6.6	20	1.2	0.65	34	8	
WDFPN8		2.1	3.1	6.5	0.8	0.5	22	8	Leadless package

Dimensions in mm



 **RoHS**  
compliant

# Automotive EEPROM portfolio

## SPI

All products are AEC-Q100-qualified and PPAP Level 3-compliant

Part number	Storage capacity (Kbits)	Max. operating temperature (°C) <sup>1</sup>	Min. supply voltage (V) <sup>2</sup>	Max. clock frequency (MHz) <sup>3</sup>	Package options <sup>4</sup>		
					S08N	TSSOP8	WDFPN8
M95020-A125	2	125	1.8	20	X	X	X
M95040-A125	4	125	1.8	20	X	X	X
M95080-A125	8	125	1.8	20	X	X	X
M95160-A125	16	125	1.8	20	X	X	X
M95320-A125	32	125	1.8	20	X	X	X
M95640-A125	64	125	1.8	20	X	X	X
M95128-A125	128	125	1.8	20	X	X	X
M95256-A125	256	125	1.8	20	X	X	X
M95512-A125	512	125	1.8	16	X	X	X
M95M01-A125	1024	125	2.5	16	X	X	
M95M02-A125	2048	125	2.5	5	X		

Part number	Storage capacity (Kbits)	Max. operating temperature (°C) <sup>1</sup>	Min. supply voltage (V) <sup>2</sup>	Max. clock frequency (MHz) <sup>3</sup>	Package options <sup>4</sup>		
					S08N	TSSOP8	WDFPN8
M95040-A145	4	145	2.5	10		X	
M95080-A145	8	145	2.5	10		X	
M95160-A145	16	145	2.5	10		X	
M95320-A145	32	145	2.5	10		X	
M95640-A145	64	145	2.5	10		X	
M95128-A145	128	145	2.5	10	X	X	
M95256-A145	256	145	2.5	10		X	
M95512-A145	512	145	2.5	10		X	
M95M01-A145	1024	145	2.5	10		X	

Notes:

1. The temperature range is always from -40 °C to the maximum value defined in the table above.
2. The maximum operating voltage is always 5.5 V.
3. The clock frequency value depends on the Vcc applied. The values given here are based on a 5 V supply.
4. For more options contact your nearest ST sales office or online support at st.com.

**Common features:** All products benefit from a lockable identification page and support datalogging and event recording with 4 million E/W cycles at 25 °C, 1.2 million at 85 °C and 0.4 million at 145 °C (per byte) as well as over 100 million cycles per device.

## I2C

All products are AEC-Q100-qualified and PPAP Level 3-compliant

Part number	Storage capacity (Kbits)	Max. operating temperature (°C) <sup>2</sup>	Min. supply voltage (V) <sup>3</sup>	Max. clock frequency (MHz)	Package options		
					S08N	TSSOP8	WDFPN8
M24C02-A125	2	125	1.8	1	X	X	X
M24C04-A125	4	125	1.8	1	X	X	X
M24C08-A125	8	125	1.8	1	X	X	X
M24C16-A125	16	125	1.8	1	X	X	X
M24C32-A125	32	125	1.8	1	X	X	X
M24C64-A125	64	125	1.8	1	X	X	X
M24128-A125	128	125	1.8	1	X	X	X
M24256-A125	256	125	1.8	1	X	X	X
M24512-A125	512	125	1.8	1	X	X	X
M24M01-A125	1024	125	2.5	1	X	X	
M24M02-A125 <sup>1</sup>	2048	125	2.5	1	X		

Notes:

1. Under development.
2. The temperature range is always from -40 °C to the maximum value defined in the table above.
3. The maximum operating voltage is always 5.5 V.

**Common features:** All products benefit from a lockable identification page and support datalogging and event recording with 4 million E/W cycles at 25 °C, 1.2 million at 85 °C and 0.4 million at 145 °C (per byte) as well as over 100 million cycles per device.

## MICROWIRE

All products are AEC-Q100-qualified and PPAP Level 3-compliant

Part Number	Storage Capacity (kbit)	Max. Operating Temperature (°C) <sup>2</sup>	Supply Voltage min (V) <sup>3</sup>	Clock Frequency max (MHz)	Package options			Specific features
					S08N	TSSOP8	UFDFPN8 <sup>1</sup>	
M93C46-A125	1	125	1.8	2	X	X		8- or 16-bit organization
M93C56-A125	2	125	1.8	2	X	X		8- or 16-bit organization
M93C66-A125	4	125	1.8	2	X	X		8- or 16-bit organization
M93C76-A125	8	125	1.8	2	X	X		8- or 16-bit organization
M93C86-A125	16	125	1.8	2	X	X		8- or 16-bit organization

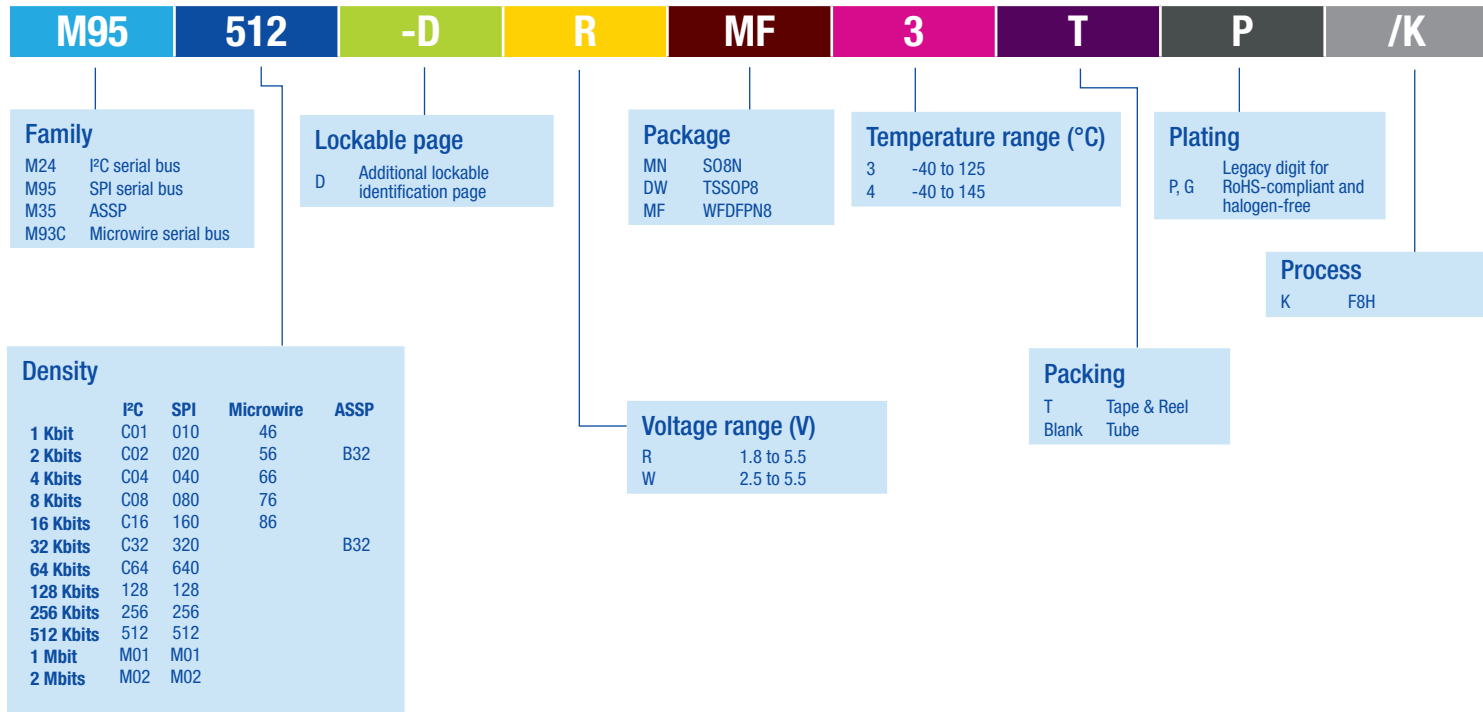
Notes

1. On request.
2. The temperature range is always from -40 °C to the maximum value defined in the table above.
3. The maximum operating voltage is always 5.5 V.

**Common features:** All products support datalogging and event recording with 4 million E/W cycles at 25 °C, 1.2 million at 85 °C and 0.4 million at 145 °C (per byte) as well as over 100 million cycles per device.

Please check for up-to-date information on our website [www.st.com/advautoeeprom](http://www.st.com/advautoeeprom)

# Ordering information



# life.augmented

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compliant



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