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## Wafer and Die Products

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*Adesto Technologies offers a complete line of KGD-wafer form memory solutions for IoT and industrial control applications*

Designers of consumer and industrial end equipment are giving greater consideration to the multi-chip module as a pathway to affordable cost, better performance, and faster time to market. This migration towards die scale packaging is being accelerated as the issues of embedded flash and embedded SRAM increase and geometries decrease.

- Power consumption increases due to SRAM power limitations and size
- Embedded Flash is density limited playing against any advantage of scalability
- Time-to-market and development costs are increasing due to the complexity of embedded integration

Adesto standard and high temperature die products with energy-saving features are suitable for IoT SIP solutions, motor drives, actuators, and sensors for consumer, industrial and heavy industry, even in harsh environments.

Existing SoC solutions are reaching the limits of embedded flash memory density and customers are demanding increased performance, feature sets and software options such as Over the Air (OTA) updates. These SoC solutions need external memory to accommodate a growing feature set as well and wireless OTA capability.

External memory with high temperature reliability is needed to accommodate the high thermal conditions in bare die MCM and power module applications. Adesto's memory solutions provide the designer with a broad array of operational feature choices and high temperature reliability in a 100% tested known good wafer form. Adesto's memory solutions also offer a wide range of complimentary features to bring greater benefit and value to the system.

- Wide Voltage Ranges 1.65V to 3.6V
- Ultra Low Power Standby <200nA
- Flexible SRAM buffers with R/W capability
- Byte Erase/Write and Small Granular architectures

Adesto Technologies has released a complete line of high temperature Serial Flash solutions to meet the growing demand in motor drive control, solar DC inverter, advanced lighting and die-based module power electronics applications.

The product line includes Adesto's Fusion for IP-connected lighting applications and KGD (Known Good Die) selections that can handle the higher temperatures in microprocessor die modules. Any die module application will need high temp performance due to high junction temperatures of the resident microprocessor. If the target application is a die module, make sure to leverage our high temp qualified KGD products.

Part Number*	Operating Voltage	Max Operating Temperature
AT25DF011-DWF	Wide Vcc 1.65 V-3.6 V	85°C
AT25DF011-DWFHT	Wide Vcc 1.65 V-3.6 V	125°C
AT25DF021A-DWF	Wide Vcc 1.65 V-3.6 V	85°C
AT25DF021A-DWFHT	Wide Vcc 1.65 V-3.6 V	125°C
AT25DF041B-DWF	Wide Vcc 1.65 V-3.6 V	85°C
AT25DF041B-DWFHT	Wide Vcc 1.65 V-3.6 V	125°C
AT45DB021E-DWF	Wide Vcc 1.65 V-3.6 V	85°C
AT45DB041E-DWF	Wide Vcc 1.65 V-3.6 V	85°C
AT45DB041E-DWFHT	Wide Vcc 1.65 V-3.6 V	125°C
AT45DB081E-DWF	Wide Vcc 1.7 V-3.6 V	85°C
AT45DB161E-DWF	Wide Vcc 2.3 V - 3.6 V	85°C
AT45DB321E-DWF	Wide Vcc 2.3 V - 3.6 V	85°C
AT45DB641E-DWF	Wide Vcc 2.3 V - 3.6 V	85°C
AT25SF041-DWF	Vcc 2.5 V - 3.6 V	85°C
AT25SF081-DWF	Vcc 2.5 V - 3.6 V	85°C
AT25SF161-DWF	Vcc 2.5 V - 3.6 V	85°C
AT25SF321-DWF	Vcc 2.5 V - 3.6 V	85°C

*\*These are standard die sale products. Contact Adesto for other Adesto Performance Memory Solutions, not listed here, that can be made available in wafer form per customer request.*

**Adesto Memory Solutions**  
**KGD Wafer Products**  
 Certified 125°C and Industrial Temp

Class	Benefit	Adesto Family	Features	Datasheet	Density	Part Number
<b>ENHANCED FLASH</b> Features Flexibility Affordable	Security Register	<b>AT25DF FUSION</b>	<a href="#">Fusion</a>	<a href="#">Download</a>	1 Mb	AT25DF011-DWF
	SRAM Buffers				2 Mb	AT25DF021A-DWF
	Small Page & Byte Protected Sectors				4 Mb	AT25DF041B-DWF
<b>SYSTEM EFFICIENT</b>  Command Suite Memory for the µC	Over 60 built-in optional commands	<b>AT45 DATAFLASH</b>	<a href="#">DataFlash</a>	<a href="#">Download</a>	2 Mb	AT45DB021E-DWF
	Security and protected blocks				4 Mb	AT45DB041E-DWF
	Flexible Erase & Program				8 Mb	AT45DB081E-DWF
	Byte, Page, Block				16 Mb	AT45DB161E-DWF
					32 Mb	AT45DB321E-DWF
					64 Mb	AT45DB641E-DWF
<b>STANDARD SERIAL FLASH</b>  Industry Standard SPI	Flexible Erase	<b>AT25SF STANDARD FLASH</b>	<a href="#">Std Flash</a>	<a href="#">Download</a>	4 Mb	AT25SF041-DWF
	Dual and Quad I/O for Increased Read Throughput				8 Mb	AT25SF081-DWF
					16 Mb	AT25SF161-DWF
					32 Mb	AT25SF321-DWF
	4 Mbit - 32 Mbit					

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