

Committed to excellence

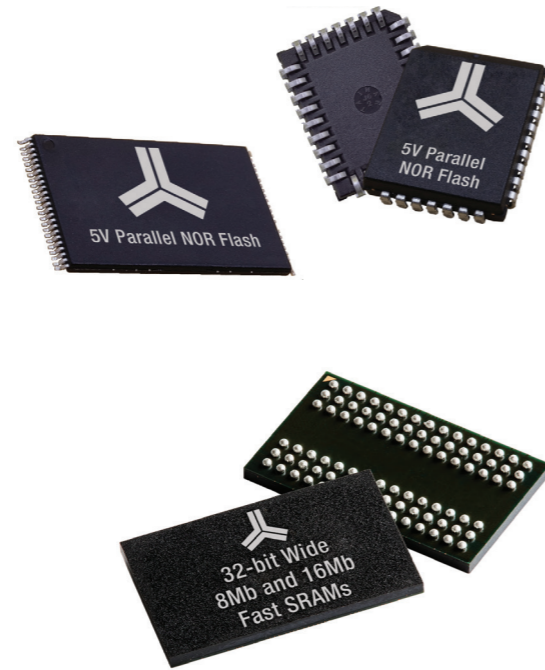


ALLIANCE SELECTION GUIDE 2023








Worldwide Leader in Legacy Memory

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Our Product Portfolio

-  Semiconductors
-  Boards & Systems
-  Passive Components
-  Storage Technologies
-  Electromechanical Components
-  Wireless Technologies
-  Displays & Monitors

Our Initiatives



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Committed to excellence

Consult – Know-how. Built-in.

The Technical Competence from RUTRONIK
Worldwide and individual consulting on the spot by competent sales staff, application engineers & product specialists.

Components – Variety. Built-in.

The Product Portfolio from RUTRONIK
Wide product range of semiconductors, passive and electromechanical components, displays & monitors, boards & systems, storage and wireless technologies for optimum coverage of your needs.

Logistics – Reliability. Built-in.

The Delivery Service from RUTRONIK
Innovative and flexible solutions: from supply chain management to individual logistics systems.

Quality – Security. Built-in.

Quality without Compromise from RUTRONIK
The integrated management system (IMS) encompasses quality control, information security, environmental protection, occupational health and safety.

Joint Selection Guide



Alliance Memory

We are pleased to present our joint product selection guide with Alliance Memory on the current product offering for DRAM, SRAM, and FLASH eMMC. Alliance continues to be one of the leading suppliers of legacy memory products, offering high quality products with minimal die shrinks. We are therefore delighted to be working with Alliance and are at your disposal for all your questions and consulting needs.

Rutronik

Founded in 1973 by Helmut Rudel in Ispringen (Germany) the company has developed from a “one-man-company” into one of the worldwide leading broadline distributors, engaging more than 1,800 employees. In the electronic components market, Rutronik currently ranks 11th worldwide and is the third largest European distributor. The product range includes semi-conductors, passive and electromechanical components as well as embedded boards, storage technologies, displays and wireless products. The markets that the company primarily targets include automotive, medical, industrial, home appliance, energy and lighting. Rutronik operates as an independent, owner-managed company from its German headquarter. Guided by the company philosophy of “committed to excellence”, Rutronik has more than 40 successful years of corporate history to look back upon with growth that is always beyond that of the market. The contract distributor has a dense pan-European network of sales offices and is represented through its own branches in all European countries, so as to guarantee an all-encompassing customer support.

The subsidiary Rutronik Inc. serves the North American market while the Asian subsidiaries with seven offices in China, Hong Kong, Taiwan and Thailand support the customers in Asia. Consulting in technical, commercial and logistical matters as well as service and technical support are available with a consistent level of quality to customers in all the countries.

The ranges **RUTRONIK EMBEDDED**, **RUTRONIK SMART**, **RUTRONIK POWER** & **RUTRONIK AUTOMOTIVE** provide customers with specific products and services in groups tailored to the respective applications. Expert technical support for product development and design-in, individual logistics and supply chain management solutions as well as comprehensive services complete its scope of performance.



Synchronous DRAM 3.3V (x8, x16 and x32)

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQUENCY	TEMPERATURE	ALLIANCE
16Mb	1M x 16	3.3V	50pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C1M16S-6/7 TxN
64Mb	4M x 16	3.3V	54pin TSOP II	143/166/200 MHz	Commercial, Industrial, Automotive	AS4C4M16SA-5/6/7 TxN
64Mb	4M x 16	3.3V	54pin TSOP II	166 MHz	Industrial	AS4C4M16SB-6TIN
64Mb	4M x 16	3.3V	54-ball FBGA/60-ball FBGA	143/166 MHz	Commercial, Industrial, Automotive	AS4C4M16SA-6/7 BxN, B2xN
64Mb	2M x 32	3.3V	90-ball TFBGA	143/166 MHz	Commercial, Industrial	AS4C2M32S-6/7 BxN
64Mb	2M x 32	3.3V	86pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C2M32SA-6/7 TxN
128Mb	8M x 16	3.3V	54pin TSOP II/54-ball FBGA	143/166 MHz	Commercial, Industrial, Automotive	AS4C8M16SA-6/7 TxN/BxN
128Mb	8M x 16	3.3V	54pin TSOP II	166 MHz	Industrial	AS4C8M16SB-6TIN
128Mb	4M x 32	3.3V	90-ball TFBGA	143/166 MHz	Commercial, Industrial	AS4C4M32S-6/7 BxN
128Mb	4M x 32	3.3V	86pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C4M32SA-6/7 TxN
256Mb	16M x 16	3.3V	54pin TSOP II/54-ball FBGA	143/166 MHz	Commercial, Industrial	AS4C16M16SA-6/7 TxN/BxN
256Mb	16M x 16	3.3V	54pin TSOP II/54-ball FBGA	143/166 MHz	Commercial, Industrial	AS4C16M16SB-6/7 TxN/BxN
256Mb	8M x 32	3.3V	86pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C8M32S-6/7 TxN
256Mb	8M x 32	3.3V	90-ball TFBGA	143/166 MHz	Commercial, Industrial	AS4C8M32SA-6/7 BxN
256Mb	32M x 8	3.3V	54pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C32M8SA-6/7 TxN
256Mb	64M x 4	3.3V	54pin TSOP II	143/166 MHz	Commercial, Industrial	AS4C64M4SA-6/7 TxN
512Mb	32M x 16	3.3V	54-ball FBGA	143 MHz	Industrial	AS4C32M16SB-7BIN
512Mb	32M x 16	3.3V	54pin TSOP II	143 MHz/166 MHz	Commercial, Industrial	AS4C32M16SB-6/7 TxN
512Mb	32M x 16	3.3V	54pin TSOP II	143 MHz	Industrial	AS4C32M16SC-7TIN
512Mb	16M x 32	3.3V	86pin TSOP II	143 MHz	Industrial	AS4C16M32SC-7TIN
512Mb	64M x 8	3.3V	54pin TSOP II	143 MHz	Industrial	AS4C64M8SC-7TIN
512Mb	64M x 8	3.3V	54pin TSOP II	133 MHz	Commercial	AS4C64M8SD-7TCN

x = Temperature Range | C = 0°C ~ +70°C | I = -40°C ~ 85°C | A = -40°C ~ +105°C

SDRAM Cross Reference

DENS	ORG	ALLIANCE	SAMSUNG (EOL)	MICRON	SK HYNIX (EOL)	ISSI	WINBOND	ELPIDA (EOL)
16Mb	1M x 16	AS4C1M16S-6/7TxN	K4S161622E	MT48LC1M16A1	HY57V161610	IS42S16100	W9816G6TH	EDS1616AGTA
64Mb	4M x 16	AS4C4M16SA-6/7TxN AS4C4M16SB-6TIN	K4S641632N-UCxx	MT48LC4M16A2P	HY57V641620	IS42S16400	W9864G6JH	uPD4564163G5-Axx
64Mb	4M x 16	AS4C4M16SA-6/7BxN		MT48LC4M16A2P	HY5V66D	IS42S16400	W9864G6JT	
64Mb	4M x 16	AS4C4M16SA-7B2CN				IS42S16400	W9864G6JB-7	
64Mb	2M x 32	AS4C2M32S-6/7BxN		MT48LC2M32B2B5-x	HY5V62	IS42S32200	W9864G2IB-x	EDS6432AFBH
64Mb	2M x 32	AS4C2M32SA-6/7TxN	K4S643232H-UCxx	MT48LC2M32B2P-x (EOL)	HY57V643220	IS42S32200	W9864G2J(G,I)H-x	EDS6432AFTA
128Mb	8M x 16	AS4C8M16SA-6/7TxN AS4C8M16SB-6TIN	K4S281632K-UCxx	MT48LC8M16A2P	HY57V281620	IS42S16800	W9812G6K(G,I)H	uPD45128163G5-Axx
128Mb	8M x 16	AS4C8M16SA-6/7BxN	K4S281632D-RL75	MT48LC8M16A2B4	HY5V26	IS42S16800	W9812G6JB	
128Mb	4M x 32	AS4C4M32S-6/7BxN		MT48LC4M32B2B5-x	HY5V22	IS42S32400	W9812G21(G)B-x	EDS1232AHBH
128Mb	4M x 32	AS4C4M32SA-6/7TxN		MT48LC4M32B2P-x (EOL)	HY57V283220T	IS42S32400	W9812G2G(H,E,J)H	EDS1232AHTA
256Mb	16M x 16	AS4C16M16SA/B-6/7TxN	K4S561632N-UCxx	MT48LC16M16A2P	H57V2562GTR	IS42S16160	W9825G6K(D,E,J)H	EDS2516AP(AF,AC)TA-xx
256Mb	16M x 16	AS4C16M16SA-6/7BxN	K4S561632D-RL75	MT48LC16M16A2B4	HY5V56	IS42S16160	W9825G6JB	EDS2516EE(JE)BH
256Mb	8M x 32	AS4C8M32S-6/7BTN		MT48LC8M32B2B5-x (EOL)	HY5V52	IS42S32800	W9825G2J(D)B-x	EDS2532EEBH
256Mb	8M x 32	AS4C8M32SA-6/7BxN		MT48LC8M32B2B5-x	HY5V52	IS42S32800	W9825G2J(D)B-x	EDS2532EEBH
256Mb	32M x 8	AS4C32M8SA-6/7TxN		MT48LC32M8A2P(EOL)		IS42S83200J		
256Mb	64M x 4	AS4C64M4SA-6/7TxN		MT48LC64M4A2P (EOL)		IS42S32800		
512Mb	32M x 16	AS4C32M16SB-7BIN				IS42S16320		
512Mb	32M x 16	AS4C32M16SB-7TxN	K4S511632M-TC75	MT48LC32M16A2 (EOL)		IS42S16320		EDS5116ABTA
512Mb	32M x 16	AS4C32M16SC-7TIN	K4S511632M-TC75	MT48LC32M16A2 (EOL)		IS42S16320		EDS5116ABTA
512Mb	16M x 32	AS4C16M32SC-7TIN				IS42S32160		
512Mb	64M x 8	AS4C64M8SC-7TIN		MT48LC64M8A2P-75:C (EOL)		IS42S86400		
512Mb	64M x 8	AS4C64M8SD-7TCN		MT48LC64M8A2P-75:C (EOL)		IS42S86400		

DDR1 2.5V SDRAM

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
64Mb	4M x 16	2.5V	66pin TSOP II	200 MHz	400Mbps/pin	Commercial, Industrial, Automotive	AS4C4M16D1A-5TxN
64Mb	2M x 32	2.5V	144-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C2M32D1A-5BxN
128Mb	8M x 16	2.5V	66pin TSOP II	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C8M16D1A-5TxN
128Mb	8M x 16	2.5V	60-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C8M16D1-5BxN
128Mb	4M x 32	2.5V	144-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C4M32D1A-5BxN
256Mb	16M x 16	2.5V	66pin TSOP II	200 MHz	400Mbps/pin	Commercial	MT46V16M16P5BM
256Mb	16M x 16	2.5V	60-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C16M16D1-5BxN
256Mb	16M x 16	2.5V	66pin TSOP II	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C32M8D1-5TxN
512Mb	32M x 16	2.5V	66pin TSOP II	200 MHz	400Mbps/pin	Commercial, Industrial, Automotive	AS4C32M16D1A-5TxN
512Mb	32M x 16	2.5V	60-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial, Automotive	AS4C32M16D1-5BxN
512Mb	64M x 8	2.5V	66pin TSOP II, 60-ball FBGA	200 MHz	400Mbps/pin	Commercial, Industrial	AS4C64M8D1-5TxN/5BxN
1Gb	64M x 16	2.5V	66pin TSOP II, 60-ball FBGA	166 MHz	333Mbps/pin	Commercial, Industrial	AS4C64M16D1-6TxN AS4C64M16D1A-6TxN/6BxN

x = Temperature Range | C = 0°C ~ +70°C | I = -40 ~ 95°C | A = -40°C ~ +105°C

DDR1 2.5V SDRAM Cross Reference

DENSITY	ALLIANCE	SAMSUNG (EOL)	MICRON	ISSI	HYNIX - ALL EOL	WINBOND	ELPIDA
64Mb	AS4C4M16D1A-5TxN	K4H641638N	MT46V4M16TG (EOL)	IS43R16400B-5TL		W9464G6K(I,J)H	(EOL)
64Mb	AS4C2M32D1A-5BxN						
128Mb	AS4C8M16D1-5BxN	K4H281638D		IS43R16800E-5BL		W9412G6JB	EDD1216A
128Mb	AS4C8M16D1A-5TxN	K4H281638D	MT46V8M16 (EOL)	IS43R16800E-5TL	HY5DU1281622	W9412G6K(I,J)H	EDD1216A
128Mb	AS4C4M32D1A-5BxN		MT46V4M32FK (EOL)	IS43R32400E-5BL		W9412GIB	EDD1232A
256Mb	AS4C16M16D1-5BxN	K4H561638D	MT46V16M16CY-5B	IS43R16160	HY5DU561622	W9425G6JB	
256Mb	AS4C16M16D1A-5TxN	KH561638D	MT46V16M16P	IS43R16160	HY5DU561622	W945G6K(D,E,J)H	EDD2516A
512Mb	AS4C32M16D1-5BxN	K4H511638J	MT46V32M16CY	IS43R16320	HY5DU121622		EDD5116
512Mb	AS4C32M16D1A-5TxN	K4H511638J	MT46V32M16P	IS43R16320	HY5DU121622		EDD5116A
512Mb	AS4C64M8D1-5TxN	K4H510838J	MT46V64M8P	IS43R86400	HY5DU12822		EDD5108A
512Mb	AS4C64M8D1-5BxN	K4H510838J	MT46V64M8CY(BN)	IS43R86400	HY5DU12822		
1Gb	AS4C64M16D1-6TxN		MT46V64M16P (EOL)				
1Gb	AS4C64M16D1A-6TxN		MT46V64M16P (EOL)				

DDR2 1.8V SDRAM

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
256Mb	16M x 16	1.8V	84-ball FBGA	400 MHz	800 Mbps/pin	Commercial, Industrial	AS4C16M16D2-25BxN
512Mb	32M x 16	1.8V	84-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial, Automotive	AS4C32M16D2A/C-25BxN
512Mb	64M x 8	1.8V	60-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial, Automotive	AS4C64M8D2-25BxN
1Gb	64M x 16	1.8V	84-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial, Automotive	AS4C64M16D2A-25BxN
1Gb	64M x 16	1.8V	84-ball FBGA	400 MHz	800Mbps/pin	Commercial	AS4C64M16D2B-25BCN
1Gb	128M x 8	1.8V	60-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial	AS4C128M8D2A-25BxN
2Gb	128M x 16	1.8V	84-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial	AS4C128M16D2-25BxN
2Gb	128M x 16	1.8V	84-ball FBGA	400 MHz	800Mbps/pin	Commercial, Industrial	AS4C128M16D2A-25BxN
2Gb	256M x 8	1.8V	60-ball FBGA	400 MHz	800Mbps/pin	Commercial	AS4C256M8D2A-25BCN

x = Temperature Range | C = 0°C ~ +95°C | I = -40°C ~ +95°C | A = -40°C ~ +105°C

DDR2 1.8V SDRAM Cross Reference

DENSITY	ALLIANCE	SAMSUNG (EOL)	MICRON	ISSI	WINBOND	HYNIX (EOL)
256Mb	AS4C16M16D2-25BxN	K4T56163Q	MT47H16M16BG	IS43DR16160	W9725G6K(J)B	HY5PS561621
512Mb	AS4C32M16D2A/C-25BxN	K4T51163Q	MT47H32M16HR(NF)-25E	IS43DR16320	W9751G6K(J)B	HY5PS121621
512Mb	AS4C64M8D2-25BxN	K4T51083Q	MT47H64M8CF(SH)-25E	IS43DR86400	W9751G8K(J)B	H5PS182KFR
1Gb	AS4C64M16D2A-25BxN	K4T1G164Q	MT47H64M16HR(NF)-25E	IS43DR16640	W971G6G(J)B	H5PS1G63
1Gb	AS4C64M16D2B-25BCN	K4T1G164Q	MT47H64M16HR(NF)-25E	IS43DR16640	W971G6G(J)B	H5PS1G63
1Gb	AS4C128M8D2A-25BxN	K4T1G084Q	MT47H128M8SH-25E	IS43DR81280	W971G88(J)B	H5PS1G83
2Gb	AS4C128M16D2-25BxN		MT47H128M16RT-25E	IS43DR16128	W972G6G(J)B	
2Gb	AS4C128M16D2A-25BxN		MT47H128M16RT-25E	IS43DR16128	W972G6G(J)B	
2Gb	AS4C256M8D2A-25BxN		MT47H256M8EB-25E	IS43DR82560	W972G88(J)B	

DDR3 1.5V SDRAM

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
512Mb	32M x 16	1.5V	96-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial	AS4C32M16D3-12BxN
512Mb	64M x 8	1.5V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial	AS4C64M8D3-12BxN
1Gb	64M x 16	1.5V	96-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C64M16D3B-12BxN
1Gb	128M x 8	1.5V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C128M8D3B-12BxN
2Gb	128M x 16	1.5V	96-ball FBGA	1066 MHz	2133 Mbps/pin	Commercial	AS4C128M16D3C-93BCN
4Gb	256M x 16	1.5V	96-ball FBGA	800 MHz 933 MHz 1066 MHz	1600 Mbps/pin 1866 Mbps/pin 2133 Mbps/pin	Commercial, Industrial	AS4C256M16D3C-xxBxN

DDR3L 1.35V SDRAM

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
512Mb	32M x 16	1.35V	96-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial	AS4C32M16D3L-12BxN
512Mb	64M x 8	1.35V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial	AS4C64M8D3L-12BxN
1Gb	64M x 16	1.35V	96-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C64M16D3LB/C-12BxN
1Gb	128M x 8	1.35V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C128M8D3LB/C-12BxN
2Gb	128M x 16	1.35V	96-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C128M16D3LC-12BxN
2Gb	256M x 8	1.35V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C256M8D3LC-12BxN
4Gb	256M x 16	1.35V	96-ball FBGA	800 MHz 933 MHz	1600 Mbps/pin 1833 Mbps/pin	Commercial, Industrial, Automotive	AS4C256M16D3LC-xxBxN
4Gb	512M x 8	1.35V	78-ball FBGA	800 MHz	1600 Mbps/pin	Commercial, Industrial, Automotive	AS4C512M8D3LC-12BxN
8Gb	512M x 16	1.35V	96-ball FBGA	933 MHz	1866 Mbps/pin	Commercial, Industrial, Automotive	AS4C512M16D3LA-10BxN
8Gb	512M x 16	1.35V	96-ball FBGA	800 / 933 MHz	1600 / 1866 Mbps/pin	Commercial, Industrial	AS4C512M16D3LB/C-10/12BxN
8Gb	1G x 8	1.35V	78-ball FBGA	933 MHz	1866 Mbps/pin	Commercial, Industrial, Automotive	AS4C1G8D3LA-10BxN

x = Temperature Range | C = 0°C ~ +95°C (Extended) | I = -40°C ~ +95°C | A = -40°C ~ +105°C

DDR3 SDRAM Cross Reference

DENS.	ALLIANCE	MICRON	SAMSUNG	ISSI	HYNIX	WINBOND	ELPIDA
512Mb	AS4C32M16D3-12BxN					W6351G6KB-x	EDJ5316BASE
512Mb	AS4C64M8D3-12BxN						EDJ5308BASE
512Mb	AS4C32M16D3L-12BxN						EDJ5316BASE
512Mb	AS4C64M8D3L-12BxN						EDJ5308BASE
1Gb	AS4C64M16D3B-12BxN	MT41J64M16JT(TW)-125 (EOL)	K4B1G1646E(G)	IS43TR16640	H5TQ1G63D	W631GG6KB-x	EDJ1116DJ(BA) BG
1Gb	AS4C64M16D3LB/C-12BxN	MT41K64M16JT(TW)-125	K4B1G1646E(G)	IS43TR16640A(B)L	H5TC1G63EFR (EOL)	W631GU6KB-x	EDJ1116EJBG
1Gb	AS4C128M8D3B-12BxN	MT41J128M8JP(DA)-125	K4B1G0846E(F,G)	IS43TR81280	H5TQ1G83	W631GG8KB-x	EDJ1108DJ(BA) BG
1Gb	AS4C128M8D3LB/C-12BxN	MT41K128M8JP(DA)-125	K4B1G0846G-BY	IS43TR81280A(B)L	H5TC1G83EFR (EOL)	W631GU8KB-x	EDJ1108EJBG
2Gb	AS4C128M16D3C-93BCN	MT41J128M16JT(TW)-125	K4B2G1646E-B	IS43TR16128	H5TQ2G63	W632GG6KB-x	EDJ2116DEBG
2Gb	AS4C128M16D3LC-12BxN	MT41K128M16JT-125	K4B2G1646Q-B	IS43TR16128A(B,C)L	H5TC2G63	W632GU6KB-x	EDJ2116EEBG
2Gb	AS4C256M8D3LC-12BxN	MT41K256M8DA-125	K4B2G0846Q-BCK	IS43TR82560A-xBL	H5TQ2G83FFR-x	W632GG8KB-x	EDJ2108DEBG
4Gb	AS4C256M16D3C-93BCN AS4C256M16D3C-10BxN AS4C256M16D3C-12BxN	MT41J256M16HA-107 MT41J256M16HA-125	K4B4G1646B(D)	IS43TR16256A	H5TQ4G63	W634GG6MB/ NB	EDJ4216BFBG (BASE)
4Gb	AS4C256M16D3LC-10BxN AS4C256M16D3LC-12BxN	MT41K256M16HA-107/125 MT41K256M16TW-107/125	K4B4G1646E(Q)	IS43TR16256AL	H5TC4G63	W634GU6MB/NB	EDJ4216EFBG
4Gb	AS4C512M8D3LC-12BxN	MT41K512M8DA-125	K4B4G0846B(C,D)	IS43TR85120AL	H5TC4G83	W634GU8MB/NB	EDJ4208EFBG
8Gb	AS4C512M16D3LA-10BxN AS4C512M16D3LC-10BxN	MT41K512M16VRN-107 MT41K512M16VRP-107 MT41K512M16HA-125 (EOL)	K4B8G1646x (EOL)	IS43TR16512	H5TC8G63CMR		
8Gb	AS4C512M16D3LB-12BxN AS4C512M16D3LC-12BxN	MT41K512M16HA-125 (EOL)	K4B8G1646x (EOL)	IS43TR16512	H5TC8G63CMR		
8Gb	AS4C1G8D3LA-10BxN	MT41K1G8SN-107/125:E	K4B8G0846x (EOL)	IS43TR81024	H5TC8G83BMR		
8Gb	MT41K512M16HA-125	MT41K512M16HA-125	K4B8G1646x (EOL)	IS43TR16512	H5TC8G63CMR		

DDR4 SDRAM

DENSITY	ORG	VCC	PACKAGES	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
4Gb	256M x 16	1.2V	96-ball FBGA	1200 MHz 1333 MHz	2400 Mbps/pin 2600 Mbps/pin	Commercial, Industrial	AS4C256M16D4-75/83BxN
4Gb	512M x 8	1.2V	78-ball FBGA	1200 MHz 1333 MHz	2400 Mbps/pin	Commercial, Industrial	AS4C512M8D4-75/83BxN
4Gb	256M x 16	1.2V	96-ball FBGA	1333 MHz 1600 MHz	2666 Mbps/pin 3200 Mbps/pin	Commercial, Industrial	AS4C256M16D4A-62/75BxN
4Gb	512M x 8	1.2V	78-ball FBGA	1333 MHz	2666 Mbps/pin	Commercial, Industrial	AS4C512M8D4A-75BxN
8Gb	512M x 16	1.2V	96-ball FBGA	1333 MHz	2666 Mbps/pin	Commercial, Industrial	AS4C512M16D4-75BxN
8Gb	1G x 8	1.2V	78-ball FBGA	1333 MHz	2666 Mbps/pin	Commercial, Industrial	AS4C1G8D4-75BxN
16Gb	1G x 16	1.2V	96-ball FBGA	1600 MHz	3200 Mbps/pin	Commercial	MT40A1G16KH-062E
16Gb	1G x 16	1.2V	96-ball FBGA	1600 MHz	3200 Mbps/pin	Commercial	AS4C1G16D4-062BCN

DDR4 SDRAM Cross Reference

DENSITY	ORG	ALLIANCE	MICRON	SAMSUNG	HYNIX	ISSI
4Gb	256M x 16	AS4C256M16D4-75/83BxN	MT40A256M16GE	K4A4G165WE	H5AN4G6NBJR	IS43QR16256A/B
4Gb	512M x 8	AS4C512M8D4-75/83BxN	MT40A512M8RH	K4A4G085WE	H5AN4G8NBJR	IS43QR85120B
4Gb	256M x 16	AS4C256M16D4A-62/75BxN	MT40A256M16GE	K4A4G165WE	H5AN4G6NBJR	IS43QR16256A/B
4Gb	512M x 8	AS4C512M8D4A-75BxN	MT40A512M8RH	K4A4G085WE	H5AN4G8NBJR	IS43QR85120B
8Gb	512M x 16	AS4C512M16D4-75BxN	MT40A512M16LY/JY	K4A8G165WB/C	H5AN8G6NCJR	IS43QR16512A
8Gb	1G x 8	AS4C1G8D4-75BxN	MT40A1G8SA/WE	K4A8G085WB/C	H5AN8G8NCJR	IS43QR81024A
16Gb	1G x 16	MT40A1G16KH-062E AS4C1G16D4-062BCN	MT40A1G16KH/KNR	K4AAG165WA-BCWE	H5ANAG6NCMR-XNC H5ANAG6NDRM-XNC	

MOBILE LOW POWER SDRAM

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	TEMPERATURE OPTIONS	ALLIANCE
128Mb	8M x 16	1.7V ~ 1.95V	54-ball FBGA (8 x 8mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C8M16MSA-6BIN
128Mb	4M x 32	1.7V ~ 1.95V	90-ball FBGA (8 x 13mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C4M32MSA-6BIN
256Mb	16M x 16	1.7V ~ 1.95V	54-ball FBGA (8 x 8mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C16M16MSA-6BIN
256Mb	8M x 32	1.7V ~ 1.95V	90-ball FBGA (8 x 13mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C8M32MSA-6BIN
256Mb	8M x 32	1.7V ~ 1.95V	90-ball FBGA (8 x 13mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C8M32MSB-6BIN
512Mb	32M x 16	1.7V ~ 1.95V	54-ball FBGA (8 x 9mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C32M16MSA-6BIN
512Mb	16M x 32	1.7V ~ 1.95V	90-ball FBGA (8 x 13mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C16M32MSA-6BIN
512Mb	16M x 32	1.7V ~ 1.95V	90-ball FBGA (8 x 13mm)	166 MHz	Industrial -40°C ~ +85°C	AS4C16M32MSB-6BIN

MOBILE LOW POWER SDRAM Cross Reference

DENSITY	ALLIANCE	MICRON	ISSI	WINBOND
128Mb	AS4C8M16MSA-6BIN	NA	IS42VM16800H	W987D6HBGX
128Mb	AS4C4M32MSA-6BIN	NA	IS42VM32400H	W987D2HBXJ
256Mb	AS4C16M16MSA-6BIN	MT48H16M16LFBF (EOL)	IS42VM16160K	W988D6FBGX
256Mb	AS4C8M32MSA-6BIN AS4C8M32MSB-6BIN	MT48H8M32LFB5 (EOL)	IS42VM32800K	W988D2FBXJ
512Mb	AS4C32M16MSA-6BIN	MT48H32M16LFB4-6 IT	IS42VM16320E	W989D6DBGX
512Mb	AS4C16M32MSA-6BIN	MT48H16M32LFB5-6 IT	IS42VM32160E	W989D2DBXJ
512Mb	AS4C16M32MSB-6BIN	MT48H16M32LFB5-6 IT	IS42VM32160E	W989D2DBXJ

MOBILE LP DDR1

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
256Mb	16M x 16	1.8V	60-ball FBGA	166 MHz	333Mbps/pin	Extended -30°C ~ +85°C	AS4C16M16MD1-6BCN
512Mb	32M x 16	1.8V	60-ball FPBGA	200 MHz	400Mbps/pin	Extended -30°C ~ +85°C	AS4C32M16MD1A-5BCN
512Mb	16M x 32	1.8V	90-ball FPBGA	200 MHz	400Mbps/pin	Extended -25°C ~ +85°C	AS4C16M32MD1-5BCN
1Gb	64M x 16	1.8V	60-ball FPBGA	200 MHz	400Mbps/pin	Industrial -40°C ~ +85°C	AS4C64M16MD1A-5BIN
1Gb	32M x 32	1.8V	90-ball FPBGA	200 MHz	400Mbps/pin	Industrial -40°C ~ +85°C	AS4C32M32MD1A-5BIN
2Gb	64M x 32	1.8V	90-ball FPBGA	200 MHz	400Mbps/pin	Extended -25°C ~ +85°C	AS4C64M32MD1-5BCN
2Gb	64M x 32	1.8V	90-ball FPBGA	200 MHz	400Mbps/pin	Industrial -40°C ~ +85°C	AS4C64M32MD1A-5BIN

MOBILE LP DDR1 Cross Reference

DENSITY	ALLIANCE	MICRON	SAMSUNG	ISSI	HYNIX	WINBOND
256Mb	AS4C16M16MD1-6BCN	MT46H16M16LFBF-6	K4X56163SPN	IS43LR16160	HY5MS5B6/ H5MS2562	W948D6FBHX
512Mb	AS4C32M16MD1A-5BCN	MT46H32M16LFBF-5	K4X51163PI	IS43R16320B	HY5MS7B6/ H5MS5162	W949D6DBHX
512Mb	AS4C16M32MD1-5BxN	MT46H16M32LFB5-5	K4X51323PI	IS43LR32160B	H5MS5132/ H5MS5122	W949D2DBJX
1Gb	AS4C64M16MD1A-5BIN	MT46H64M16LFBF	K4X1G163PE	IS43LR16640A	H5MS1G62	
1Gb	AS4C32M32MD1A-5BIN	MT46H32M32LFB5-5	K4X1G323PF	IS43LR32320B	H5MS1G22	W94AD2KBJX
2Gb	AS4C64M32MD1-5BCN	MT46H64M32LFB5-5	K4X2G323PC	IS43LR32640A	H5MS2G22	
2Gb	AS4C64M32MD1A-5BIN	MT46H64M32LFB5-5	K4X2G323PC	IS43LR32640A	H5MS2G22	

MOBILE LP DDR2

DENSITY	ORG	VCC	PACKAGE	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	ALLIANCE
256Mb	8M x 32	1.2V/1.8V	134-ball FBGA	400 MHz	800Mbps/pin	Extended -25°C ~ +85°C	AS4C8M32MD2A-25BCN
256Mb	8M x 32	1.2V/1.8V	168-ball FBGA	400 MHz	800Mbps/pin	Extended -25°C ~ +85°C	AS4C8M32MD2A-25BPCN
1Gb	64M x 16	1.2V/1.8V	134-ball FBGA	400 MHz	800Mbps/pin	Industrial -40°C ~ +85°C	AS4C64M16MD2A-25BIN
1Gb	32M x 32	1.2V/1.8V	134-ball FBGA	400 MHz	800Mbps/pin	Industrial -40°C ~ +85°C	AS4C32M32MD2A-25BIN
2Gb	128M x 16	1.2V/1.8V	134-ball FBGA	400MHz	800Mbps/pin	Industrial -40°C ~ +85°C	AS4C128M16MD2A-25BIN
2Gb	64M x 32	1.2V/1.8V	134-ball FBGA	400 MHz	800Mbps/pin	Industrial -40°C ~ +85°C	AS4C64M32MD2A-25BIN
4Gb	128M x 32	1.2V/1.8V	134-ball FBGA	533 MHz	1066Mbps/pin	Industrial -40°C ~ +85°C	AS4C128M32MD2A-18BIN
4Gb	128M x 32	1.2V/1.8V	134-ball FBGA	400 MHz	800Mbps/pin	Industrial -40°C ~ +85°C	AS4C128M32MD2A-25BIN

MOBILE LP DDR2 Cross Reference

DENSITY	ALLIANCE	MICRON	ISSI	WINBOND
256Mb	AS4C8M32MD2A-25BPCN		IS43LD32800A-25BL	W978H2KBVX2E
1Gb	AS4C64M16MD2A-25BIN	MT42L64M16D1HE-25	IS43LD16640C/A	W97AH6KBVX2
1Gb	AS4C32M32MD2A-25BIN	MT42L32M32D1HE-25	IS43LD32320C/A	W97AH2KBVX2
2Gb	AS4C128M16MD2A-25BIN	MT42L128M16D1TK-25	IS43LD16128B	W97BH6KBVX2
2Gb	AS4C64M32MD2A-25BIN	MT42L64M32D1TK-25	IS43LD32640B	W97BH2KBVX2
4Gb	AS4C128M32MD2A-18BIN	MT42L128M32D1GU-18 (EOL)	IS43LD32128A	
4Gb	AS4C128M32MD2A-25BIN	MT42L128M32D1GU-18 (EOL)	IS43LD32128A	

LPDDR4 / LPDDR4X

DENSITY	ORG	PACKAGES	CLOCK FREQ.	DATA RATE	TEMPERATURE OPTIONS	Alliance Memory
2Gb	128M x 16	200b FBGA	1600 MHz	3200 Mbps	Automotive A2 (-40°C to 105°C)	AS4C128M16MD4-062BAN
4Gb	128M x 32	200b FBGA	1600 MHz	3200 Mbps	Automotive A2 (-40°C to 105°C)	AS4C128M32MD4-062BAN
4Gb	256M x 16	200b FBGA	1600 MHz	3200 Mbps	Automotive A2 (-40°C to 105°C)	AS4C256M16MD4-062BAN
8Gb	256M x 32	200b FBGA	1600 MHz	3200 Mbps	Automotive A2 (-40°C to 105°C)	AS4C256M32MD4-062BAN
8Gb	256M x 32	200b FBGA	1600 MHz	3200 Mbps	Automotive A2 (-40°C to 105°C)	AS4C256M32MD4V-062BAN

LPDDR4 / LPDDR4X Cross Reference

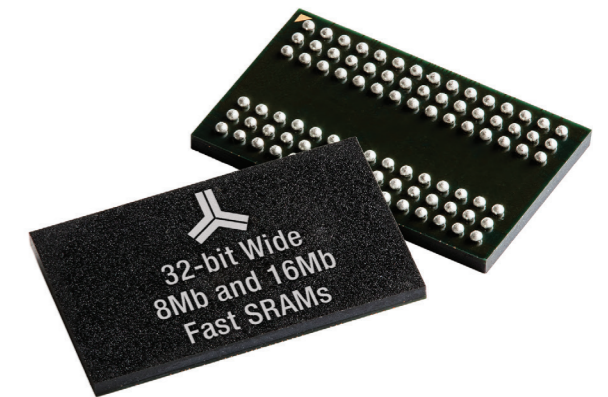
DENS.	ORG	ALLIANCE	MICRON	SAMSUNG	HYNIX	ISSI	WINBOND
2Gb	128M x 16	AS4C128M16MD4-062BAN				IS43/46LQ16128A	W66BP6NB
4Gb	128M x 32	AS4C128M32MD4-062BAN	MT53B128M32D1DS	K4F4E3S4H		IS43/46LQ32128A	W66CP2NQ
4Gb	256M x 16	AS4C256M16MD4-062BAN	MT53E256M16D1DS		H9HCNN4KUMLHR	IS43/46LQ16256A	W66CP6NB
8Gb	256M x 32	AS4C256M32MD4-062BAN	MT53B256M32D1DS	K4F8E3S4H		IS43/46LQ32256A	
8Gb	256M x 32	AS4C256M32MD4V-062BAN	MT53E256M32D2DS	K4U8E3S4AD-GFCL K4U8E3S4AD-GHCL		IS43/46LQ32256AL IS43/46LQ32256EAL	W66DQ2NQU

3.3V FAST ASYNCHRONOUS SRAM

DENSITY	ORG	PACKAGES	SPEED (NS)	ALLIANCE
256Kb	32K x 8	SOJ (28), TSOP I (28)	10/12/15/20	AS7C3256A
512Kb	32K x 16	SOJ (44), TSOP II (44)	10/12/15/20	AS7C3513B
1Mb	128K x 8	SOJ (32.3 & 32.4), TSOP I (32)	10/12/15/20	AS7C31024B
1Mb	128K x 8	SOJ (32.3 & 32.4)	10/12/15/20	AS7C31025B
1Mb	64K x 16	SOJ (44), TSOP II (44)	10/12/15/20	AS7C31026B
2Mb	128K x 16	TSOP II (44)	10/12/15/20	AS7C32098A
2Mb	256K x 8	TSOP II (44)	10/12/15/20	AS7C32096A
4Mb	512K x 8	SOJ (36), TSOP II (44), TFBGA (36)	8/10/12/15/20	AS7C34096A / B
4Mb	256K x 16	SOJ (44), TSOP II (44), TFBGA (48)	8/10/12/15/20	AS7C34098A / B
8Mb	1024K x 8	TFBGA (48), TSOP II (44)	10	AS7C38096A / B
8Mb	512K x 16	TFBGA (48), TSOP II (44)	10	AS7C38098A
8Mb	256K x 32	TFBGA (90)	10	AS7C325632
16Mb	512K x 32	TFBGA (90)	10	AS7C351232
16Mb	1M x 16	TFBGA (48), TSOP I (48), TSOP II (54)	10	AS7C316098A / B
16Mb	2M x 8	TFBGA (48), TSOP I (48), TSOP II (54), TSOP II (44)	10	AS7C316096A / B / C

5V FAST ASYNCHRONOUS SRAM

DENSITY	ORG	PACKAGES	SPEED (NS)	ALLIANCE
64Kb	8K x 8	SOJ (28pin), Skinny PDIP (28pin-300mil)	15	AS7C164A
256Kb	32K x 8	SOJ (28pin), TSOP II (28pin)	10/12/15/20	AS7C256A
256Kb	32K x 8	PDIP (28pin)	15	AS7C256B
512Kb	32K x 16	SOJ (44), TSOP II (44)	12/15	AS7C513B
1Mb	128K x 8	SOJ (32.3 & 32.4), TSOP I (32)	12.15.20	AS7C1024B
1Mb	128K x 8	SOJ (32.3 & 32.4)	10.12.15	AS7C1025B
1Mb	64K x 16	SOJ (44), TSOP II (44)	10/12/15/20	AS7C1026B
4Mb	512K x 8	SOJ (36), TSOP II (44)	12.15.20	AS7C4096A
4Mb	256K x 16	SOJ (44), TSOP II (44)	12.15.20	AS7C4098A



Fast Asynchronous SRAM Cross Reference

64K

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	IDT	ISSI
8K x 8	5V	28pin SOJ (300mil)	15	AS7C164A-15JxN	IDT7164SXXYG	IS61C64AL-XXJLI
8K x 8	5V	28pin Skinny PDIP 300mil	15	AS7C164A-15PxN		

256K

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	SAMSUNG	IDT	ISSI
32K x 8	5V	28pin SOJ	10,12,15,20	AS7C256A-xxJCN/JIN	K6E0808C (EOL)	IDT71256SAXXYG	IS61C256AL-XXJL
32K x 8	5V	28pin TSOP I	10,12,15,20	AS7C256A-xxTCN/TIN		IDT71256SAXXPZG	IS61C256AL-XXTL
32K x 8	3.3V	28pin SOJ	10,12,15,20	AS7C3256A-xxJCN/JIN	K6E0808V	IDT71V256SAXXYG	IS61LV256AL-10JL
32K x 8	3.3V	28pin TSOP I	10,12,15,20	AS7C3256A-xxTCN/TIN		IDT71V256SAXXPZG	IS61LV256AL-10TL
32K x 8	5V	28pin DIP	15	AS7C256B-xxPIN	(EOL)	IDT71256SAXXTPG	

512K

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	ISSI
32K x 16	5V	44pin SOJ (400MIL)	15	AS7C513B-xxJCN	IS61C321AL-12KLI
32K x 16	5V	44pin TSOP II (400MIL)	12,15	AS7C513B-xxTCN	IS61C3216AL-12TLI
32K x 16	3.3V	44pin TSOP II (400MIL)	12,15,20	AS7C3513B-xxTCN	IS61WV3216BLL-12TLI
32K x 16	3.3V	44pin SOJ (400MIL)	10,12,15	AS7C3513B-xxJCN	

1M

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	SAMSUNG (EOL)	IDT	ISSI	GSI (EOL)
128K x 8	5V	32pin SOJ (400MIL)	12,15,20	AS7C1025B-xxJCN/JIN	K6R1008C1D-KI10	IDT71124SXXYG		
128K x 8	3.3V	32pin SOJ (400MIL)	10,12,15,20	AS7C31025B-xxJCN/JIN	K6R1008V1D-KI10	IDT71V124SAXXYG	IS63WV1024L-10KLI	
128K x 8	3.3V	32pin TSOP II	12	AS7C31025C-12TIN	K6R1008V1D-UIXX	IDT71V124SAXXPHG	IS63WV1288DBLL-XXTLI	
128K x 8	5V	32pin SOJ (300MIL)	10,12,15,20	AS7C1025B-xxTJCN				
128K x 8	5V	32pin SOJ (400MIL)	15	AS7C1025B-15JIN				
128K x 8	3.3V	32pin SOJ (400MIL)	12	AS7C31025B-12JIN				
128K x 8	3.3V	32pin SOJ (300MIL)	10,12,15,20	AS7C31025B-xxTJCN		IDT71V124SAXXYG	IS63WV1288DBLL-10JLI	
128K x 8	5V	32pin SOJ (400MIL)	12,15,20	AS7C1024B-xxJCN/JIN		IDT71024SXXYG	IS61C1024AL-12KLI	
128K x 8	5V	32pin TSOP I	12,15,20	AS7C1024B-xxTCN			IS61C1024AL-12TLI	
128K x 8	5V	32pin SOJ (300MIL)	12,15,20	AS7C1024B-xxTJCN		IDT71024SXXTYG	IS61C1024AL-12JLI	
128K x 8	5V	32pinSOJ(300MIL/400MIL)	12	AS7C1024B-12JIN			IS61C1024AL-12KLI	
128K x 8	3.3V	32pin SOJ (400MIL)	12,15,20	AS7C31024B-xxJCN			IS63WV1288DBLL-10KLI	
128K x 8	3.3V	32pin TSOP I	10,12,15,20	AS7C31024B-xxTCN			IS63WV1288DBLL-10HLI	
128K x 8	3.3V	32pin SOJ (300MIL)	10,12,15,20	AS7C31024B-xxTJCN			IS63WV1288DBLL-10JLI	
64K x 16	5V	44pin SOJ (400MIL)	10,12,15,20	AS7C1026B-xxJCN/JIN	K6R1016C1D-KI10	IDT71016SXXYG	IS61C6416AL-12KLI	
64K x 16	5V	44pin TSOP II (400MIL)	10,12,15,20	AS7C1026B-xxTCN/TIN	K6R1016C1D-UI10	IDT71016SXXPHG	IS61C6416AL-12TLI	
64K x 16	3.3V	44pin SOJ (400MIL)	10,12,15,20	AS7C31026B-xxJCN/TIN	K6R1016V1D-KI10	IDT71V016SAXXYG	IS61WV6416DBLL-10KLI	
64K x 16	3.3V	44pin TSOP II (400MIL)	10,12,15,20	AS7C31026B-xxTCN/TIN	K6R1016V1D-UI10	IDT71V016SAXXPHG	IS61WV6416DBLL-10TLI	GS71116AGP-XX

2M

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	ISSI	GSI
128K x 16	3.3V	44pin TSOP II	10,12,15,20	AS7C32098A-xxTxN	IS61WV12816DBLL-10TL	GS72116AGP-XX
256K x 8	3.3V	44pin TSOP II	10,12,15,20	AS7C32096A-xxTxN	IS61WV256EDBLL-10TLI	GS72108AGP-XX

4M

ORG	VCC	PACKAGE	SPEED (NS)	ALLIANCE	SAMSUNG	IDT	ISSI	GSI
512K x 8	5V	36pin SOJ (400MIL)	12,15,20	AS7C4096A-xxJxN	K6R4008C1D-KI10		IS61C5128AL-10KLI	
512K x 8	5V	44pin TSOP II (400MIL)	12,15,20	AS7C4096A-xxTxN	K6R4008C1D-UI10		IS61C5128AL-10TLI	
512K x 8	3.3V	36pin SOJ (400MIL)	8,10,12,15,20	AS7C4096A-xxJxN	K6R4008V1D-KI10	IDT71V424SXXYG	IS61WV5128EDBLL-10KLI	
512K x 8	3.3V	44pin TSOP II (400MIL)	10,12,15,20	AS7C4096A-xxTxN	K6R4008V1D-UI10	IDT71V424SXXPHG	IS61WV5128EDBLL-10TLI	GS74108AGP-XX
512K x 8	2.7 ~ 3.6V	44pin TSOP II	10	AS7C4096B-10TIN				
512K x 8	2.7 ~ 3.6V	36ball TFBGA	10	AS7C4096B-10BIN				
256K x 16	5V	44pin SOJ (400MIL)	12,15,20	AS7C4098A-xxJxN	K6R4016C1D-KI10		IS61C25616AL-10KLI	
256K x 16	5V	44pin TSOP II (400MIL)	12,15,20	AS7C4098A-xxTxN	K6R4016C1D-UI10		IS61C25616AL-10TLI	
256K x 16	3.3V	44pin SOJ (400MIL)	10,12,15,20	AS7C4098A-xxJxN	K6R4016V1D-KI10	IDT71V416SXXYG	NA	
256K x 16	3.3V	44pin TSOP II (400MIL)	8,10,12,15,20	AS7C4098A-xxTxN	K6R4016V1D-UI10	IDT71V416SXXPHG	IS61WV25616EDBLL-10TLI	GS74116AGP-XX
256K x 16	3.3V	48ball TFBGA	10	AS7C4098A-xxBIN		IDT71V416SXXBE	IS61WV25616EDBLL-10BLI	GS75116AGX-XX
256K x 16	2.7 ~ 3.6V	44pin TSOP II	10	AS7C4098B-10TIN				
256K x 16	2.7 ~ 3.6V	48ball TFBGA	10	AS7C4098B-10BIN				

8M

ORG	VCC	PACKAGE	SPEED	ALLIANCE	ISSI
512K x 16	3.3V	44pin TSOP II	10 (NS)	AS7C38098A-10TIN	IS61WV51216BLL-XXTLI
512K x 16	3.3V	48ball TFBGA	10 (NS)	AS7C38098A-10BIN	IS61WV51216BLL-10MLI
256K x 32	3.3V	90ball TFBGA	10 (NS)	AS7C325632-10BIN	IS61WV25632BLL-10BLI
1M x 8	3.3V	44pin TSOP II	10 (NS)	AS7C38096A-10TIN	IS61WV10248BLL-10TLI
1M x 8	3.3V	48ball TFBGA (diff. pinout)	10 (NS)	AS7C38096A-10BIN	
1M x 8	3.3V	48ball TFBGA (diff. pinout)	10 (NS)	AS7C38096B-10BIN	IS61WV10248BLL-10MLI

16M

ORG	VCC	PACKAGE	SPEED	ALLIANCE	ISSI
1M x 16	3.3V	48pin TSOP I	10 (NS)	AS7C316098A-10TIN	IS61WV102416FBLL-10TLI
1M x 16	3.3V	48ball TFBGA	10 (NS)	AS7C316098A-10BIN	IS61WV102416FBLL-10BLI
1M x 16	3.3V	54pin TSOP II	10 (NS)	AS7C316098B-10TIN	IS61WV102416FBLL-10T2LI
1M x 16	3.3V	48ball TFBGA	10 (NS)	AS7C316098B-10BIN	
2M x 8	3.3V	48pin TSOP I	10 (NS)	AS7C316096A-10TIN	
2M x 8	3.3V	54pin TSOP II	10 (NS)	AS7C316096B-10TIN	IS61WV20488FBLL-10T2LI
2M x 8	3.3V	44pin TSOP II	10 (NS)	AS7C316096C-10TIN	IS61WV20488FBLL-10TLI
2M x 8	3.3V	48ball TFBGA (1CE)	10 (NS)	AS7C316096C-10BIN	IS61WV20488FBLL-10BLI
2M x 8	3.3V	48ball TFBGA (2CE)	10 (NS)	AS7C316096B-10BIN	
512K x 32	3.3V	90ball TFBGA	10 (NS)	A7C351232-10BIN	IS61WV51232BLL-10BLI

2.7V- 3.6V LOW POWER SRAMS

DENSITY	ORG	VCC	PACKAGES	SPEED	ALLIANCE
256Kb	32K x 8	2.5 ~ 3.6V	28pin SOP (330mm)	70 (NS)	AS62V256A
1Mb	64Kx16 with ECC	2.7 ~ 3.6V	44pin TSOP II	45 (NS)	AS6CE1016A
2Mb	256K x 8	2.7 ~ 3.6V	32pin 450 mil SOP, 32pin TSOP I (8 x 20mm), 32pin STSOP (8 x 13.4mm), 36ball TFBGA (6 x 8mm)	55 (NS)	AS6C2008
4Mb	256Kx16 with ECC	2.7 ~ 3.6V	44pin TSOP II, 48ball TFBGA	45 (NS)	AS6CE4016B
8Mb	1M x 8	2.7 ~ 3.6V	48ball TFBGA (8 x 10mm)	45/55 (NS)	AS6C8008A
8Mb	1M x 8	2.7 ~ 3.6V	44pin TSOP II	45/55 (NS)	AS6C8008B
8Mb	512K x 16	2.7 ~ 3.6V	44pin TSOP II / 48pin TSOP I, 48ball TFBGA (8 x 10mm)**	45/55 (NS)	AS6C8016B
16Mb	1M x 16	2.7 ~ 3.6V	48ball TFBGA (6 x 8mm), 48pin TSOP I (12 x 20mm)	45/55 (NS)	AS6C1616/ AS6C1616B
16Mb	2M x 8	2.7 ~ 3.6V	44pin TSOP II, 48ball TFBGA	45 (NS)	AS6C1608B
32Mb	2M x 16	2.7 ~ 3.6V	48pin TSOP I (12 x 20mm), 48ball FBGA (6x8mm)	55 (NS)	AS6C3216A
64Mb	4M x 16 / 8M x 8	2.7 ~ 3.6V	48pin TSOP, 48ball FBGA(6x8mm) (dual chip select 4M x 16 or 8M x 8)	55 (NS)	AS6C6416

2.7V - 5.5V LOW POWER SRAMS

DENSITY	ORG	VCC	PACKAGES	SPEED	ALLIANCE
64Kb	8K x 8	2.7 ~ 5.5V	28pin 600 mil PDIP, 28pin 330 mil SOP, 28pin sTSOP (8x13.4mm)	55 (NS)	AS6C6264
256Kb	32K x 8	2.7 ~ 5.5V	28pin 600 mil PDIP, 28pin 330 mil SOP, 28pin sTSOP (8x13.4mm)	55 (NS)	AS6C62256
1Mb	64K x 16	2.7 ~ 5.5V	44pin 400 mil TSOP II TFBGA (48)	55 (NS)	AS6C1016
1Mb	128K x 8	2.7 ~ 5.5V	32pin 450 mil SOP, 32pin TSOP I (8 x 20mm), 32pin sTSOP (8 x 13.4mm), TFBGA (36), 32pin PDIP	55 (NS)	AS6C1008
2Mb	256K x 8	2.7 ~ 5.5V	32pin 450 mil SOP, 32pin TSOP I (8 x 20mm) 32pin sTSOP (8 x 13.4mm), TFBGA (36)	55 (NS)	AS6C2008A
2Mb	128K x 16	2.7 ~ 5.5V	44pin 400 mil TSOP II, TFBGA (48)	55 (NS)	AS6C2016
4Mb	512K x 8	2.7 ~ 5.5V	32pin 450 mil SOP, 32pin TSOP I (8 x 20mm), 32pin sTSOP (8 x 13.4mm), TFBGA (48), 32pin 600 mil PDIP, 32pin TSOP II	55 (NS)	AS6C4008
4Mb	256K x 16	2.7 ~ 5.5V	44pin TSOP II, TFBGA (48)	55 (NS)	AS6C4016
8Mb	1024K x 8	2.7 ~ 5.5V	44pin TSOP II, TFBGA (48)	55 (NS)	AS6C8008
8Mb	512K x 16	2.7 ~ 5.5V	44pin TSOP II, 48ball TFBGA (6 x 8mm*) one chip select pins:B5**	55 (NS)	AS6C8016

Low Power Asynchronous SRAM Cross Reference

64K

ORG	VCC	PACKAGE	ALLIANCE	ZMD	HITACHI (EOL)	NEC (EOL)	HYNIX (EOL)
8K x 8	2.7V ~ 5.5V	28pin 600mil DIP	AS6C6264-55PCN	U6264BDC07LLG1	HM6264BLP		HY6264P
8K x 8	2.7V ~ 5.5V	28pin 330mil SOP	AS6C6264-55SCN	U6264BS2C07LLG1	HM6264BLFP	uPD4464	HY6264G
8K x 8	2.7V ~ 5.5V	28pin STSOP (8 x 13.4 mm)	AS6C6264-55TCN				

256K

ORG	VCC	PACKAGE	ALLIANCE	ZMD	SAMSUNG (EOL)	RENESAS	BRILLIANCE (EOL)	ISSI
32K x 8	2.7V ~ 5.5V	28pin 600mil DIP	AS6C62256-55PCN	U62256ADC07LLG1	K6X0808C1D-DF55		BS62LV256PCP-55	
32K x 8	2.7V ~ 5.5V	28pin 330mil SOP	AS6C62256-55SxN	U62256AS2C07LLG1	K6X0808C1D-BF55	R1LP5256ESP-5S	BS62LV256SCP-55	IS62C256AL-45ULI
32K x 8	2.5V ~ 3.6V	28pin 330mil SOP	AS62V256-70SIN			R1LV5256ESP-5S	BS62LV256SCP-55	IS62LV256AL-45ULI
32K x 8	2.7V ~ 5.5V	28pin STSOP (8 x 13.4 mm)	AS6C62256-55STxN		K6X0808C1D-LF55	R1LP5256ESA-5S	BS62LV256STCP-55	IS62LV256AL-45TLI

1M

ORG	VCC	PACKAGE	ALLIANCE	SAMSUNG (EOL)	RENESAS	BRILLIANCE (EOL)	NEC (EOL)	ISSI
128K x 8	2.7V ~ 5.5V	32pin 600mil DIP	AS6C1008-55PCN	K6X1008C2D-DB55		BS62LV1027PCP-55	uPD431000ACZ-70L	
128K x 8	2.7V ~ 5.5V	32pin 450mil SOP	AS6C1008-55SIN	K6X1008C2D-GF55 (Lead)/BF	M5M51008DFP-55HI R1LP0108ESP-5SI	BS62LV1027SIP-55	uPD431000AGW-70L	IS62C1024AL-35QLI
128K x 8	2.7V ~ 5.5V	32pin TSOP I (8 x 20 mm)	AS6C1008-55TIN	K6X1008C2D-TF55 or PF	M5M51008DVP-55HI R1LP0108ESF-5SI	BS62LV1027TIP-55	uPD431000AGZ-70LL-KKH	IS62C1024AL-35TLI
128K x 8	2.7V ~ 5.5V	32pin STSOP (8 x 13.4 mm)	AS6C1008-55STIN		M5M51008DKV-55HI R1LP0108ESA-5SI	BS62LV1027STIP-55	uPD431000AGU-B10-9JH	IS62C1024AL-45HLI
64K x 16	2.7V ~ 5.5V	48ball TFBGA	AS6C1016-55BIN	K6F1016U4C-EF55		BS616LV1010AI-70		IS62WV6416DBLL-45BLI
64K x 16	2.7V ~ 5.5V	44pin TSOP II	AS6C1016-55ZIN			BS616LV1010EI-70		IS62WV6416DBLL-45TLI
64K x 16	2.7V ~ 3.6V	44pin TSOP II	AS6CE1016A-45ZIN			BS616LV1010EI-70		IS62WV6416DBLL-45TLI

2M

ORG	VCC	PACKAGE	ALLIANCE	SAMSUNG (EOL)	RENESAS	BRILLIANCE (EOL)	ISSI
256K x 8	3.3V	32pin 450mil SOP	AS6C2008-55SIN			BS62LV2006SIP-55	
256K x 8	3.3V	32pin TSOP I (8 x 20 mm)	AS6C2008-55TIN			BS62LV2006TIP-55	IS62WV2568BLL-55TLI
256K x 8	3.3V	32pin STSOP (8 x 13.4 mm)	AS6C2008-55STIN	K6F2008V2E-LF70000	M5M5V208AKV-55HI R1LV0208BSA-5SI	BS62LV2006STIP-55	IS62WV2568BLL-55HLI
256K x 8	3.3V	36ball TFBGA (6mm x 8mm)	AS6C2008-55BIN				IS62WV2568BLL-55B2LI
128K x 16	2.7V ~ 5.5V	44pin TSOP II	AS6C2016-55ZIN		M5M5V216ATP-70HI R1LV0216BSB-5SI	BS616LV2016EIP-55	IS62WV12816BLL-55TLI
128K x 16	3.3V	48ball TFBGA	AS6C2016-55BIN	K6F2016U4E-EF55000		BS616LV2016AIG-55	IS62WV12816BLL-55B2LI
256K x 8	2.7V ~ 5.5V	32pin 450mil SOP	AS6C2008A-55SIN			BS62LV2006SIP-55	
256K x 8	2.7V ~ 5.5V	32pin TSOP I (8 x 20mm)	AS6C2008A-55TIN			BS62LV2006TIP-55	IS62WV2568BLL-55TLI
256K x 8	2.7V ~ 5.5V	36ball TFBGA (6mm x 8mm)	AS6C2008A-55BIN				IS62WV2568BLL-55B2LI

4M

ORG	VCC	PACKAGE	ALLIANCE	SAMSUNG (EOL)	RENESAS	BRILLIANCE (EOL)	ISSI
512K x 8	2.7 ~ 5.5V	32pin 600mil DIP	AS6C4008-55PCN	K4X4008C1F-DB55		BS62LV4006PCP-55	
512K x 8	2.7 ~ 5.5V	32pin 450mil SOP	AS6C4008-55SIN	K6X4008C1F-GF55 or BF	R1LV0408CSP-5SI	BS62LV4006SIP-55	IS62C5128BLL-45QLI
512K x 8	2.7 ~ 5.5V	32pin TSOP I (8 x 20mm)	AS6C4008-55TIN			BS62LV4006ECP-55	IS62WV5128EBLL-45QLI
512K x 8	2.7 ~ 5.5V	32pin STSOP (8 x 13.4mm)	AS6C4008-55STIN	K6X4008T1F-YF55 or LF	R1LV0408DSA-5SI	BS62LV4006STIP-55	IS62C512BL-45HLI IS62WV5128DBLL-45HLI
512K x 8	2.7 ~ 5.5V	32pin TSOP II	AS6C4008-55ZIN	K6X4008C1F-VF55	R1LV0408DSB-5SI	BS62LV4006ECP55	IS62WV5128DBLL-45T2LI
512K x 8	2.7 ~ 5.5V	36pin TFBGA (6mm x 8mm)	AS6C4008-55BIN		R1LV0408DBG-5SI		IS62WV5128EBLL-45BLLI
256K x 16	2.7 ~ 5.5V	44pin TSOP II	AS6C4016-55ZIN	K6X4016C3F-TF70000		BS616LV4017EIP-55	IS62WV5128BLL-55TLI
256K x 16	2.7 ~ 3.6V	44pin TSOP II	AS6CE4016B-45ZIN	K6X4016T3F-TF70000	R1LV0414DSB-5SI	BS616LV4017EIP-55	IS62C25616BL-45T2LI
256K x 16	2.7 ~ 3.6V	48ball TFBGA	AS6CE4016B-45BIN	K6F4016U6G-EF70000	RMLV0416EGBG-4S2	BS616LV4017AIP-55	IS62WV25616DBLL-45BLLI

8M

ORG	VCC	PACKAGE	ALLIANCE	SAMSUNG (EOL)	RENESAS	BRILLIANCE (EOL)	ISSI
1M x 8	2.7 ~ 5.5V	44pin TSOP II	AS6C8008-55ZIN	K6X8008(C/T)2B-UF55	R1LV0808ASB-5SI HM62V8100LTTI-5SL	BS62LV8001ECP-55	IS62WV1024BLL-55TLI
1M x 8	2.7 ~ 3.6V	44pin TSOP II	AS6C8008B-45ZIN	K6X8008(C/T)2B-UF55	R1LV0808ASB-5SI HM62V8100LTTI-5SL	BS62LV8001ECP-55	IS62WV1024BLL-55TLI
1M x 8	2.7 ~ 5.5V	48ball TFBGA	AS6C8008-55BIN		EOL HM62V8100LBPI-5SL	BS62LV8001ECP-55	IS62WV1024BLL-55MLI
1M x 8	2.7 ~ 3.6V	48ball TFBGA	AS6C8008A-45BIN		EOL HM62V8100LBPI-5SL	BS62LV8001FIP-55	IS62WV1024BLL-55MLI
512K x 16	2.7 ~ 5.5V	48ball TFBGA (6 x 8mm)*	AS6C8016-55BIN*	K6F8016U6G-FF55	M5M5W816WG-55HI R1LV0816ABG-5SI	BS616LV8017ECP55	IS62WV51216BLL-55BLLI
512K x 16	2.7 ~ 3.6V	48ball TFBGA (8 x 10mm)**	AS6C8016B-45BIN**				
512K x 16	2.7 ~ 5.5V	44pin TSOP II	AS6C8016-55ZIN	K6X8016(C/T)3B-UF55	M5M5W816TP-55HI R1LV0816ASA-5SI HM62165114LTT-5SL	BS616LV8017FCP70	IS62WV51216BLL-55T2LI
512K x 16	2.7 ~ 3.6V	44pin TSOP II	AS6C8016B-45ZIN				IS62WV51216BLL-55T2LI
512K x 16	2.7 ~ 5.5V	48pin TSOP I	AS6C8016-55TIN				IS62WV51216GBLL-45TLI

* = one chip select pin: B5 ** = two chip select pins: B5 and A6

16M

ORG	VCC	PACKAGE	ALLIANCE	RENESAS	BRILLIANCE (EOL)	ISSI
1M x 16	2.7 ~ 3.6V	48pin TSOP I	AS6C1616B-45TIN	R1LV1616RSA-5SI	BS6216LV1611TCP55	
1M x 16	2.7 ~ 3.6V	48pin TSOP I	AS6C1616-55TIN	R1LV1616RSA-5SI	BS6216LV1611TCP55	
1M x 16	2.7 ~ 3.6V	48ball TFBGA	AS6C1616B-45BIN	R1LV1616HGB-4SI		IS62WV102416EBLL-55BLLI
2M x 8	2.7 ~ 3.6V	44pin TSOP I	AS6C1608B-45TIN		BS6216LV1600EIP55	IS62WV2048EBLL-55BLLI
2M x 8	2.7 ~ 3.6V	48ball TFBGA	AS6C1608B-45BIN			

32M

ORG	VCC	PACKAGE	ALLIANCE	RENESAS
2M x 16	2.7 ~ 3.6V	48pin TSOP I	AS6C3216A-55TIN*	R1LV3216RSA-5SI
2M x 16	2.7 ~ 3.6V	48ball TFBGA	AS6C3216-55BIN AS6C3216A-55BIN	R1LV3216CSA-5SI

*48pin TSOP I (please note: dual chip select 2Mx16 or 4Mx8)

64M

ORG	VCC	PACKAGE	ALLIANCE	RENESAS
4M x 16	2.7V ~ 3.6V	48pin TSOP I	AS6C6416-55TIN	R1WV6416RSA-5S
4M x 16	2.7V ~ 3.6V	48ball BGA	AS6C6416-55BIN	R1WV6416RBG-5S

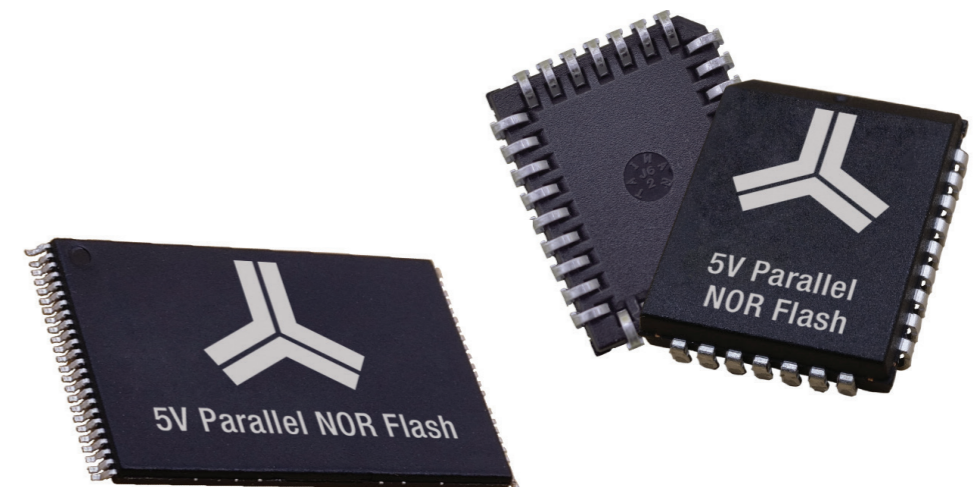
*48pin TSOP I (please note: dual chip select 4Mx16 or 8Mx8)

Parallel 5V NOR Flash

DENSITY	BUS WIDTH	VCC	PACKAGES	TEMP. RANGE	SPEED (NS)	ALLIANCE	REMARKS
1Mb	x8	5V	PLCC 32	-40C to 85C	55	AS29CF010-55CCIN	Uniform Sector, Industrial Grade
2Mb	x8, x16	5V	SOP 44pin	-40C to 125C	55	M29F200FB55M3F2	Bottom Boot, Automotive Grade3
4Mb	x8	5V	PLCC 32	-40C to 85C	55	AS29CF040-55CCIN	Uniform Sector, Industrial Grade
4Mb	x8, x16	5V	SOP 44pin	-40C to 125C	55	M29F400FB55M3F2	Bottom Boot, Automotive Grade3
4Mb	x8, x16	5V	TSOP I 48pin	-40C to 85C	55	M29F400FT5AN6E2	Top Boot, Automotive Grade6
4Mb	x8, x16	5V	TSOP I 48pin	-40C to 125C	55	M29F400FB55N3E2 M29F400FB55N3F2	Bottom Boot, Automotive Grade3
8Mb	x8, x16	5V	TSOP I 48pin	-40C to 85C	55	AS29CF800T-55TIN	Top Boot, Industrial Grade
8Mb	x8, x16	5V	TSOP I 48pin	-40C to 85C	55	AS29CF800B-55TIN	Bottom Boot, Industrial Grade
8Mb	x8, x16	5V	TSOP I 48pin	-40C to 85C	55	M29F800FB5AN6E2 M29F800FB5AN6F2	Bottom Boot, Automotive Grade6
8Mb	x8, x16	5V	TSOP.I 48pin	-40C to 125C	55	M29F800FT55N3E2	Top Boot, Automotive Grade3
8Mb	x8, x16	5V	SOP 44pin	-40C to 125C	55	M29F800FB55M3F2	Bottom Boot, Automotive Grade3
16Mb	x8, x16	5V	TSOP.I 48pin	-40C to 85C	55	AS29CF160B-55TIN	Bottom Boot, Industrial Grade
16Mb	x8, x16	5V	TSOP.I 48pin	-40C to 85C	55	AS29CF160T-55TIN	Top Boot, Industrial Grade
16Mb	x8, x16	5V	TSOP.I 48pin	-40C to 85C	55	M29F160FB5AN6F2	Bottom Boot, Automotive Grade6
16Mb	x8, x16	5V	TSOP.I 48pin	-40C to 125C	55	M29F160FT55N3E2	Top Boot, Automotive Grade3

Parallel 5V NOR Flash Cross Reference

DENSITY	VCC	PACKAGE	SPEED (NS)	ALLIANCE	Micron	Macronix
1Mb	5V	PLCC 32	55	AS29CF010-55CCIN		
2Mb	5V	SOP 44pin	55	M29F200FB55M3F2	M29F200F	MX29F200CBM* (EOL)
4Mb	5V	PLCC 32	55	AS29CF040-55CCIN	M29F040	MX29F040C
4Mb	5V	SOP 44pin	55	M29F400FB55M3F2	M29F400F	MX29F400CBM* (EOL)
4Mb	5V	TSOP 48pin	55	M29F400FB55N3E2 M29F400FB55N3F2	M29F400F	MX29F400CBT
4Mb	5V	TSOP 48pin	55	M29F400FT5AN6E2	M29F400F	MX29F400CTT
8Mb	5V	TSOP 48pin	55	AS29CF800T-55TIN	M29F800F	MX29F800C T/B
8Mb	5V	TSOP 48pin	55	AS29CF800B-55TIN	M29F800F	MX29F800C T/B
8Mb	5V	TSOP 48pin	55	M29F800FB5AN6E2 M29F800FB5AN6F2	M29F800F	MX29F800CBT
8Mb	5V	TSOP 48pin	55	M29F800FT55N3E2	M29F800F	MX29F800CTT
8Mb	5V	SOP 44pin	55	M29F800FB55M3F2	M29F800F	MX29F800CBM* (EOL)
16Mb	5V	TSOP 48pin	55	AS29CF160T-55TIN	M29F160F	
16Mb	5V	TSOP 48pin	55	AS29CF160B-55TIN	M29F160F	
16Mb	5V	TSOP 48pin	55	M29F160FB5AN6F2	M29F160F	
16Mb	5V	TSOP 48pin	55	M29F160FT55N3E2	M29F160F	



Serial NOR Flash

DENSITY	BUS WIDTH	VCC	PACKAGES	TEMP. RANGE	SPEED (MHz)	ALLIANCE	REMARKS
2Mb	x1	3V	8pin SOIC Narrow body	-40C to 85C	75	M45PE20-VMN6P	PAGE ERASABLE, 2Mb Serial Flash (256K x 8bits, 1024 pages, 4 Sectors), Industrial Grade
8Mb	x1	3V	8pin DFN (6mm x 5mm)	-40C to 85C	75	M45PE80-VMP6TG	PAGE ERASABLE 8Mb Serial Flash (1K x 8bits, 4096 pages, 16 Sectors), Industrial Grade, T&R
16Mb	x1	3V	8pin SOIC Wide body	-40C to 85C	75	M45PE16-VMW6TG	PAGE ERASABLE, 16MB Serial Flash (2K x 8bits, 8192 pages, 32 Sectors), Industrial Grade
32Mb	x1/x2/x4	3V	8pin DFN (4 x 3mm)	-40C to 125C	108	N25Q032A13EF4A0F	32Mb Serial NOR Flash, Multiple IO, 64 Sectors, 4KB Sector Erase, Automotive Grade T&R
32Mb	x1/x2/x4	3V	8pin SOIC Narrow body	-40C to 85C	108	N25Q032A13ESC40F	32Mb Serial NOR Flash, Multiple IO, 64 Sectors, 4KB Sector Erase, Industrial Grade, T&R
32Mb	x1/x2/x4	3V	8pin SOIC Narrow body	-40C to 85C	108	N25Q032A13ESCA0G	32Mb Serial NOR Flash, Multiple IO, 64 Sectors, 4KB Sector Erase, Industrial Grade, Tube
32Mb	x1/x2/x4	3V	8pin SOIC Narrow body	-40C to 125C	108	N25Q032A13ESCA0F	32Mb Serial NOR Flash, Multiple IO, 64 Sectors, 4KB Sector Erase, Automotive Grade, T&R
32Mb	x1/x2/x4	3V	16pin SOIC Wide body	-40C to 125C	108	N25Q032A13ESFA0F	32Mb Serial NOR Flash, Multiple IO, 64 Sectors, 4KB Sector Erase, Automotive Grade, T&R
64Mb	x1/x2/x4	1.8V	8pin SOIC Wide body	-40C to 125C	108	N25Q064A11ESEA0F	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Automotive Grade T&R
64Mb	x1/x2/x4	3V	8pin DFN (6mm x 5mm)	-40C to 85C	108	N25Q064A13EF640E	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Industrial Grade, Tray
64Mb	x1/x2/x4	3V	8pin DFN (8mm x 6mm)	-40C to 125C	108	N25Q064A13EF8A0E	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Automotive Grade Tray
64Mb	x1/x2/x4	3V	8pin DFN (8mm x 6mm)	-40C to 125C	108	N25Q064A13EF8A0F	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Automotive Grade T&R
64Mb	x1/x2/x4	3V	8pin DFN (8mm x 6mm)	-40C to 85C*	108	N25Q064A13EF8H0E	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Industrial Grade High Reliability, Tray
64Mb	x1/x2/x4	3V	16pin SOIC Wide body	-40C to 125C	108	N25Q064A13ESFA0F	64Mb Serial NOR Flash, Multiple IO, 128 Sectors, 4KB Sector Erase, Automotive Grade T&R
64Mb	x1/x2/x4	3V	8pin SOIC (209mils)	-40C to 85C	104	AS25F364MQ-10SIN	64Mb, 3V Serial NOR Flash, Multiple IO, Default Feature1, Industrial Grade, 8SOIC Wide Body Package
64Mb	x1/x2/x4	3V	8L WSON (6x5mm)	-40C to 85C	104	AS25F364MQ-10WIN	64Mb, 3V Serial NOR Flash, Multiple IO, Default Feature1, Industrial Grade, 8WSON Package
128Mb	x1/x2/x4	1.8V	8pin SOIC (209mils)	-40C to 85C	133	AS25F128MQ-70SIN	128Mb, 1.8V Serial NOR Flash, Multiple IO, Default Feature1, Industrial Grade, 8SOIC Wide Body Package
128Mb	x1/x2/x4	1.8V	8L WSON (6x5mm)	-40C to 85C	133	AS25F128MQ-70WIN	128Mb, 1.8V Serial NOR Flash, Multiple IO, Default Feature1, Industrial Grade, 8WSON Package

Serial NOR Flash Cross Reference

DENS.	VCC	PACKAGES	ALLIANCE	MICRON	WINBOND	ADESTO	SPANSION	MACRONIX	ISSI	GigaDevices
2Mb	3V	8pin SOIC Narrow body	M45PE20-VMN6P			AT45DB021E				
8Mb	3V	8pin DFN (6mm x 5mm)	M45PE80-VMP6TG			AT45DB081E				
16Mb	3V	8pin SOIC Wide body	M45PE16-VMW6TG			AT45DB161E				
32Mb	3V	8pin DFN (4mm x 3mm)	N25Q032A13EF4A0F		W25Q32	AT25DF32/AT25SF32	S25FL032A/P	MX25L32	IS25LP032 / IS25LQ032	GD25Q32
32Mb	3V	8pin SOIC Narrow body	N25Q032A13ESC40F		W25Q32	AT25DF32/AT25SF32	S25FL032A/P	MX25L32	IS25LP032 / IS25LQ032	GD25Q32
32Mb	3V	8pin SOIC Narrow body	N25Q032A13ESCA0G		W25Q32	AT25DF32/AT25SF32	S25FL032A/P	MX25L32	IS25LP032 / IS25LQ032	GD25Q32
32Mb	3V	8pin SOIC Narrow body	N25Q032A13ESCA0F		W25Q32	AT25DF32/AT25SF32	S25FL032A/P	MX25L32	IS25LP032 / IS25LQ032	GD25Q32
32Mb	3V	16pin SOIC Wide body	N25Q032A13ESFA0F		W25Q32	AT25DF32/AT25SF32	S25FL032A/P	MX25L32	IS25LP032 / IS25LQ032	GD25Q32
64Mb	1.8V	8pin SOIC Wide body	N25Q064A11ESEA0F		W25Q64	AT25SL64/AT25QL64		MX25U64	IS25WP064	GD25LQ64
64Mb	3V	8pin DFN (6mm x 5mm)	N25Q064A13EF640E		W25Q64	AT25SF64/AT25QF64	S25FL064A/P	MX25L64	IS25LP064	GD25Q64
64Mb	3V	8pin DFN (8mm x 6mm)	N25Q064A13EF8A0E		W25Q64	AT25SF64/AT25QF64	S25FL064A/P	MX25L64	IS25LP064	GD25Q64
64Mb	3V	8pin DFN (8mm x 6mm)	N25Q064A13EF8A0F		W25Q64	AT25SF64/AT25QF64	S25FL064A/P	MX25L64	IS25LP064	GD25Q64
64Mb	3V	8pin DFN (8mm x 6mm)	N25Q064A13EF8H0E		W25Q64	AT25SF64/AT25QF64	S25FL064A/P	MX25L64	IS25LP064	GD25Q64
64Mb	3V	16pin SOIC Wide body	N25Q064A13ESFA0F		W25Q64	AT25SF64/AT25QF64	S25FL064A/P	MX25L64	IS25LP064	GD25Q64
64Mb	3V	8pin SOP (209mils)	AS25F364MQ-10SIN	N25Q064A13ESE	W25Q64	AT25QF64	S25FL064	MX25L64	IS25LP064	GD25Q64
64Mb	3V	8L WSON (6x5mm)	AS25F364MQ-10WIN	N25Q064A13EF6	W25Q64	AT25QF64	S25FL064	MX25L64	IS25L064	GD25Q64
128Mb	1.8V	8pin SOP (209mils)	AS25F1128MQ-70SIN	MT25QU128ABA1ESE	W25Q128JWSIM	AT25SL128A-SUE	S25FS128SDSMFI	MX25U12832FM2I	IS25WP128-JBLE	GD25LB128ESIG
128Mb	1.8V	8L WSON (6x5mm)	AS25F1128MQ-70WIN	MT25QU128ABA1EW7	W25Q128JWPIM	AT25SL128A-MHE	S25FS128SDSNFI	MX25U12832FZNI	IS25WP128-JKLE	GD25LB128EWIG

Serial NAND Flash

DENSITY	BUS WIDTH	SPEED (NS)	VCC	PACKAGES	TEMPERATURE RANGE	TYPE	ALLIANCE
1Gb	x1, x2, x4	120 Mhz	3V	LGA 8pin	Industrial (-40°C to 85°C)	4bit ECC, (2048 + 64) bytes × 64 pages × 1024 blocks	AS5F31G04SND-08LIN
2Gb	x1, x2, x4	100 Mhz	1.8V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (2048 + 128) bytes × 64 pages × 2048 blocks	AS5F12G04SND-10LIN
2Gb	x1, x2, x4	120 Mhz	3V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (2048 + 128) bytes × 64 pages × 2048 blocks	AS5F32G04SND-08LIN
4Gb	x1, x2, x4	100 Mhz	1.8V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (2048 + 128) bytes × 64 pages × 4096 blocks	AS5F14G04SND-10LIN
4Gb	x1, x2, x4	120 Mhz	3V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (2048 + 128) bytes × 64 pages × 4096 blocks	AS5F34G04SND-08LIN
8Gb	x1, x2, x4	100 Mhz	1.8V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (4096 + 256) bytes × 64 pages × 4096 blocks	AS5F18G04SND-10LIN
8Gb	x1, x2, x4	120 Mhz	3V	LGA 8pin	Industrial (-40°C to 85°C)	8bit ECC, (4096 + 256) bytes × 64 pages × 4096 blocks	AS5F38G04SND-08LIN

Serial NAND Flash Cross Reference

DENSITY	SPEED (NS)	ALLIANCE	Toshiba/KIOXIA	Micron	Winbond	Macronix	GigeDevices
1Gb	120Mhz	AS5F31G04SND-08LIN	TC58CVG0S3HRAIJ	MT29F1G01ABAFDWB-IT	W25N01GV	MX35LF1GE4AB	GD5F1GQ4UB/C/EFxxx
2Gb	100Mhz	AS5F12G04SND-10LIN	TC58CYG1S3HRAIJ	MT29F2G01ABBGDWB-IT:G	W25N02JW	MX35UF2G14AC	GD5F2GQ4Rx
2Gb	120Mhz	AS5F32G04SND-08LIN	TC58CVG1S3HRAIJ	MT29F2G01ABAGDWB-IT	W25M02GV	MX35LF2G14AC	GD5F2GQ4Ux
4Gb	100Mhz	AS5F14G04SND-10LIN	TC58CYG2S0HRAIJ	MT29F4G01ABFDWB-IT	W25N04KW	MX35UF4Gx4AD	GD5F4GQ6Rx
4Gb	120Mhz	AS5F34G04SND-08LIN	TC58CVG2S0HRAIJ	MT29F4G01ABAFDWB	W25N04KV	MX35LF4G24AD	GD5F4GQ6Ux
8Gb	100Mhz	AS5F18G04SND-10LIN	TH58CYG3S0HRAIJ				
8Gb	120Mhz	AS5F38G04SND-08LIN	TH58CVG3S0HRAIJ				

eMMC

DENSITY	VCC	VCCQ	CLOCK FREQ.	Package	NAND Type	TEMPERATURE OPTIONS	Alliance Memory
4GB	2.7V-3.6V	1.8V / 3.3V	200 MHz	153b FBGA	MLC	Industrial(-40°C to 85°C)	ASFC4G31M-51BIN
8GB	2.7V-3.6V	1.8V / 3.3V	200 MHz	153b FBGA	MLC	Industrial(-40°C to 85°C)	ASFC8G31M-51BIN

eMMC Cross Reference

DENSITY	ALLIANCE	MICRON	SAMSUNG	HYNIX	Macronix	Kingston	KIOXIA	Sky-High	ISSI
4GB	ASFC4G31M-51BIN	MTFC4Gxxx		H26M412xxx	MX52LM04	EMMC04G	THGBMNG5D	S40FC004C	IS21ES04G
8GB	ASFC8G31M-51BIN	MTFC8Gxxx	KLM8G1Gxxx		MX52LM08	EMMC08G	THGBMNG5C	S40FC008C	IS21ES08G

pSRAM

DENSITY	ORG	VCC	PACKAGE	Temperature	ALLIANCE
8Mb	512K x 16	1.7v ~1.95v (1.8v)	6.0x7.0x1.0mm 48 FPBGA	Industrial (-30°C ~+85°C)	AS1C512K16PL-70BIN
8Mb	512K x 16	2.6v to 3.3v (3V)	6.0x7.0x1.0mm 48 FPBGA	Industrial (-40°C ~ +85°C)	AS1C512K16P-70BIN
16Mb	1M x 16	1.7v to 1.95v(1.8v)	6.0x7.0x1.0mm 48 FPBGA	Industrial (-40°C ~ +85°C)	AS1C1M16PL-70BIN
16Mb	1M x 16	2.6v to 3.3v (3V)	6.0x7.0x1.0mm 48 FPBGA	Industrial (-40°C ~ +85°C)	AS1C1M16P-70BIN
32Mb	2M x 16	2.6v to 3.3v (3V)	6.0x7.0x1.0mm 48 FPBGA	Industrial (-40°C ~ +85°C)	AS1C2M16P-70BIN
64Mb	4M x 16	1.7v to 1.95v(1.8v)	4.0x4.0x0.8mm 49FBGA	Industrial (-30°C ~+85°C)	AS1C4M16PL-70BIN
128Mb (*2-stacked die)	8M x 16	1.7v to 1.95v(1.8v)	4.0x4.0x1.0mm 49FBGA	Industrial (-30°C ~+85°C)	AS1C8M16PL-70BIN

pSRAM Cross Reference

ORG	DENSITY	PACKAGE	COMMENTS/ PREV REV	ALLIANCE	JSC/JEJU	ISSI	FIDELIX	AP MEMORY
	8Mb	512K x 16	48 FPBGA	page mode & Non-DPD	AS1C512K16PL-70BIN	EM784SP16BPP-70LF	IS66WV51216EALL-70BLI	
	8Mb	512K x 16	48 FPBGA	Non-page mode & Non-DPD	AS1C512K16P-70BIN	JS784SU16BSP-70LFI	IS66/67WV51216EBLL-70BL	FMP0817CAx
	16Mb	1M X16	48 FPBGA	Non-page mode & Non-DPD	AS1C1M16PL-70BIN	EM7164SP16CSP-70LFI	IS66W1M16EALL-70BL	FMP1617CCx
	16Mb	1M X16	48 FPBGA	Non-page mode & Non-DPD	AS1C1M16P-70BIN	JS164SU16BSP-70LFI	IS66/67WV1M16EBLL-70BL	FMP1617CAx
	32Mb	2M X16	48 FPBGA	Non-page mode & Non-DPD	AS1C2M16P-70BIN	JS7324SU16BSP-70LFI	IS66WVE2M16EBLL-70B	FMP3217CAx
	64Mb	4M X16	49 FBGA	DPD mode	AS1C4M16PL-70BIN	EMC643SP16CKDT-70LF		
	128Mb*	8M X16	49 FBGA	DPD mode	AS1C8M16PL-70BIN	JSC283SP16ATDT-70LF		APS128XX

*2-stacked die

Alliance Packaging Quantities

FAST SRAM ORDER QTY

Part #	Package	Package	Box Qty	Quantity Per Tray/Tube	Reel size	Tape Width (mm)	Tape Pitch (mm)
164A, 256A, 3256A	JxN	28 SOJ - 300mil	2500	25/Tube	1000	24	12
256B	JIN	28 SOJ - 300mil	1080	27/Tube	1000	24	12
3256B	JIN	28 SOJ - 300mil	1352	26/Tube	1000	24	12
256A, 3256A	TxN	28 TSOP I (8x13.4)	2340	234/Tray	1000	24	12
1025B, 31025B, 1024B, 31024B	TJCN	32.3 SOJ - 300mil	2200	22/Tube	1000	32	12
1024C	TJIN	32.3 SOJ - 300mil	920	23/Tube	1000	32	12
31025C	TJIN	32.3 SOJ - 300mil	805	23/Tube	1000	32	12
1025B, 31025B, 1024B, 31024B	JCN	32.4 SOJ - 400mil	2100	21/Tube	1000	32	16
1024C, 1025C, 31025C	JIN	32.4 SOJ - 400mil	805	23/Tube	1000	32	16
513B, 3513B, 1026B, 31026B	JCN	44 SOJ - 400mil - 1 Meg	1600	16/Tube	500	44	16
1026C, 31026C	JIN	44 SOJ - 400mil - 1 Meg	560	16/Tube	500	44	16
1024B, 31024B	TCN	32 TSOP I (8x20)	1560	156/Tray	1000	32	12
31025C	TIN	32 TSOP I (8x20)	805	23/Tube	1000	32	12
513B, 3513B, 1026B, 31026B	TCN	44 TSOP II - 400mil - 1 Meg	1350	135/Tray	1000	32	16
1026C, 31026C	TIN	44 TSOP II - 400mil - 1 Meg	1352	26/Tube	1500	32	16
31026C	BIN	48ball FBGA	3600	360/Tray	2000	44	16
4096A, 34096A, 4098A, 34098A	TxN	44 TSOP II - 400mil - 4 Meg	1350	135/Tray	1000	32	16
4096A, 34096A	JxN	36 SOJ - 400mil	1900	19/Tube	500	44	16
4098A, 34098A	JxN	44 SOJ - 400mil - 4 Meg	1600	16/Tube	500	44	16
34098A	B	48ball BGA	2200	480/Tray			
38096A, 38098A	TIN	44 TSOP II	1350	135/Tray	1000	44	16
38096A, 38098A	B	48ball BGA	4800	480/Tray	2000	44	16
316096A, 316098A	TIN	48 TSOP I	1350	135/Tray	1000	44	16
316098A	B	48ball BGA	4800	480/Tray	2000	16	16
325632,351232	BIN	90ball TFBGA	2400	240/Tray	2000		

LOW POWER SRAM ORDER QTY

Part #	Package Suffix	Package	Box Qty	Quantity Per Tray/Tube	Reel size	Tape Width (mm)	Tape Pitch (mm)
6264/62256	S	28pin 330mil SOP	2500	25/Tube	1000	24	16
6264/62256	P	28pin 600mil DIP	600	15S/Tube	NA	NA	NA
6264/62256	ST	28pin STSOP (8x13.4)	2340	234/Tray	1500	24	12
1008/2008/4008	P	32pin 600mil DIP	520	13S/Tube	NA	NA	NA
1008/2008/4008	S	32pin 450mil SOP	2200	22/Tube	1000	32	16
1008/2008/4008	T	32pin TSOP I (8x20)	1560	156/Tray	1500	32	12
1008/2008/4008	ST	32pin STSOP (8x13.4)	2340	234/Tray	1500	24	12
1016/2016/4016/8008/8016	Z	44pin TSOP II 400mil	1350	135/Tray	1000	32	12
1616/6416	T	48pin TSOP I	960	96/Tray	1500		
1008/2008/4008/8008/1016/1616/2016/4016/8016/1616/3216	B	36B/48B TFBGA (6x8)	4800 or 3000	480/Tray Or 300/Tray	2000	16	12
4008	Z	32pin TSOP II	1170	117/Tray	1000	32	16

DRAM ORDER QTY

Part#	Package	Box Qty	Quantity Tray	Reel size
SDRAM				
AS4C1M16S	50pin TSOP II	1170	117/Tray	1000
AS4C4M16S/AS4C4M16SA	54pin TSOP II	1080	108/Tray	1000
AS4C4M16S/AS4C4M16SA	54ball BGA	3480	348/Tray	2500
AS4C4M16SA-7B2CN	60ball FBGA	2860	286/Tray	2000
AS4C2M32SA/AS4C4M32SA	86pin TSOP II	1080	108/Tray	1000
AS4C2M32S/AS4C4M32S	90ball BGA	1900	190/Tray	2000
AS4C8M16S/AS4C8M16SA	54pin TSOP II	1080	108/Tray	1000
AS4C8M16S/AS4C8M16SA	54ball TFBGA	3480	348/Tray	2500
AS4C16M16S/AS4C16M16SA	54pin TSOP II	1080	108/Tray	1000
AS4C16M16S/AS4C16M16SA	54ball FBGA	3480	348/Tray	2500
AS4C8M32S	90 ball LFBGA	1900	190/Tray	2000
AS4C32M16SA	54pin TSOP II	1080	108/Tray	1000
AS4C32M16SA	54ball FBGA	3480	348/Tray	1000
MT48LC32M16A2P-75*	54pin TSOP II	1000	108/Tray	1000
MT48LC64M8A2P-75*	54pin TSOP II	1000	108/Tray	1000
DDR1				
AS4C4M16D1A/AS4C8M16D1/AS4C8M16D1A/AS4C16M16D1/AS4C16M16D1A/ AS4C32M8D1/ AS4C32M16D1/AS4C32M16D1A/AS4C64M8D1/ AS4C64M16D1/AS4C64M16D1A	66pin TSOP II	1080	108/Tray	1000
AS4C8M16D1/AS4C16M16D1/AS4C32M16D1/AS4C64M8D1	60ball BGA	2400	240/Tray	2500
AS4C2M32D1A/AS4C4M32D1A	144ball FBGA	1890	189/Tray	1500
DDR2				
AS4C16M16D2/AS4C32M16D2/AS4C32M16D2A/AS4C64M16D2	84ball FBGA	2090	209/Tray	2500
AS4C64M8D2	60ball FBGA	2090	209/Tray	2500
AS4C128M8D2	60ball FBGA	3000	300/Tray	2500
AS4C128M16D2/AS4C128M16D2A	84ball FBGA	2090	209/Tray	2500
AS4C256M8D2	60ball FBGA	1360	136/Tray	2500
DDR3				
AS4C32M16D3-12BxN/AS4C32M16D3L-12BxN	96ball FBGA	2090	209/Tray	1500
AS4C64M8D3-12BxN/AS4C64M8D3L-12BxN	78ball FBGA	2420	242/Tray	2500
AS4C128M8D3/AS4C128M8D3L	78ball FBGA	2420	242/Tray	1000
AS4C64M16D3A	96ball FBGA	2090	209/Tray	2000
AS4C64M16D3LA	96ball FBGA	1900	190/Tray	2000
AS4C128M16D3A/AS4C128M16D3B	96ball FBGA	2090	209/Tray	1500
AS4C128M16D3LA/ AS4C128M16D3LB	96ball FBGA	1900	190/Tray	2000
AS4C256M8D3A/AS4C256M8D3LA	78ball FBGA	2420	242/Tray	1000
AS4C256M16D3A/AS4C256M16D3LA	96ball FBGA	1900	190/Tray	1000
AS4C256M16D3B/AS4C256M16D3LB	96ball FBGA	1800	180/Tray	2000
AS4C512M8D3B/AS4C512M8D3LB	78ball FBGA	2200	220/Tray	1000
AS4C256M32D3/AS4C256M32D3L	136-ball FBGA	2200	220/Tray	1000
AS4C512M16D3L/AS4C1G8MD3L	96ball FBGA	1020	170/Tray	1000
MOBILE SDRAM				
AS4C8M16MSA/AS4C16M16MSA/AS4C32M16MSA	54-ball FBGA	3190	319/Tray	1000
AS4C4M32MSA/AS4C8M32MSA/AS4C16M32MSA	90-ball FBGA	1900	190/Tray	1000
MOBILE DDR1				
AS4C16M16MD1	60-ball FPBGA	1600	160/Tray	1000
AS4C32M16MD1/ AS4C32M16MD1A	60-ball FPBGA	1600	160/Tray	1000
AS4C16M32MD1	90-ball FPBGA	2400	240/Tray	1000
AS4C64M16MD1A	60-ball FPBGA	1600	160/Tray	1000
AS4C32M32MD1A	90-ball FPBGA	2400	240/Tray	1000
AS4C64M32MD1	90-ball FPBGA	2400	240/Tray	1000
MOBILE DDR2				
AS4C64M16MD2-25BCN/AS4C32M32MD2-25BCN	134ball FBGA (10 x 11.5 x 1.0)	1280	128/Tray	1000
AS4C128M16MD2-25BCN/AS4C64M32MD2-25BCN	134ball FBGA (10 x 11.5 x 1.0)	1280	128/Tray	1000
AS4C128M32MD2-18BxN	134ball FBGA (11.5 x 11.5 x 1.0)	1680	168/Tray	1000
AS4C256M32MD2-18BxN	134ball FBGA (11.5 x 11.5 x 1.0)	1680	168/Tray	1000

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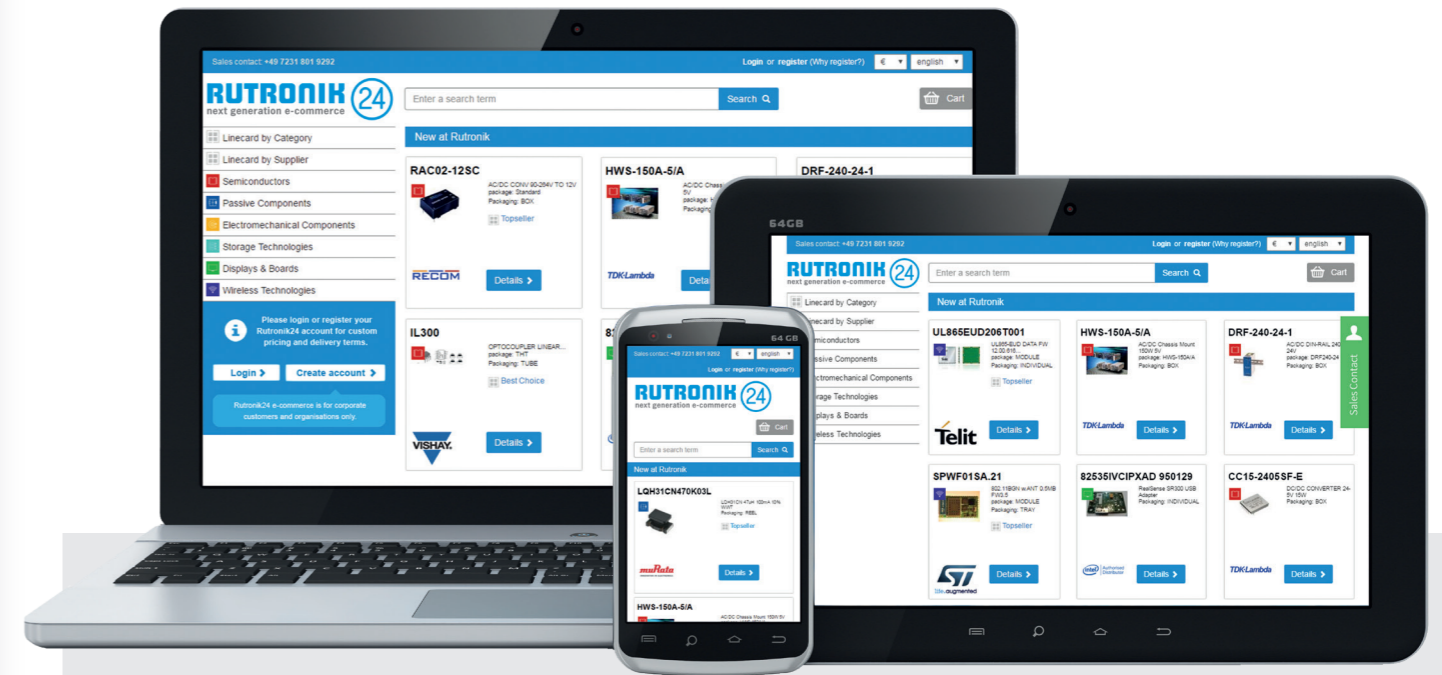
Alliance Part Numbering System

SRAM	
AS	Alliance Memory
7	7C = FAST Asynchronous SRAM 6C = Low Power Asynchronous SRAM 8C = Synchronous SRAM 1C = Psuedo SRAM
C	C = CMOS SRAM
3	Voltage: Blank = 5V CMOS 3 = 3.3V CMOS
4098	Device number assigned by Alliance Memory
A	'A', 'B' or 'C' denotes die revision and/or internal identification for WAFER Foundry
-12	Access time in nanoseconds/megahertz
J	Packages: J = SOJ 400mil TJ = SOJ 300mil T = TSOP ST = shrink TSOP QC = 100pin TQFP S = SOP P = DIP B = TFBGA Z = TSOP II
C	Temperature Ranges: C = Commercial 0 to 70°C (Extended Commercial -25 to 85°C / -30 to 85°C) I = Industrial -40 to 85°C A = Automotive -40 to 105°C
N	N = ROHS compliant lead free part
TR	Tape and Reel
DRAM	
AS	Alliance Memory
4	4 = DRAM
C	C = CMOS SRAM
16M	Voltage: Blank = 5V CMOS 3 = 3.3V CMOS
16	Organization: 8 = x8 16 = x16 32 = x32
S	Technology: S = SDRAM D1 = DDR D2 = DDR2 D3 = DDR3
A	'A', 'B' or 'C' denotes die revision and/or internal identification for WAFER Foundry
-7	Access time in nanoseconds/megahertz
T	Packages: T = TSOP B = TFFBGA
C	Temperature Ranges: C = Commercial I = Industrial A = Automotive
N	N = ROHS compliant lead free part
TR	Tape and Reel



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Chen Wang | Corporate Product Manager Digital | Phone: +49 7231 801 1488 | Mail: chen.wang@rutronik.com