



INTEGRATED SILICON SOLUTION, INC.

Product Selector Guide | November 2012



DRAM | SRAM | ANALOG | FLASH | AUTOMOTIVE



To our valued customers,

At ISSI we design, develop and market high performance integrated circuits for the following key markets: (i) automotive, (ii) communications, (iii) digital consumer, and (iv) industrial/medical/military. These key markets all require high quality and reliability, extended temperature ranges, and long-term support. Our primary products are high speed and low power SRAM and low and medium density DRAM. With our acquisition of Chingis Technology, ISSI designs and markets a variety of NOR flash memory technologies used in standalone and embedded applications. ISSI also designs and markets high performance analog and mixed signal integrated circuits.

Product quality and reliability is an integral part of a device and it must be considered long before out-going QRA tests. At ISSI, product quality and reliability starts with new product definition. Products approved for design and production must be capable of handling harsh environments. To ensure this capability, careful attention is placed on process selection and other key technical decisions. A project is approved only if it can meet these requirements and if ISSI can deliver a product that will exceed our customers' expectations.

To support harsh system environments, ISSI offers extended temperature ranges of -40°C to +85°C, -40°C to +105°C, and -40°C to +125°C. To further ruggedize our products, ISSI offers a copper leadframe option. Copper leadframes provide enhanced reliability due to better thermal conductivity and expansion and contraction coefficients that match closely with printed circuit boards.

Often our customers must put their systems through rigorous testing, in harsh environments. This is done to ensure that their systems can meet the quality and reliability requirements of their customers' mission critical applications. Upon end customer approval, long-term support of the system is usually required. A system re-design, due to product obsolescence, is not acceptable. Thus, at ISSI, "long-term support" is not just a slogan, it is a core value.

ISSI works with leading edge suppliers in order to ensure long-term product support for our customers. One of the differentiated solutions we have is our capability to support high mix – low volume requirements. Many of our customers in our target markets need support for that model and ISSI's manufacturing plan is built around servicing that requirement.

Our customers can count on ISSI to provide high quality, reliable products for a wide range of applications, including mission critical systems in harsh environments. And we provide the long-term product support that our customers require.

Sanjiv Asthana
Senior Vice President, Worldwide Sales
Integrated Silicon Solution, Inc.

Synchronous SRAM

Pipelined and Flow-Thru Synchronous SRAM

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ^(3,4,5,6)	
2M	64Kx32	IS61LF6432A	3.3V	2.5V/3.3V	90	8.5	TQFP(100)	Prod	F	
	64Kx36	IS61LF6436A	3.3V	2.5V/3.3V	90	8.5	TQFP(100)	Prod	F	
	64Kx32	IS61LP6432A	3.3V	2.5V/3.3V	133	4	TQFP(100)	Prod	P	
	64Kx36	IS61LP6436A	3.3V	2.5V/3.3V	166,133	3.5,4	TQFP(100)	Prod	P	
4M	128Kx32	IS61LPS12832A					PBGA(119),TQFP(100)			
	128Kx36	IS61LPS12836A	3.3V	3.3V/2.5V	250	2.6	BGA(165)	Prod	P,SC	
	256Kx18	IS61LPS25618A								
	128Kx32	IS61LPS12832EC					PBGA(119),TQFP(100)			
	128Kx36	IS61LPS12836EC	3.3V	3.3V/2.5V	250,200	2.6,3.1	BGA(165)	S=NOW	P,SC,ECC feature	
	256Kx18	IS61LPS25618EC								
	128Kx36	IS61VPS12836A	2.5V	2.5V	250	2.6	PBGA(119),TQFP(100) BGA(165)	Prod	P,SC	
	256Kx18	IS61VPS25618A								
	128Kx32	IS61VPS12832EC	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100) BGA(165)	S=NOW	P,SC,ECC feature	
	128Kx36	IS61VPS12836EC	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100) BGA(165)	S=NOW	P,SC,ECC feature	
	256Kx18	IS61VPS25618EC								
	128Kx32	IS61LF12832A					PBGA(119),TQFP(100)			
	128Kx36	IS61LF12836A	3.3V	2.5V/3.3V	133,117	6.5,7.5	BGA(165)	Prod	F	
	256Kx18	IS61LF25618A								
	128Kx32	IS61LF12832EC					PBGA(119),TQFP(100)			
	128Kx36	IS61LF12836EC	3.3V	2.5V/3.3V	133,117	6.5,7.5	BGA(165)	S=NOW	F,ECC feature	
	256Kx18	IS61LF25618EC								
	128Kx32	IS61VF2832EC	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100) BGA(165)	S=NOW	F,ECC feature	
	128Kx36	IS61VF12836A	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100) BGA(165)	Prod	F	
	256Kx18	IS61VF25618A								
	128Kx36	IS61VF12836EC	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100) BGA(165)	S=NOW	F,ECC feature	
	256Kx18	IS61VF25618EC								
	8M	256Kx32	IS61LPS25632A							
		256Kx36	IS61LPS25636A	3.3V	3.3V/2.5V	250,166	2.6	PBGA(119),TQFP(100) BGA(165)	Prod	P,SC
512Kx18		IS61LPS51218A								
256Kx36		IS61VPS25636A	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100) BGA(165)	Prod	P,SC	
512Kx18		IS61VPS51218A								
256Kx36		IS61LPD25636A	3.3V	2.5V/3.3V	250	2.6	PBGA(119),TQFP(100) BGA(165)	Prod	P,DC	
512Kx18		IS61LPD51218A								
256Kx36		IS61VPD25636A	2.5V	2.5V	250	2.6	PBGA(119),TQFP(100) BGA(165)	Prod	P,DC	
512Kx18		IS61VPD51218A								
256Kx36		IS61LF25636A	3.3V	2.5V/3.3V	133	6.5	PBGA(119),TQFP(100) BGA(165)	Prod	F	
512Kx18		IS61LF51218A								
256Kx36		IS61VF25636A	2.5V	2.5V	133	6.5	PBGA(119),TQFP(100) BGA(165)	Prod	F	
512Kx18	IS61VF51218A									

Synchronous SRAM(Cont'd)

Pipelined and Flow-Thru Synchronous SRAM

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ^(3,4,5,6)
18M	256Kx72	IS61LPS25672A	3.3V	3.3V/2.5V	250	2.6	BGA(209)	Prod	P,SC
	512Kx36	IS61LPS51236A	3.3V	3.3V/2.5V	250	2.6	PBGA(119),TQFP(100)	Prod	P,SC
	1Mx18	IS61LPS102418A					BGA(165)		
	256Kx72	IS61VPS25672A	3.3V	3.3V/2.5V	250	2.6	BGA(209)	Prod	P,SC
	512Kx36	IS61VPS51236A	2.5V	2.5V	250	2.6	PBGA(119),TQFP(100)	Prod	P,SC
	1Mx18	IS61VPS102418A					BGA(165)		
	512Kx36	IS61LPD51236A	3.3V	2.5V/3.3V	250	2.6	TQFP(100)	Prod	P, DC
	1Mx18	IS61LPD102418A					BGA(165)		
	512Kx36	IS61VPD51236A	2.5V	2.5V	250	2.6	TQFP(100)	Prod	P,DC
	1Mx18	IS61VPD102418A					BGA(165)		
	256Kx72	IS61LF25672A							
	512Kx36	IS61LF51236A	3.3V	2.5V/3.3V	133	6.5	PBGA(119),TQFP(100)	Prod	F
	1Mx18	IS61LF102418A					BGA(165), BGA(209)		
	256Kx72	IS61VF25672A							
512Kx36	IS61VF51236A	2.5V	2.5V	133	6.5	PBGA(119),TQFP(100)	Prod	F	
1Mx18	IS61VF102418A					BGA(165), BGA(209)			
36M	1Mx36	IS61LPS102436A	3.3V	3.3V/2.5V	166	3.5	TQFP(100), BGA(165)	Prod	P, SC
	2Mx18	IS61LPS204818A	3.3V	3.3V/2.5V	166	3.5	TQFP(100), BGA(165)	Prod	P, SC
	1Mx36	IS61VPS102436A	2.5V	2.5V	166	3.5	TQFP(100), BGA(165)	Prod	P, SC
	2Mx18	IS61VPS204818A	3.3V	2.5V	166	3.5	TQFP(100), BGA(165)	Prod	P, SC
	1Mx36	IS61LF102436A	3.3V	3.3V/2.5V	133	6.5	TQFP(100), BGA(165)	Prod	F
	2Mx18	IS61LF204818A	3.3V	3.3V/2.5V	133	6.5	TQFP(100), BGA(165)	Prod	F
	1Mx36	IS61VF102436A	2.5V	2.5V	133	6.5	TQFP(100), BGA(165)	Prod	F
	2Mx18	IS61VF204818A	2.5V	2.5V	133	6.5	TQFP(100), BGA(165)	Prod	F

Notes: 1. S = Sample 2. Prod = Production 3. P = Pipeline 4. F =Flow Through 5. SC = Single Cycle Deselect 6. DC = Double Cycle Deselect

Pipelined and Flow-Thru Synchronous SRAM

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ^(3,4,5,6)
72M	2Mx32	IS61LPS204832B	3.3V	3.3V/2.5V	200	3.1	TQFP(100)	S=Q4/12	P, SC
	2Mx36	IS61LPS204836B	3.3V	3.3V/2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	4Mx18	IS61LPS409618B	3.3V	3.3V/2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	2Mx36	IS61VPS204836B	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	4Mx18	IS61VPS409618B	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	2Mx36	IS61VVPS204836B	1.8V	1.8V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	4Mx18	IS61VVPS409618B	1.8V	1.8V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P, SC
	2Mx36	IS61LF204836B	3.3V	3.3V/2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61LF409618B	3.3V	3.3V/2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	2Mx36	IS61VF204836B	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61VF409618B	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	2Mx36	IS61VVF204836B	1.8V	1.8V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61VVF409618B	1.8V	1.8V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F

Synchronous SRAM(Cont'd)

No-Wait Synchronous SRAM (Compatible with Zero Bus Turnaround devices)

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ^(3,4)
2M	64Kx32	IS61NLP6432A	3.3V	2.5V/3.3V	250,200	2.6,3.1	TQFP(100)	Prod	P
	64Kx36	IS61NLP6436A	3.3V	2.5V/3.3V	250,200	2.6,3.1	TQFP(100)	Prod	P
	128Kx18	IS61NLP12818A	3.3V	2.5V/3.3V	250,200	2.6,3.1	TQFP(100)	Prod	P
	64Kx36	IS61NVP6436A	2.5V	2.5V	250,200	2.6,3.1	TQFP(100)	Prod	P
	128Kx18	IS61NVP12818A	2.5V	2.5V	250,200	2.6,3.1	TQFP(100)	Prod	P
4M	128Kx32	IS61NLP12832B					PBGA(119),TQFP(100)		
	128Kx36	IS61NLP12836B	3.3V	2.5V/3.3V	250	2.6	BGA(165)	Prod	P
	256Kx18	IS61NLP25618A							
	128Kx32	IS61NLP12832EC					PBGA(119),TQFP(100)	S=NOW	P,ECC feature
	128Kx36	IS61NLP12836EC	3.3V	2.5V/3.3V	250,200	2.6,3.1	BGA(165)		
	256Kx18	IS61NLP25618EC							
	128Kx32	IS61NVP12832EC	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100)	S=NOW	P,ECC feature
							BGA(165)		
	128Kx36	IS61NVP12836B	2.5V	2.5V	250	2.6	PBGA(119),TQFP(100)	Prod	P
	256Kx18	IS61NVP25618A					BGA(165)		
	128Kx36	IS61NVP12836EC	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100)	S=NOW	P,ECC feature
	256Kx18	IS61NVP25618EC					BGA(165)		
	128Kx32	IS61NLF12832EC	3.3V	3.3V/2.5V	117,133	7.5,6.5	PBGA(119),TQFP(100)	S=NOW	F,ECC feature
							BGA(165)		
	128Kx36	IS61NLF12836A	3.3V	3.3V/2.5V	117,133	7.5,6.5	TQFP(100)	Prod	F
	256Kx18	IS61NLF25618A					PBGA(119),BGA(165)		
	128Kx36	IS61NLF12836EC	3.3V	2.5V/3.3V	117,133	7.5,6.5	TQFP(100)	S=NOW	F,ECC feature
	256Kx18	IS61NLF25618EC					PBGA(119),BGA(165)		
	128Kx32	IS61NVF12832EC	2.5V	2.5V	117,133	7.5,6.5	PBGA(119),TQFP(100)	S=NOW	F,ECC feature
							BGA(165)		
128Kx36	IS61NVF12836A	2.5V	2.5V	117,133	7.5,6.5	TQFP(100)	Prod	F	
256Kx18	IS61NVF25618A					PBGA(119),BGA(165)			
128Kx36	IS61NVF12836EC	2.5V	2.5V	117,133	7.5,6.5	TQFP(100)	S=NOW	F,ECC feature	
256Kx18	IS61NVF25618EC					PBGA(119),BGA(165)			
8M	256Kx36	IS61NLP25636A	3.3V	2.5V/3.3V	250	2.6	PBGA(119),TQFP(100)	Prod	P
	512Kx18	IS61NLP51218A					BGA(165)		
	256Kx36	IS61NVP25636A	2.5V	2.5V	250	2.6	PBGA(119),TQFP(100)	Prod	P
	512Kx18	IS61NVP51218A					BGA(165)		
	256Kx36	IS61NLF25636A	3.3V	2.5V/3.3V	133	6.5	TQFP(100)	Prod	F
	512Kx18	IS61NLF51218A					PBGA(119),BGA(165)		
	256Kx36	IS61NVF25636A	2.5V	2.5V	133	6.5	TQFP(100)	Prod	F
512Kx18	IS61NVF51218A					PBGA(119),BGA(165)			
18M	256Kx72	IS61NLP25672							
	512Kx36	IS61NLP51236	3.3V	2.5V/3.3V	250	2.6	BGA(209),TQFP(100)	Prod	P
	1Mx18	IS61NLP102418					BGA(165), BGA(119)		
	256Kx72	IS61NVP25672							
	512Kx36	IS61NVP51236	2.5V	2.5V	250	2.6	BGA(209),TQFP(100)	Prod	P
	1Mx18	IS61NVP102418					BGA(165), BGA(119)		
	256Kx72	IS61NLF25672							
	512Kx36	IS61NLF51236	3.3V	2.5V/3.3V	133	6.5	BGA(209),TQFP(100)	Prod	F
1Mx18	IS61NLF102418					BGA(165)			
256Kx72	IS61NVF25672								
512Kx36	IS61NVF51236	2.5V	2.5V	133	6.5	BGA(209),TQFP(100)	Prod	F	
1Mx18	IS61NVF102418					BGA(165)			
36M	2Mx18	IS61NVP204818A	2.5V	2.5V	166	3.5	TQFP(100)	Prod	P
	1Mx36	IS61NVP102436A					BGA(165)		

Notes: 1. S = Sample 2. Prod = Production 3. P = Pipeline 4. F =Flow Through 5. SC = Single Cycle Deselect 6. DC = Double Cycle Deselect

Synchronous SRAM(Cont'd)

No-Wait Synchronous SRAM (Compatible with Zero Bus Turnaround devices)

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ^(3,4)
36M	2Mx18	IS61NLP204818A	3.3V	3.3V/2.5V	166	3.5	TQFP(100)	Prod	P
	1Mx36	IS61NLP102436A					BGA(165)		
	2Mx18	IS61NLF204818A	3.3V	3.3V/2.5V	133,117	6.5,7.5	TQFP(100)	Prod	F
	1Mx36	IS61NLF102436A					BGA(165)		
2Mx18	IS61NVF204818A	2.5V	2.5V	133,117	6.5,7.5	TQFP(100)	Prod	F	
	1Mx36	IS61NVF102436A							BGA(165)
72M	2Mx36	IS61NLP204836B	3.3V	3.3V/2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	4Mx18	IS61NLP409618B	3.3V	3.3V/2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	2Mx36	IS61NVP204836B	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	4Mx18	IS61NVP409618B	2.5V	2.5V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	2Mx36	IS61NVVP204836B	1.8V	1.8V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	4Mx18	IS61NVVP409618B	1.8V	1.8V	250,200	2.6,3.1	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	P
	2Mx36	IS61NLF204836B	3.3V	3.3V/2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61NLF409618B	3.3V	3.3V/2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	2Mx36	IS61NVF204836B	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61NVF409618B	2.5V	2.5V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	2Mx36	IS61NVVF204836B	1.8V	1.8V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F
	4Mx18	IS61NVVF409618B	1.8V	1.8V	133,117	6.5,7.5	PBGA(119),TQFP(100),BGA(165)	S=Q4/12	F

QUAD Synchronous SRAM

Den	Org	Part No.	Burst	Speed (Mhz)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽⁷⁾
18M	1Mx18	IS61QDB41M18A	4	250, 300, 333, 400	BGA(165)	S=NOW	
	512Kx36	IS61QDB451236A	4	250, 300, 333, 400	BGA(165)	S=NOW	
	1Mx18	IS61QDB21M18A	2	250, 300, 333	BGA(165)	S=NOW	
	512Kx36	IS61QDB251236A	2	250, 300, 333	BGA(165)	S=NOW	
36M	1Mx36	IS61QDB41M36A	4	250, 300, 333, 400	BGA(165)	S=NOW	
	2Mx18	IS61QDB42M18A	4	250, 300, 333, 400	BGA(165)	S=NOW	
	1Mx36	IS61QDB21M36A	2	250, 300, 333	BGA(165)	S=NOW	
	2Mx18	IS61QDB22M18A	2	250, 300, 333	BGA(165)	S=NOW	
72M	2Mx36	IS61QDB42M36A	4	250,300,333, 400	BGA(165)	S=NOW	
	4Mx18	IS61QDB44M18A	4	250,300,333, 400	BGA(165)	S=NOW	
	2Mx36	IS61QDB22M36A	2	250,300,333	BGA(165)	S=NOW	
	4Mx18	IS61QDB24M18A	2	250,300,333	BGA(165)	S=NOW	

QUADP Synchronous SRAM

Den	Org	Part No.	Burst	Speed (Mhz)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽⁷⁾
18M	1Mx18	IS61QDPB41M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	1Mx18	IS61QDPB241M18A/A1/A2	4	300, 333, 400, 450	BGA(165)	S=NOW	2.0 Lat
	1Mx18	IS61QDPB21M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
	1Mx18	IS61QDPB221M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat
	512Kx36	IS61QDPB451236A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	512Kx36	IS61QDPB2451236A/A1/A2	4	300, 333, 400, 450	BGA(165)	S=NOW	2.0 Lat
	512Kx36	IS61QDPB251236A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
	512Kx36	IS61QDPB2251236A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat
	36M	1Mx36	IS61QDPB41M36A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW
1Mx36		IS61QDPB241M36A/A1/A2	4	300, 333, 400, 450	BGA(165)	S=NOW	2.0 Lat
1Mx36		IS61QDPB21M36A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
1Mx36		IS61QDPB221M36A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat
2Mx18		IS61QDPB42M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
2Mx18		IS61QDPB242M18A/A1/A2	4	300, 333, 400, 450	BGA(165)	S=NOW	2.0 Lat
2Mx18		IS61QDPB22M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
2Mx18		IS61QDPB222M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat

Notes: 1. S = Sample 2. Prod = Production 3. P = Pipeline 4. F =Flow Through 5. SC = Single Cycle Deselect 6. DC = Double Cycle Deselect
Lat = 2.0 or 2.5 Cycle Read Latency

7.

Synchronous SRAM(Cont'd)

QUADP Synchronous SRAM

Den	Org	Part No.	Burst	Speed (Mhz)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽⁷⁾
72M	4Mx18	IS61QDPB44M18A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	4Mx18	IS61QDP2B44M18A/A1/A2	4	300,333,400,450	BGA(165)	S=NOW	2.0 Lat
	4Mx18	IS61QDPB24M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
	4Mx18	IS61QDP2B24M18A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat
	2Mx36	IS61QDPB42M36A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	2Mx36	IS61QDP2B42M36A/A1/A2	4	300,333,400,450	BGA(165)	S=NOW	2.0 Lat
	2Mx36	IS61QDPB22M36A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.5 Lat
	2Mx36	IS61QDP2B22M36A/A1/A2	2	250, 300, 333	BGA(165)	S=NOW	2.0 Lat

DDR-II Synchronous SRAM

Den	Org	Part No.	Burst	Speed (Mhz)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment
18M	1Mx18	IS61DDB41M18A	4	250, 300, 333	BGA(165)	S=NOW	
	512Kx36	IS61DDB451236A	4	250, 300, 333	BGA(165)	S=NOW	
	1Mx18	IS61DDB21M18A	2	250, 300, 333	BGA(165)	S=NOW	
	512Kx36	IS61DDB251236A	2	250, 300, 333	BGA(165)	S=NOW	
36M	1Mx36	IS61DDB41M36A	4	250, 300, 333	BGA(165)	S=NOW	
	2Mx18	IS61DDB42M18A	4	250, 300, 333	BGA(165)	S=NOW	
	1Mx36	IS61DDB21M36A	2	250, 300, 333	BGA(165)	S=NOW	
	2Mx18	IS61DDB22M18A	2	250, 300, 333	BGA(165)	S=NOW	
72M	2Mx36	IS61DDB42M36A	4	250,300,333	BGA(165)	S=NOW	
	4Mx18	IS61DDB44M18A	4	250,300,333	BGA(165)	S=NOW	
	2Mx36	IS61DDB22M36A	2	250,300,333	BGA(165)	S=NOW	
	4Mx18	IS61DDB24M18A	2	250,300,333	BGA(165)	S=NOW	

DDR-IIP Synchronous SRAM

Den	Org	Part No.	Burst	Speed (Mhz)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽⁷⁾
18M	1Mx18	IS61DDPB41M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	1Mx18	IS61DDPB41M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	1Mx18	IS61DDPB21M18A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	1Mx18	IS61DDPB21M18A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	512Kx36	IS61DDPB451236A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	512Kx36	IS61DDPB451236A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	512Kx36	IS61DDPB251236A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	512Kx36	IS61DDPB251236A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
36M	2Mx18	IS61DDPB42M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	2Mx18	IS61DDPB42M18A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	2Mx18	IS61DDPB22M18A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	2Mx18	IS61DDPB22M18A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	1Mx36	IS61DDPB41M36A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	1Mx36	IS61DDPB41M36A/A1/A2	4	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
	1Mx36	IS61DDPB21M36A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.0 Lat
	1Mx36	IS61DDPB21M36A/A1/A2	2	400, 450, 500, 550	BGA(165)	S=NOW	2.5 Lat
72M	4Mx18	IS61DDPB44M18A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	4Mx18	IS61DDPB44M18A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.0 Lat
	4Mx18	IS61DDPB24M18A/A1/A2	2	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	4Mx18	IS61DDPB24M18A/A1/A2	2	400,450,500,550	BGA(165)	S=NOW	2.0 Lat
	2Mx36	IS61DDPB42M36A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	2Mx36	IS61DDPB42M36A/A1/A2	4	400,450,500,550	BGA(165)	S=NOW	2.0 Lat
	2Mx36	IS61DDPB22M36A/A1/A2	2	400,450,500,550	BGA(165)	S=NOW	2.5 Lat
	2Mx36	IS61DDPB22M36A/A1/A2	2	400,450,500,550	BGA(165)	S=NOW	2.0 Lat

Notes: 1. S = Sample 2. Prod = Production 3. P = Pipeline 4. F = Flow Through 5. SC = Single Cycle Deselect 6. DC = Double Cycle Deselect 7. Lat = 2.0 or 2.5 Cycle Read Latency

Asynchronous SRAM

5V High-Speed Asynchronous SRAM

Den	Org	Part No.	Vcc	Speeds (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment
64K	8Kx8	IS61C64AL	5V	10	SOJ(28),TSOP1(28)	Prod	
256K	32Kx8	IS61C256AL	5V	10,12	SOJ(28),TSOP1(28)	Prod	
512K	32Kx16	IS61C3216AL	5V	12	SOJ(44),TSOP2(44)	Prod	
1M	64Kx16	IS61C6416AL	5V	12	SOJ(44),TSOP2(44)	Prod	
	128Kx8	IS61C1024AL	5V	12	SOJ(32.3),SOJ(32.4) TSOP1(32), sTSOP1(32)	Prod	
4M	512Kx8	IS61C5128AL	5V	10,12	SOJ(36),TSOP2(44)	Prod	
	512Kx8	IS61C5128AS	5V	25	SOP(32),sTSOP1(32),TSOP2(32)	Prod	
	256Kx16	IS61C25616AL	5V	10	SOJ(44),TSOP2(44)	Prod	
	256Kx16	IS61C25616AS	5V	25	SOJ(44),TSOP2(44)	Prod	

5V Low Power Asynchronous SRAM

Den	Org	Part No.	Vcc	Speeds (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment
256K	32Kx8	IS62C256AL	5V	25,45	SOP(28),TSOP1(28)	Prod	
1M	128Kx8	IS62C1024AL	5V	35	SOP(32),TSOP1(32)	Prod	
4M	512Kx8	IS62C5128BL	5V	45	SOP(32),sTSOP1(32),TSOP2(32)	Prod	
	256Kx16	IS62C25616BL	5V	45	TSOP2(44)	Prod	
8M	1Mx8	IS62C10248AL	5V	45,55	TSOP2(44), BGA(48)	Prod	
	512Kx16	IS62C51216AL	5V	45,55	TSOP2(44), BGA(48)	Prod	

High Speed Low Power Asynchronous SRAM

Den	Org	Part No.	Vcc	Speed (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment
256K	32Kx8	IS61LV256AL	3.3V	10	SOJ(28),TSOP1(28)	Prod	
512K	32Kx16	IS61WV3216BLL	3.3V	12	TSOP2(44), mBGA(48)	Prod	
	32Kx16	IS61WV3216DALL/DBLL	1.65V-3.6V	8,10,12,20	TSOP2(44), mBGA(48)	Prod	
1M	64Kx16	IS61WV6416DBLL	1.65V-3.6V	8,10,12,20	TSOP2(44),mBGA(48),SOJ(44)	Prod	
	64Kx16	IS61WV6416EEBLL	1.65V-3.6V	8,10	TSOP2(44),mBGA(48),SOJ(44)	S=Q4/12	ECC Based SRAM
	128Kx8	IS63WV1288DALL/DBLL	1.65V-3.6V	8,10,12,20	TSOP2(32),mBGA(48) sTSOP1(32),SOJ(32.3)	Prod	
	128Kx8	IS61WV1288EEBLL	1.65V-3.6V	8,10	TSOP2(32),mBGA(48) sTSOP1(32),SOJ(32.3)	S=Q4/12	ECC Based SRAM
2M	128Kx16	IS61WV12816DALL/DBLL	1.65V-3.6V	8,10,12,20	TSOP2(44). BGA(48)	Prod	
	128Kx16	IS61WV12816EDBLL	2.4V-3.6V	8,10	TSOP2(44). BGA(48)	Prod	ECC Based SRAM
	256Kx8	IS61LV2568L	3.3V	8,10	SOJ(36),TSOP2(44)	Prod	
	256Kx8	IS61WV2568EDBLL	2.4V-3.6V	8,10	SOJ(36),TSOP2(44),mBGA(36)	Prod	ECC Based SRAM
3M	128Kx24	IS61LV12824	3.3V	8,10	PBGA(119),TQFP(100)	Prod	x24 Interface
4M	256Kx16	IS61WV25616ALL/BLL	1.65V-3.6V	8,10,20	TSOP2(44), mBGA(48)	Prod	
	256Kx16	IS61WV25616EDBLL	2.4V-3.6V	8,10	TSOP2(44), mBGA(48)	Prod	ECC Based SRAM
	512Kx8	IS61WV5128ALL/BLL	1.65V-3.6V	8,10,20	SOJ(36),TSOP2(44),mBGA(36)	Prod	
	512Kx8	IS61WV5128EDBLL	2.4V-3.6V	10	TSOP2(44),mBGA(36)	Prod	ECC Based SRAM
8M	512Kx16	IS61WV51216ALL/BLL	1.65V-3.6V	8,10,20	TSOP2(44),mBGA(48)	Prod	
	512Kx16	IS61WV51216EDBL	1.65V-3.6V	8,10,20	TSOP2(44),mBGA(48)	S=NOW	ECC Based SRAM
	1Mx8	IS61WV10248ALL/BLL	1.65V-3.6V	8,10,20	TSOP2(44),mBGA(48)	Prod	
	1Mx8	IS61WV10248EDBL	2.4V-3.6V	8,10,20	TSOP2(44),mBGA(48)	S=NOW	ECC Based SRAM
	256Kx32	IS61WV25632ALL/BLL	1.65V-3.6V	8,10,20	BGA(90)	Prod	

Notes: 1. S = Sample 2. Prod = Production 3. 2CS = 2 chip enable
Available in Commercial (0°C to +70°C) and Industrial (-40°C to +85°C) temperature options.

Asynchronous SRAM(Cont'd)

High Speed Low Power Asynchronous SRAM

Den	Org	Part No.	Vcc	Speed (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment
16M	1Mx16	IS61WV102416ALL/BLL	1.65V-3.6V	8,10,20	TSOP1(48),mBGA(48)	Prod	
	1Mx16	IS62WV102416ALL/BLL	1.65V-3.6V	25,35	TSOP1(48),mBGA(48)	Prod	Low Power
	2Mx8	IS61WV20488ALL/BLL	1.65V-3.6V	8,10,20	TSOP2(44),mBGA(48)	Prod	
	2Mx8	IS62WV20488ALL/BLL	1.65V-3.6V	25,35	TSOP2(44),mBGA(48)	Prod	Low Power
	512Kx32	IS61WV51232ALL/BLL	1.65V-3.6V	8,10,20	BGA(90)	Prod	

PowerSaver™ Low Power Asynchronous SRAM

Den	Org	Part No.	Vcc	Speeds (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽³⁾
256K	32Kx8	IS62LV256AL	3.3V	20,45	SOJ(28),SOP(28),TSOP1(28)	Prod	
1M	64Kx16	IS62WV6416DALL/DBLL	1.65V-3.6V	35,45,55	TSOP2(44),mBGA(48)	Prod	
	128Kx8	IS62WV1288DALL/DBLL	1.65V-3.6V	35,45,55	SOP(32), sTSOP1(32), TSOP1(32), mBGA(36)	Prod	
2M	128Kx16	IS62WV12816ALL/BLL	1.65V-3.6V	45,55,70	mBGA(48),TSOP2(44)	Prod	2CS Option Avail.
	128Kx16	IS62WV12816DALL/DBLL	1.8V-3.6V	35,45,55	mBGA(48),TSOP2(44)	Prod	2CS Option Avail.
	256Kx8	IS62WV2568ALL/BLL	1.65V-3.6V	45,55,70	sTSOP1(32),TSOP1(32),mBGA(36)	Prod	
	256Kx8	IS62WV2568DALL/DBLL	1.8V-3.6V	35,45,55	sTSOP1(32),TSOP1(32),mBGA(36)	Prod	
4M	256Kx16	IS62WV25616DALL/DBLL	1.65V-3.6V	45,55	TSOP2(44), mBGA(48)	Prod	
	512Kx8	IS62WV5128DALL/DBLL	1.65V-3.6V	45,55	sTSOP1(32),TSOP1(32), TSOP2(32), mBGA(36),SOP(32)	Prod	
8M	512Kx16	IS62WV51216ALL/BLL	1.65V-3.6V	45,55	mBGA(48),TSOP2(44)	Prod	
	1MX8	IS62WV10248DALL/BLL	1.65V-3.6V	45,55	mBGA(48),TSOP2(44)	Prod	

Pseudo SRAM

Den	Org	Part No.	Vcc	Speed (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾⁽⁶⁾	Comment
8M	512Kx16	IS66WV51216DALL	1.7V-1.95V	70	BGA(48),TSOP2(44)	Prod	Standard Asynch
	512Kx16	IS66WV51216DBLL	2.5V-3.6V	55, 70	BGA(48),TSOP2(44)	Prod	Standard Asynch
16M	1Mx16	IS66WV1M16DALL/DBLL	1.7V-3.6V	70	TFBGA(48)	Prod	Standard Asynch
	1Mx16	IS66WVE1M16ALL	1.8V	70	TFBGA(48)	Prod	Asynch/Page
	1Mx16	IS66WVE1M16BLL	2.7V-3.6V	55,70	TFBGA(48)	Prod	Asynch/Page
32M	2Mx16	IS66WVE2M16DALL	1.8V	70	TFBGA(48)	Prod	Asynch/Page
	2Mx16	IS66WVE2M16DBLL	3.3V	70	TFBGA(48)	Prod	Asynch/Page
64M	4Mx16	IS66WVE4M16ALL	1.8V	70	TFBGA(48)	Prod	Asynch/Page
	4Mx16	IS66WVE4M16BLL	3.3V	70	TFBGA(48)	Prod	Asynch/Page

*Contact SRAM Marketing for questions

Cellular RAM

Den	Org	Part No.	Vcc	Speed (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾⁽⁶⁾	Comment
16M	1Mx16	IS66WVC1M16ALL	1.7V-1.95V	70	VFBGA(54)	Prod	CRAM 1.5
	1Mx16	IS66WVD1M16ALL	1.7V-1.95V	70	VFBGA(54)	Prod	CRAM 2.0
32M	2Mx16	IS66WVC2M16ALL	1.8V	70	VFBGA(54)	Prod	CRAM 1.5
	2Mx16	IS66WVD2M16ALL	1.8V	70	VFBGA(54)	Prod	CRAM 2.0
64M	4Mx16	IS66WVC4M16ALL	1.8V	70	VFBGA(54)	Prod	CRAM 1.5
	4Mx16	IS66WVD4M16ALL	1.8V	70	VFBGA(54)	Prod	CRAM 2.0

Notes: 1. S = Sample 2. Prod = Production 3. 2CS = 2 chip enable

Available in Commercial (0°C to +70°C) and Industrial (-40°C to +85°C) temperature options.

RLDRAM® Memory

RLDRAM® 2 Memory

Den	Org	Interface	Part No.	Pkg (#Pins)	Status
288M	32Mx9	Common I/O	IS49NLC93200	BGA(144)	Prod
	16Mx18	Common I/O	IS49NLC18160	BGA(144)	Prod
	8Mx36	Common I/O	IS49NLC36800	BGA(144)	Prod
	32Mx9	Separate I/O	IS49NLS93200	BGA(144)	Prod
	16Mx18	Separate I/O	IS49NLS18160	BGA(144)	Prod
576M	64Mx9	Common I/O	IS49NLC96400	BGA(144)	Prod
	32Mx18	Common I/O	IS49NLC18320	BGA(144)	Prod
	16Mx36	Common I/O	IS49NLC36160	BGA(144)	Prod
	64Mx9	Separate I/O	IS49NLS96400	BGA(144)	Prod
	32Mx18	Separate I/O	IS49NLS18320	BGA(144)	Prod

RLDRAM® 3 Memory

Den	Org	Interface	Part No.	Pkg (#Pins)	Status
576M	32Mx18	Common I/O	IS49RL18320	BGA(168)	S=NOW
	16Mx36	Common I/O	IS49RL36160	BGA(168)	S=NOW

Notes: 2. RLDRAM® is a registered trademark of Micron Technology, Inc.

Dynamic RAM

3.3V EDO and Fast Page Mode DRAM

Den	Org	Type	Part No.	Vcc	Refresh	RAS (ns)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽³⁾
4M	256Kx16	EDO	IS41LV16256C	3.3V	512	35	TSOP2(40/44)	Prod	
	256Kx16	FP	IS41LV16257C	3.3V	512	35	TSOP2(40/44)	Prod	
16M	1Mx16	EDO	IS41LV16100C	3.3V	1K	50	SOJ(42),TSOP2(44/50)	Prod	
	1Mx16	FP	IS41LV16105C	3.3V	1K	50	SOJ(42),TSOP2(44/50)	Prod	

5V EDO and Fast Page Mode DRAM

Den	Org	Type	Part No.	Vcc	Refresh	RAS (ns)	Pkg (#Pins)	Status ^(1,2)	Comment ⁽³⁾
4M	256Kx16	EDO	IS41C16256C	5V	512	35	TSOP2(40/44)	S=NOW	
	256Kx16	FP	IS41C16257C	5V	512	35	TSOP2(40/44)	S=NOW	
16M	1Mx16	EDO	IS41C16100C	5V	1K	50	SOJ(42),TSOP2(44/50)	Prod	
	1Mx16	FP	IS41C16105C	5V	1K	50	SOJ(42),TSOP2(44/50)	Prod	

3.3V SDR (Single Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2,5)	Comment ^(3,6)
16M	1Mx16	SDR	IS42S16100E	3.3V	2K	200,166,143	TSOP2(50), BGA(60)	Prod	1.8V, 2.5V options
	1Mx16	SDR	IS42S16100F	3.3V	2K	200,166,143	TSOP2(50), BGA(60)	Prod	1.8V option
64M	4Mx16	SDR	IS42S16400F	3.3V	4K	200,166,143	TSOP2(54), BGA(54)	NR	
	4Mx16	SDR	IS42S16400J	3.3V	4K	200,166,143	TSOP2(54), BGA(54) BGA(60)	Prod	1.8V option
	2Mx32	SDR	IS42S32200E	3.3V	4K	200,166,143	TSOP2(86), BGA(90)	Prod	
	2Mx32	SDR	IS42S32200L	3.3V	4K	200,166,143	TSOP2(86), BGA(90)	Prod	1.8V option
128M	16Mx8	SDR	IS42S81600E	3.3V	4K	200,166,143,133	TSOP2(54)	NR	
	16Mx8	SDR	IS42S81600F	3.3V	4K	200,166,143	TSOP2(54)	Prod	

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Do not support mobile features 5. NR = Not recommended for new design 6. 1.8V and/or 2.5V option(s) available.

Dynamic RAM (Cont'd)

3.3V SDR (Single Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2,5)	Comment ^(3,6)
128M	8Mx16	SDR	IS42S16800E	3.3V	4K	200,166,143,133	TSOP2(54), BGA(54)	NR	1.8V, 2.5V options
	8Mx16	SDR	IS42S16800F	3.3V	4K	200,166,143	TSOP2(54), BGA(54)	Prod	
	4Mx32	SDR	IS42S32400E	3.3V	4K	166,143,133	TSOP2(86), BGA(90)	NR	
	4Mx32	SDR	IS42S32400F	3.3V	4K	166,143,133	TSOP2(86), BGA(90)	Prod	
256M	32Mx8	SDR	IS42S83200D	3.3V	8K	166,143,133	TSOP2(54), BGA(54)	NR	
	32Mx8	SDR	IS42S83200G	3.3V	8K	200,166,143,133	TSOP2(54), BGA(54)	Prod	
	16Mx16	SDR	IS42S16160D	3.3V	8K	166, 143,133	TSOP2(54), BGA(54)	NR	1.8V, 2.5V options
	16Mx16	SDR	IS42S16160G	3.3V	8K	200,166, 143,133	TSOP2(54), BGA(54)	Prod	2.5V option
	8Mx32	SDR	IS42S32800D	3.3V	4K	166,143,133	TSOP2(86), BGA(90)	Prod	
	8Mx32	SDR	IS42S32800G	3.3V	4K	200,166,143,133	BGA(90)	Prod	
512M	64Mx8	SDR	IS42S86400B	3.3V	8K	166,143,133	TSOP2(54)	NR	
	64Mx8	SDR	IS42S86400D	3.3V	8K	200,166,143,133	TSOP2(54)	Prod	
	32Mx16	SDR	IS42S16320B	3.3V	8K	166,143,133	TSOP2(54), BGA(54)	NR	
	32Mx16	SDR	IS42S16320D	3.3V	8K	200,166,143,133	TSOP2(54), BGA(54)	Prod	2.5V option
	16Mx32	SDR	IS42S32160B	3.3V	8K	166,143,133	TSOP2(86),BGA(90)	NR	11x13mm BGA
	16Mx32	SDR	IS42S32160C	3.3V	8K	166,133	BGA(90)	NR	stacked die, 8x13mm BGA
	16Mx32	SDR	IS42S32160D	3.3V	8K	166,133	BGA(90)	Prod	8x13mm BGA, 2.5V option

PowerSaver™ / Mobile SDR Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽³⁾
16M	1Mx16	LPSDR	IS42VM16100G	1.8V	4K	166,133	BGA(60)	Prod	
32M	2Mx16	LPSDR	IS42SM16200C	3.3V	4K	166,133	BGA(54)	Prod	
	2Mx16	LPSDR	IS42RM16200C	2.5V	4K	166,133	BGA(54)	Prod	
	2Mx16	LPSDR	IS42VM16200C	1.8V	4K	166,133	BGA(54)	Prod	
	1Mx32	LPSDR	IS42SM32100C	3.3V	4K	166,133	BGA(90)	Prod	
	1Mx32	LPSDR	IS42RM32100C	2.5V	4K	166,133	BGA(90)	Prod	
	1Mx32	LPSDR	IS42VM32100C	1.8V	4K	166,133	BGA(90)	Prod	
64M	4Mx16	LPSDR	IS42SM16400K	3.3V	4K	166,133	BGA(54)	Prod	
	4Mx16	LPSDR	IS42RM16400K	2.5V	4K	166,133	BGA(54)	Prod	
	4Mx16	LPSDR	IS42VM16400K	1.8V	4K	166,133	BGA(54)	Prod	
	2Mx32	LPSDR	IS42SM32200K	3.3V	4K	166,133	BGA(90)	Prod	
	2Mx32	LPSDR	IS42RM32200K	2.5V	4K	166,133	BGA(90)	Prod	
	2Mx32	LPSDR	IS42VM32200K	1.8V	4K	166,133	BGA(90)	Prod	
128M	8Mx16	LPSDR	IS42SM16800G	3.3V	4K	166,133	BGA(54)	Prod	
	8Mx16	LPSDR	IS42RM16800G	2.5V	4K	166,133	BGA(54)	Prod	
	8Mx16	LPSDR	IS42VM16800G	1.8V	4K	166,133	BGA(54)	Prod	
	4Mx32	LPSDR	IS42SM32400G	3.3V	4K	166,133	BGA(90)	Prod	
	4Mx32	LPSDR	IS42RM32400G	2.5V	4K	166,133	BGA(90)	Prod	
	4Mx32	LPSDR	IS42VM32400G	1.8V	4K	166,133	BGA(90)	Prod	
256M	16Mx16	LPSDR	IS42SM16160D	3.3V	8K	143	TSOP2(54),BGA(54)	NR	
	16Mx16	LPSDR	IS42RM16160D	2.5V	8K	143	TSOP2(54),BGA(54)	NR	
	16Mx16	LPSDR	IS42VM16160D	1.8V	8K	125	TSOP2(54),BGA(54)	NR	

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Do not support mobile features 5. NR = Not recommended for new design 6. 1.8V and/or 2.5V option(s) available.

Dynamic RAM (Cont'd)

PowerSaver™ / Mobile SDR Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽³⁾
256M	16Mx16	LPDDR	IS42SM16160E	3.3V	8K	166,133	BGA(54)	Prod	
	16Mx16	LPDDR	IS42RM16160E	2.5V	8K	166,133	BGA(54)	Prod	
	16Mx16	LPDDR	IS42VM16160E	1.8V	8K	166,133	BGA(54)	Prod	
	8Mx32	LPDDR	IS42SM32800D	3.3V	4K	133	TSOP2(86),BGA(90)	NR	
	8Mx32	LPDDR	IS42RM32800D	2.5V	4K	133	TSOP2(86),BGA(90)	NR	
	8Mx32	LPDDR	IS42VM32800D	1.8V	4K	100	TSOP2(86),BGA(90)	NR	
	8Mx32	LPDDR	IS42SM32800E	3.3V	4K	166,133	BGA(90)	Prod	
	8Mx32	LPDDR	IS42RM32800E	2.5V	4K	166,133	BGA(90)	Prod	
	8Mx32	LPDDR	IS42VM32800E	1.8V	4K	166,133	BGA(90)	Prod	
512M	32Mx16	LPDDR	IS42VM16320D	1.8V	8K	166,133	BGA(54)	Prod	8x13mm BGA
	16Mx32	LPDDR	IS42SM32160C	3.3V	8K	133	BGA(90)	Prod	8x13mm BGA
	16Mx32	LPDDR	IS42RM32160C	2.5V	8K	133	BGA(90)	Prod	8x13mm BGA
	16Mx32	LPDDR	IS42VM32160D	1.8V	8K	166,133	BGA(90)	Prod	8x13mm BGA

2.5V DDR (Double Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽³⁾
64M	4Mx16	DDR	IS43R16400B	2.5V	4K	250,200,166,133	TSOP2(66)	Prod	
128M	8Mx16	DDR	IS43R16800E	2.5V	4K	200,166	TSOP2(66), BGA(60)	Prod	
	4Mx32	DDR	IS43R32400D	2.5V	4K	250,200,166	BGA(144)	NR	
	4Mx32	DDR	IS43R32400E	2.5V	4K	250,200,166	BGA(144)	Prod	
256M	32Mx8	DDR	IS43R83200B	2.5V	8K	200,166	TSOP2(66)	NR	
	32Mx8	DDR	IS43R83200D	2.5V	8K	200,166,133	TSOP2(66)	Prod	
	16Mx16	DDR	IS43R16160B	2.5V	8K	200,166	TSOP2(66), BGA(60)	NR	
	16Mx16	DDR	IS43R16160D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	
	8Mx32	DDR	IS43R32800B	2.5V	4K	200,166	BGA(144)	NR	
	8Mx32	DDR	IS43R32800D	2.5V	4K	200,166,133	BGA(144)	Prod	
512M	64Mx8	DDR	IS43R86400D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	
	32Mx16	DDR	IS43R16320D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	
	16Mx32	DDR	IS43R32160D	2.5V	8K	200,166,133	BGA(144)	Prod	

1.8V Mobile DDR (Double Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2)	Comment ⁽³⁾
32M	2Mx16	MDDR	IS43LR16200C	1.8V	4K	166,133	BGA(60)	Prod	
	1Mx32	MDDR	IS43LR32100C	1.8V	4K	166,133	BGA(90)	Prod	
64M	4Mx16	MDDR	IS43LR16400B	1.8V	4K	166,133	BGA(60)	Prod	
	2Mx32	MDDR	IS43LR32200B	1.8V	4K	166,133	BGA(90)	Prod	
128M	8Mx16	MDDR	IS43LR16800F	1.8V	4K	166,133	BGA(60)	Prod	
	4Mx32	MDDR	IS43LR32400F	1.8V	4K	166,133	BGA(90)	Prod	
256M	16Mx16	MDDR	IS43LR16160F	1.8V	8K	200,166,133	BGA(60)	Prod	
	8Mx32	MDDR	IS43LR32800F	1.8V	4K	200,166,133	BGA(90), PoP(152)	Prod	
512M	32Mx16	MDDR	IS43LR16320B	1.8V	8K	166,133	BGA(60)	Prod	
	32Mx16	MDDR	IS43LR16320C	1.8V	8K	200,166,133	BGA(60)	S=Q1/13	
	16Mx32	MDDR	IS43LR32160B	1.8V	8K	166,133	BGA(90), PoP(152)	Prod	
	16Mx32	MDDR	IS43LR32160C	1.8V	8K	200,166,133	BGA(90), PoP(152)	S=Q1/13	
1G	64Mx16	MDDR	IS43LR16640A	1.8V	8K	200,166,133	BGA(60)	S=NOW	
	32Mx32	MDDR	IS43LR32320A	1.8V	8K	166,133	BGA(90)	S=NOW	
2G	64Mx32	MDDR	IS43LR32640A	1.8V	8K	200,166	BGA(90)	S=Q1/13	

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Do not support mobile features 5. NR = Not recommended for new design 6. 1.8V and/or 2.5V option(s) available.

Dynamic RAM (Cont'd)

1.8V DDR2 (Double Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽³⁾
256M	32Mx8	DDR2	IS43DR83200A	1.8V	8K	800,667,533,400	BGA(60)	Prod	
	16Mx16	DDR2	IS43DR16160A	1.8V	8K	800,667,533,400	BGA(84)	Prod	
	16Mx16	DDR2	IS43DR16160B	1.8V	8K	800,667,533,400	BGA(84)	S=NOW	
	8Mx32	DDR2	IS43DR32801A	1.8V	8K	533,400	BGA(126)	Prod	Reduced Page
	8Mx32	DDR2	IS43DR32801B	1.8V	8K	800,667,533,400	BGA(126)	S=NOW	Reduced Page
512M	64Mx8	DDR2	IS43DR86400B	1.8V	8K	800,667,533,400	BGA(60)	NR	
	64Mx8	DDR2	IS43DR86400C	1.8V	8K	800,667,533,400	BGA(60)	S=NOW	
	32Mx16	DDR2	IS43DR16320B	1.8V	8K	800,667,533,400	BGA(84)	NR	
	32Mx16	DDR2	IS43DR16320C	1.8V	8K	800,667,533,400	BGA(84)	S=NOW	
	16Mx32	DDR2	IS43DR32160C	1.8V	8K	800,667,533,400	BGA(126)	S=NOW	
1G	128Mx8	DDR2	IS43DR81280A	1.8V	8K	800,667,533,400	BGA(60)	NR	
	128Mx8	DDR2	IS43DR81280B	1.8V	8K	800,667,533,400	BGA(60)	Prod	
	64Mx16	DDR2	IS43DR16640A	1.8V	8K	800,667,533,400	BGA(84)	NR	
	64Mx16	DDR2	IS43DR16640B	1.8V	8K	800,667,533,400	BGA(84)	Prod	
2G	128Mx16	DDR2	IS43DR16128	1.8V	8K	667,533,333	BGA(84)	Prod	Stacked die, 10.5x13.5mm BGA
	128Mx16	DDR2	IS43DR16128A	1.8V	8K	667,533,333	BGA(84)	S=NOW	Stacked die, 10.5x13.5mm BGA

1.5V DDR3 (Double Data Rate) Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽⁷⁾
1G	128Mx8	DDR3	IS43TR81280A	1.5V	8K	1866,1600,1333,1066	BGA(78)	S=NOW	
	64Mx16	DDR3	IS43TR16640A	1.5V	8K	1866,1600,1333,1066	BGA(96)	S=NOW	
2G	256Mx8	DDR3	IS43TR82560A	1.5V	8K	1866,1600,1333,1066	BGA(78)	S=NOW	
	128Mx16	DDR3	IS43TR16128A	1.5V	8K	1866,1600,1333,1066	BGA(96)	S=NOW	

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Support mobile features 5. NR = Not recommended for new design 6. KGD available for most products. Contact your ISSI sales channel. 7. Contact ISSI for 1.35V Low Voltage option.

1.35V DDR3L (Double Data Rate) Synchronous Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽⁷⁾
1G	128Mx8	DDR3	IS43TR81280AL	1.35V	8K	1600,1333,1066	BGA(78)	S=NOW	
	64Mx16	DDR3	IS43TR16640AL	1.35V	8K	1600,1333,1066	BGA(96)	S=NOW	
2G	256Mx8	DDR3	IS43TR82560AL	1.35V	8K	1600,1333,1066	BGA(78)	S=NOW	
	128Mx16	DDR3	IS43TR16128AL	1.35V	8K	1600,1333,1066	BGA(96)	S=NOW	

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Support mobile features 5. NR = Not recommended for new design 6. KGD available for most products. Contact your ISSI sales channel. 7. Contact ISSI for 1.35V Low Voltage option.

Automotive Memory Products

Automotive Synchronous SRAM

Den	Org	Part No.	Vcc	VccQ	Speed (Mhz)	tKQ (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ^(3,4,5,6)
4M	128Kx32	IS64VPS12832A	2.5V	2.5V	200	3.1	TQFP(100), PBGA(165)	Prod	P/SC
	128Kx36	IS64VPS12836A	2.5V	2.5V	200	3.1	TQFP(100), PBGA(165)	Prod	P/SC
	256Kx18	IS64VPS25618A	2.5V	2.5V	200	3.1	TQFP(100)	Prod	P/SC
	128Kx32	IS64VPS12832EC	2.5V	2.5V	250, 200	2.6, 3.1	PBGA(119), TQFP(100), BGA(165)	S=Q4/12	P/SC, ECC feature
	128Kx36	IS64VPS12836EC							
	256Kx18	IS64VPS25618EC							
	128Kx32	IS64LPS12832A	3.3V	2.5V/3.3V	200	3.1	TQFP(100), PBGA(165)	Prod	P/SC
	128Kx36	IS64LPS12836A	3.3V	2.5V/3.3V	200	3.1	TQFP(100), PBGA(165)	Prod	P/SC
	256Kx18	IS64LPS25618A	3.3V	2.5V/3.3V	200	3.1	TQFP(100)	Prod	P/SC
	28Kx32	IS64LPS12832EC	3.3V	3.3V/2.5V	250, 200	2.6, 3.1	PBGA(119), TQFP(100), BGA(165)	S=Q4/12	P/SC, ECC feature
	128Kx36	IS64LPS12836EC							
	256Kx18	IS64LPS25618EC							
128Kx36	128Kx32	IS64LF12832A	3.3V	2.5V/3.3V	117	7.5	TQFP(100), PBGA(165)	Prod	F
	128Kx36	IS64LF12836A	3.3V	2.5V/3.3V	117	7.5	TQFP(100), PBGA(165)	Prod	F
	256Kx18	IS64LF25618A	3.3V	2.5V/3.3V	117	7.5	TQFP(100)	Prod	F
	128Kx32	IS64LF12832EC	3.3V	3.3V/2.5V	133, 117	6.5,7.5	PBGA(119), TQFP(100), BGA(165)	S=Q4/12	P/SC, ECC feature
	128Kx36	IS64LF12836EC							
	256Kx18	IS64LF25618EC							
	128Kx32	IS64VF12832A	2.5V	2.5V	117	7.5	TQFP(100), PBGA(165)	Prod	F
	128Kx36	IS64VF12836A	2.5V	2.5V	117	7.5	TQFP(100), PBGA(165)	Prod	F
	256Kx18	IS64VF25618A	2.5V	2.5V	117	7.5	TQFP(100)	Prod	F
	128Kx32	IS64VF12832EC	2.5V	2.5V	133, 117	6.5,7.5	PBGA(119), TQFP(100), BGA(165)	S=Q4/12	P/SC, ECC feature
	128Kx36	IS64VF12836EC							
	256Kx18	IS64VF25618EC							
9M	512Kx18	IS64LF51218A	3.3V	2.5V/3.3V	117	7.5	TQFP(100), PBGA(165)	Prod	F, copper ⁽⁹⁾
	256Kx36	IS64LF25636A	3.3V	2.5V/3.3V	117	7.5	TQFP(100), PBGA(165)	Prod	F, copper ⁽⁹⁾
	256Kx36	IS64LPS25636A	3.3V	2.5V/3.3V	166	2.6	TQFP(100), PBGA(165)	Prod	P/SC, copper ⁽⁹⁾

Automotive Asynchronous SRAM

Den	Org	Part No.	Vcc	Speeds (ns)	Pkg (#Pins)	Status ⁽¹⁾⁽²⁾	Comment ⁽⁶⁾
256K	32Kx8	IS65C256AL	5V	25,45	SOP(28),TSOP1(28)	Prod	
	32Kx8	IS65LV256AL	3.3V	45	SOP(28),TSOP1(28)	Prod	
512K	32Kx16	IS64WV3216BLL	2.5V-3.6V	15	TSOP2(44), mBGA(48)	Prod	
1M	64Kx16	IS64C6416AL	4.5V-5.5V	15	SOJ(44),TSOP2(44)	Prod	
	64Kx16	IS64WV6416BLL	2.5V-3.6V	15	TSOP2(44),mBGA(48)	Prod	
	128Kx8	IS64C1024AL	5.0V	15	SOJ(32.4),TSOP1(32)	Prod	
	128Kx8	IS64WV1024BLL	2.5V-3.6V	15	TSOP2(32),mBGA(48),sTSOP1(32)	Prod	
	128Kx8	IS65WV1288BLL	2.5V-3.6V	55	TSOP1(32),sTSOP1(32)	Prod	
	128Kx8	IS65C1024AL	5.0V	45	SOP(32),TSOP1(32)	Prod	
2M	256Kx8	IS64WV2568EDBLL	2.4V-3.6V	10	SOJ(36),TSOP2(44),mBGA(36)	Prod	ECC based SRAM
	128Kx16	IS65WV12816ALL/BLL	1.65V-3.6V	55,70	TSOP2(44),mBGA(48)	Prod	
	128Kx16	IS64WV12816DBLL	2.4V-3.6V	12	TSOP2(44),mBGA(48)	Prod	
4M	512Kx8	IS64WV5128BLL/BLS	2.4V-3.6V	10	TSOP2(44),mBGA(36)	Prod	
	512Kx8	IS64WV5128EDBLL	2.4V-3.6V	10	TSOP2(44),mBGA(36)	Prod	ECC based SRAM
	256Kx16	IS64WV25616BLL/BLS	2.4V-3.6V	10	TSOP2(44),mBGA(48)	Prod	
	256Kx16	IS64WV25616EDBLL	2.4V-3.6V	10	TSOP2(44),mBGA(48)	Prod	ECC based SRAM
	256Kx16	IS65WV25616ALL/BLL	1.65V-3.3V	55,70	TSOP2(44),mBGA(48)	Prod	
8M	512Kx16	IS64WV51216BLL	2.4V-3.3V	10	TSOP2(44),mBGA(48)	Prod	
16M	1Mx16	IS64WV102416BLL	2.4V-3.6V	10	TSOP1(48),mBGA(48)	Prod	
	2Mx8	IS64WV20488BLL	2.4V-3.6V	10	TSOP2(44),mBGA(48)	Prod	

Automotive Memory Products (Cont'd)

3.3V Synchronous Automotive DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (MHz)	Pkg (#Pins)	Status ^(1,2)	Comment
16M	1Mx16	IS45S16100E	3.3V	2K	166,143	TSOP2(50), BGA(60)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	1Mx16	IS45S16100F	3.3V	2K	166,143	TSOP2(50), BGA(60)	Contact ISSI	A2 ⁽⁸⁾ , copper ⁽⁹⁾
64M	4Mx16	IS45S16400F	3.3V	4K	166,143	TSOP2(54), BGA(54)	NR	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	4Mx16	IS45S16400J	3.3V	4K	166,143	TSOP2(54), BGA(54)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾ 1.8V option ⁽¹⁰⁾
	2Mx32	IS45S32200E	3.3V	4K	166,143	TSOP2(86), BGA(90)	Prod	A2 ⁽⁸⁾
	2Mx32	IS45S32200L	3.3V	4K	166,143	TSOP2(86), BGA(90)	Prod	1.8V option ⁽¹⁰⁾

Notes: 1. S = Samples 2. Prod = Production 3. P = Pipeline 4. F = Flow Through 5. SC = Single Cycle Deselect 6. Available in automotive temperature grade of -40°C to +125°C 7. NR = Not recommended for new design 8. Available in automotive temperature grade of -40°C to +105°C 9. Available in copper leadframe 10. 1.8V and/or 2.5V option(s) available

3.3V Synchronous Automotive DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (MHz)	Pkg (#Pins)	Status ^(1,2)	Comment
128M	16Mx8	IS45S81600E	3.3V	4K	166,143	TSOP2(54)	NR	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	16Mx8	IS45S81600F	3.3V	4K	166,143	TSOP2(54)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	8Mx16	IS45S16800E	3.3V	4K	166,143	TSOP2(54), BGA(54)	NR	A2 ⁽⁸⁾ , copper ⁽⁹⁾ 1.8V, 2.5V option ⁽¹⁰⁾
	8Mx16	IS45S16800F	3.3V	4K	166,143	TSOP2(54), BGA(54)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	4Mx32	IS45S32400E	3.3V	4K	166,143	TSOP2(86), BGA(90)	NR	
	4Mx32	IS45S32400F	3.3V	4K	166,143	TSOP2(86), BGA(90)	Prod	A2 ⁽⁸⁾
256M	32Mx8	IS45S83200D	3.3V	8K	166,143	TSOP2(54), BGA(54)	NR	A2 ⁽⁸⁾ , copper ⁽⁹⁾
	32Mx8	IS45S83200G	3.3V	8K	166,143	TSOP2(54), BGA(54)	Prod	A2 ⁽⁸⁾
	16Mx16	IS45S16160D	3.3V	8K	166,143	TSOP2(54), BGA(54)	NR	A2 ⁽⁸⁾ , copper ⁽⁹⁾ 1.8V, 2.5V option ⁽¹⁰⁾
	16Mx16	IS45S16160G	3.3V	8K	166,143	TSOP2(54), BGA(54)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾ 2.5V option ⁽¹⁰⁾
	8Mx32	IS45S32800D	3.3V	4K	166,143	TSOP2(86), BGA(90)	Prod	A2 ⁽⁸⁾
	8Mx32	IS45S32800G	3.3V	4K	166,143	BGA(90)	Prod	A2 ⁽⁸⁾
512M	32Mx16	IS45S16320B	3.3V	8K	143	TSOP2(54), BGA(54)	NR	copper ⁽⁹⁾
	32Mx16	IS45S16320D	3.3V	8K	166,143,133	TSOP2(54), BGA(54)	Prod	A2 ⁽⁸⁾ , copper ⁽⁹⁾ 2.5V option ⁽¹⁰⁾
	16Mx32	IS45S32160B	3.3V	8K	143	TSOP2(86), BGA(90)	NR	
	16Mx32	IS45S32160D	3.3V	8K	166,143,133	BGA(90)	Prod	A2 ⁽⁸⁾ , 2.5V option ⁽¹⁰⁾

2.5V DDR (Double Data Rate) Synchronous Automotive DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2)	Comment
64M	4Mx16	IS46R16400B	2.5V	4K	200,166	TSOP2(66)	Prod	A2 ⁽⁸⁾
128M	4Mx32	IS46R32400E	2.5V	4K	200,166	BGA(144)	Prod	A2 ⁽⁸⁾
256M	32Mx8	IS46R83200B	2.5V	8K	166	TSOP2(66)	NR	
	32Mx8	IS46R83200D	2.5V	8K	200,166,133	TSOP2(66)	Prod	A2 ⁽⁸⁾
	16Mx16	IS46R16160B	2.5V	8K	200,166	TSOP2(66), BGA(60)	NR	
	16Mx16	IS46R16160D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	A2 ⁽⁸⁾
	8Mx32	IS46R32800B	2.5V	4K	200,166	BGA(144)	NR	
	8Mx32	IS46R32800D	2.5V	4K	200,166,133	BGA(144)	Prod	A2 ⁽⁸⁾
512M	64Mx8	IS46R86400D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	A2 ⁽⁸⁾
	32Mx16	IS46R16320D	2.5V	8K	200,166,133	TSOP2(66), BGA(60)	Prod	A2 ⁽⁸⁾
	16Mx32	IS46R32160D	2.5V	8K	200,166,133	BGA(144)	Prod	A2 ⁽⁸⁾

Notes: 1. S = Samples 2. Prod = Production 3. P = Pipeline 4. F = Flow Through 5. SC = Single Cycle Deselect 6. Available in automotive temperature grade of -40°C to +125°C 7. NR = Not recommended for new design 8. Available in automotive temperature grade of -40°C to +105°C 9. Available in copper leadframe 10. 1.8V and/or 2.5V option(s) available

Automotive Memory Products (Cont'd)

1.8V Mobile DDR (Double Data Rate) Synchronous Automotive DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (Mhz)	Pkg (#Pins)	Status ^(1,2)	Comment
32M	2Mx16	IS46LR16200C	1.8V	4K	166,133	BGA(60)	Prod	A2 ⁽⁸⁾
	1Mx32	IS46LR32100C	1.8V	4K	166,133	BGA(90)	Prod	A2 ⁽⁸⁾
64M	4Mx16	IS46LR16400B	1.8V	4K	166,133	BGA(60)	Prod	A2 ⁽⁸⁾
	2Mx32	IS46LR32200B	1.8V	4K	166,133	BGA(90)	Prod	A2 ⁽⁸⁾
128M	8Mx16	IS46LR16800F	1.8V	4K	166,133	BGA(60)	Prod	A2 ⁽⁸⁾
	4Mx32	IS46LR32400F	1.8V	4K	166,133	BGA(90)	Prod	A2 ⁽⁸⁾
256M	16Mx16	IS46LR16160F	1.8V	8K	200,166,133	BGA(60)	Prod	A2 ⁽⁸⁾
	8Mx32	IS46LR32800F	1.8V	4K	200,166,133	BGA(90), PoP(152)	Prod	A2 ⁽⁸⁾
512M	32Mx16	IS46LR16320B	1.8V	8K	166,133	BGA(60)	Prod	A2 ⁽⁸⁾
	16Mx32	IS46LR32160B	1.8V	8K	166,133	BGA(90)	Prod	A2 ⁽⁸⁾
	32Mx16	IS46LR16320C	1.8V	8K	200,166,133	BGA(60)	S=Q1/13	A2 ⁽⁸⁾
	16Mx32	IS46LR32160C	1.8V	8K	200,166,133	BGA(90)	S=Q1/13	A2 ⁽⁸⁾
1G	64Mx16	IS46LR16640A	1.8V	8K	200,166,133	BGA(60)	S=NOW	A2 ⁽⁸⁾
	32Mx32	IS46LR32320A	1.8V	8K	166,133	BGA(90)	S=Q1/13	A2 ⁽⁸⁾
2G	64Mx32	IS46LR32640A	1.8V	8K	200,166	BGA(90)	S=Q1/13	A2 ⁽⁸⁾

1.8V DDR2 (Double Data Rate) Synchronous Automotive DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2)	Comment
256M	32Mx8	IS46DR83200A	1.8V	8K	667,533,400	BGA(60)	Prod	A2 ⁽⁸⁾
	16Mx16	IS46DR16160A	1.8V	8K	667,533,400	BGA(84)	Prod	A2 ⁽⁸⁾
	16Mx16	IS46DR16160B	1.8V	8K	800,667,533,400	BGA(84)	S=NOW	A2 ⁽⁸⁾
	8Mx32	IS46DR32801A	1.8V	8K	400	BGA(126)	Prod	A2 ⁽⁸⁾
	8Mx32	IS46DR32801B	1.8V	8K	667,533,400	BGA(126)	S=NOW	A2 ⁽⁸⁾
512M	64Mx8	IS46DR86400B	1.8V	8K	800,667,533,400	BGA(60)	NR	A2 ⁽⁸⁾
	64Mx8	IS46DR86400C	1.8V	8K	800,667,533,400	BGA(60)	S=NOW	A2 ⁽⁸⁾
	32Mx16	IS46DR16320B	1.8V	8K	800,667,533,400	BGA(84)	NR	A2 ⁽⁸⁾
	32Mx16	IS46DR16320C	1.8V	8K	800,667,533,400	BGA(84)	S=NOW	A2 ⁽⁸⁾
	16Mx32	IS46DR32160C	1.8V	8K	667,533,400	BGA(126)	S=NOW	A2 ⁽⁸⁾
1G	128Mx8	IS46DR81280A	1.8V	8K	800,667,533,400	BGA(60)	NR	A2 ⁽⁸⁾
	128Mx8	IS46DR81280B	1.8V	8K	800,667,533,400	BGA(60)	Prod	A2 ⁽⁸⁾
	64Mx16	IS46DR16640A	1.8V	8K	800,667,533,400	BGA(84)	NR	A2 ⁽⁸⁾
	64Mx16	IS46DR16640B	1.8V	8K	800,667,533,400	BGA(84)	Prod	A2 ⁽⁸⁾
2G	128Mx16	IS46DR16128	1.8V	8K	667,533,333	BGA(84)	Prod	A2 ⁽⁸⁾
	128Mx16	IS46DR16128A	1.8V	8K	667,533,333	BGA(84)	S=NOW	A2 ⁽⁸⁾

1.5V DDR3 (Double Data Rate) Synchronous DRAM

Den	Org	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽¹⁰⁾
1G	128Mx8	IS46TR81280A	1.5V	8K	1600,1333,1066	BGA(78)	S=NOW	A2 ⁽⁸⁾
	64Mx16	IS46TR16640A	1.5V	8K	1600,1333,1066	BGA(96)	S=NOW	A2 ⁽⁸⁾
2G	256Mx8	IS46TR82560A	1.5V	8K	1600,1333,1066	BGA(78)	S=NOW	A2 ⁽⁸⁾
	128Mx16	IS46TR16128A	1.5V	8K	1600,1333,1066	BGA(96)	S=NOW	A2 ⁽⁸⁾

Notes: 1. S = Samples 2. Prod = Production 3. P = Pipeline 4. F = Flow Through 5. SC = Single Cycle Deselect 6. Available in automotive temperature grade of -40°C to +125°C 7. NR = Not recommended for new design 8. Available in automotive temperature grade of -40°C to +105°C 9. Available in copper leadframe 10. Contact ISSI for 1.35V Low Voltage option.

1.35V DDR3L (Double Data Rate) Synchronous Synchronous DRAM

Den	Org	Type	Part No.	Vcc	Refresh	Speed (MT/s)	Pkg (#Pins)	Status ^(1,2,5)	Comment ⁽⁷⁾
1G	128Mx8	DDR3	IS46TR81280AL	1.35V	8K	1600,1333,1066	BGA(78)	S=NOW	A2 ⁽⁸⁾
	64Mx16	DDR3	IS46TR16640AL	1.35V	8K	1600,1333,1066	BGA(96)	S=NOW	A2 ⁽⁸⁾
2G	256Mx8	DDR3	IS46TR82560AL	1.35V	8K	1600,1333,1066	BGA(78)	S=NOW	A2 ⁽⁸⁾
	128Mx16	DDR3	IS46TR16256AL	1.35V	8K	1600,1333,1066	BGA(96)	S=NOW	A2 ⁽⁸⁾

Notes: 1. S = Sample 2. Prod = Production 3. Industrial temp: -40°C to +85°C 4. Support mobile features 5. NR = Not recommended for new design 6. KGD available for most products. Contact your ISSI sales channel. 7. Contact ISSI for 1.35V Low Voltage option.

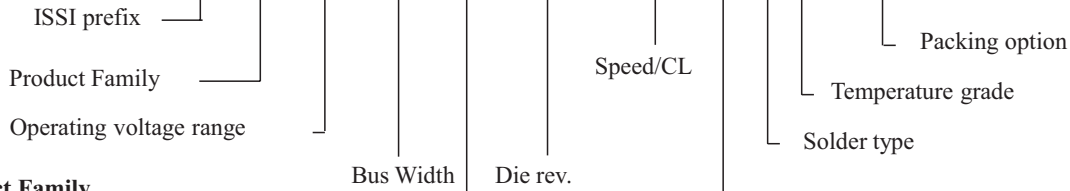
ORDERING INFORMATION FOR ISSI SRAM DEVICES

	<u>IS</u> <u>61</u> <u>WV</u> <u>12816</u> <u>DBLL</u> - <u>10</u> <u>T</u> <u>L</u> <u>I</u> - <u>TR</u>		
ISSI prefix			Packing Option
Product Family			Temperature Grade
Operating Voltage Range/Product Type			Solder Type
Density/Configuration			Package Code
Die Rev/Voltage Range			Speed (ns or MHz)

<p>SRAM Product Family</p> <p>61/63 = High Speed 62 = Low Power 64 = Automotive High Speed 65 = Automotive Low Power 66 = Pseudo SRAM 67 = Automotive PSRAM</p> <p>Density/Configuration Example:</p> <p>25636 = 256Kx36 51216 = 512Kx16 1M36 = 1Mx36</p>	<p>Die Rev/Voltage Range</p> <p><u>Die Rev</u> Blank-Z</p> <p><u>Voltage Range (WV)</u> ALL = 1.65V to 2.2V BLL = 2.5V to 3.6V</p> <p>Operating Voltage Range/ Product Type</p> <p><u>Asynchronous SRAM</u> C = 5V LV = 3.3V WV = Wide Voltage Range</p> <p><u>Synchronous SRAM</u> P = Pipeline, F = Flowthrough NLP/NLF/NVP/NVF = No-Wait Option LP/LF: Vcc = 3.3V, VccQ = 3.3V/2.5V VP/VF: Vcc = 2.5V, VccQ = 2.5V QD = QUAD, DD = DDR-II Common I/O: Vcc = 1.8V , VccQ = 1.8V/1.5V</p>	<p>Packing Option</p> <p>Blank = Tray or Tube TR = Tape & Reel</p> <p>Temperature Grade</p> <p>Blank = Commercial (0°C to 70°C) I = Industrial (-40°C to 85°C) A1 = Automotive (-40°C to 85°C) A2 = Automotive (-40°C to 105°C) A3 = Automotive (-40°C to 125°C)</p>	<p>Solder Type</p> <p>Blank = SnPb L = Lead-free (RoHS Compliant)</p> <p>Package Code</p> <p>B, B1, B2, B3 = BGA CT = Copper TSOP H = sTSOP J = 300-mil SOJ K = 400-mil SOJ LQ = LQFP M, M3, = BGA Q = SOP T/T2 = TSOP TQ = TQFP U = SOP</p> <p>Speed (ns or MHz)</p> <p>Example:</p> <p>8 = 8ns 200 = 200MHz</p>
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ORDERING INFORMATION FOR ISSI DRAM DEVICES

IS 43 DR 8 1280 B - 25D B L I - TR



SDRAM Product Family

- 41 = Asynchronous
- 42 = SDR Commercial/Industrial grade
- 43 = DDR/DDR2/DDR3 Commercial/Industrial grade
- 45 = SDR Automotive grade
- 46 = DDR/DDR2/DDR3 Automotive grade

Operating Voltage Range

Asynchronous: Fast Page and EDO

- C = 5V
- LV = 3.3V

Synchronous

- S = 3.3V SDR
- SM/RM/VM = 3.3V/2.5V/1.8V mobile SDR
- VS = 1.8V SDR
- R = 2.5V DDR or 2.5V SDR
- LR = 1.8V mobile DDR
- DR = DDR2
- TR = DDR3

Bus Width

- 8 = x8
- 16 = x16
- 32 = x32

Words

- 100 = 1M
- 200 = 2M
- ...
- 160 = 16M
- 320 = 32M

Speed

- 7 = up to 143Mhz
- 6 = up to 166Mhz
- 75E = up to 133Mhz @ CL2
- 5 = up to 200Mhz
- 37 = up to 266Mhz
- 3 = up to 333Mhz
- 25 = up to 400Mhz
- 187 = up to 533Mhz (DDR3-1066)
- 15 = up to 667Mhz (DDR3-1333)
- 125 = up to 800Mhz (DDR3-1600)

CAS Latency (CL)

- B = 3, C = 4, D = 5, E = 6, F = 7,
 - G = 8, H = 9, J = 10, K = 11, L = 12,
 - M = 13
- (Not all speeds and CL's available for all products.)

Package type

Generation (Rev)

A-Z

Package Type

- B = BGA
- CT = Copper TSOP
- T = TSOP

Solder Type

- Blank = Sn/Pb
- N = NiPdAu plating
- L = 100% matte Sn for non-BGA
- L = SnAgCu for BGA

Temperature Grade

- Blank = Commercial grade (0C to +70C)
 - I = Industrial grade (-40C to +85C)
 - A1 = Automotive grade (-40C to +85C)
 - A2 = Automotive grade (-40C to +105C)
- (Ambient temperature limits shown for most products)

Audio Amplifier

ISSI offers a wide range of Audio Power Amplifier support from general purpose applications to portable and mobile applications; from Class-AB, Class-D to Class-G for ceramic speaker direct drive. The proprietary UTQFN package provides a small size but low cost package solution for mobile phones and portable device applications. Amplifiers with Tone and 3D control are widely used at mini-desktop Hi-Fi system with cell phone docking.

Class-AB Audio Power Amplifier with or without Headphone Driver

Part No.	No. of Channel	Power (W)	THD+N (kHs)	PSRR (dB)	VDD (V)	ISD (uA)	IDD (mA)	Package (Size in mm)	Key Feature	Status
IS31AP4990D	1	1.2	0.23%	61	2.7 - 5.5	1	3.8	UTQFN-9L (1.5x1.5)	1.2W Mono Audio Power Amplifier in UTQFN Package	Prod
IS31AP4991	1	1.2	0.03%	65	2.7 - 5.5	1	4.8	MSOP-8 (3.0x5.0) SOP-8 (5.0x6.0)	1.2W Mono Audio Power Amplifier	Prod
IS31AP4066D	2	1.3	0.10%	60	2.7 - 5.5	1.1	3.9	QFN-16 (3.0x3.0)	Dual 1.3W Stereo Audio Power Amplifier	Prod
IS31AP4088D	2	2.6	0.10%	60	2.7 - 5.5	1	4.5	QFN-16 (4.0x4.0)	Dual 2.6W Stereo Audio Power Amplifier	Prod
IS31AP4088A	2+2 HP	2.84	0.06%	80	2.7 - 5.5	1	5.7	QFN-16 (4.0x4.0)	Dual 2.84W Stereo Audio Power Amplifier with Headphone Driver	Prod
IS31AP4832	2+2HP	2.5	0.03%	70	3.0 - 5.5	3	8	QFN-28 (4.0x4.0)	Dual 2.5W Stereo Amplifier with Headphone, Tone Control and 3D using I2C interface	Prod
IS31AP4833	2+2HP	2.8	0.022%	67	3.0 - 5.5	1.0	6	QFN-36(4x4) TQFP48(9x9)	Stereo audio PA with headphone driver, with Multi input & I2C control for 3D, Tone, Volume	S=Q4/12
IS31AP4834	2+2HP	2.8	0.022%	67	3.0 - 5.5	1.0	6	QFN-36 (4.0x4.0)	Stereo audio PA with headphone driver, with Multi input & 3D, DC Volume and DC Tone control	S=Q1/13

Headphone Driver

Part No.	No. of Channel	Power (mW)	THD+N (kHs)	PSRR (dB)	VDD (V)	ISD (uA)	IDD (mA)	Package (Size in mm)	Key Feature	Status
IS31AP4912	2	30	0.024%	95	2.7 - 5.5	1.0	5.0	UTQFN-12 (2.0x2.0)	High Quality Stereo Headphone Driver with High SNR and 7uV Ultra-Low O/P Noise	Prod
IS31AP4913	2	30	0.05%	92	2.7 - 5.5	1.0	5.0	QFN-20 (3.0x3.0)	3D Surround & Bass Enhanced High Quality Stereo Headphone Driver	Prod

Class-D Audio Power Amplifier

Part No.	No. of Channel	Power (W)	THD+N (kHs)	PSRR (dB)	VDD (V)	ISD (uA)	IDD (mA)	Package (Size in mm)	Key Feature	Status
IS31AP2005	1	2.7	0.20%	63	2.5 - 5.5	1	3	DFN-8(3x3) MSOP-8	2.7W Mono Filter-less Class-D Audio Power Amplifier	Prod
IS31AP2006	1	3	0.28%	55	2.7 - 5.5	1	2.6	DFN-8(3x3)	3W Mono Filter-less Class-D Audio Power Amplifier	Prod
IS31AP2010B	1	3	0.22%	75	2.7 - 5.5	1	2.6	UTQFN-9 (1.5x1.5)	3W Mono Filter-less Class-D Audio Power Amplifier	Prod
IS31AP2145A	1	2.9	0.2%	72	2.7 - 5.5	0.1	2.0	UTQFN-9 (1.5x1.5)	2.9W Mono Clip-less & Filter-less Audio Amplifier with Built-in AGC	Prod
IS31AP2117	2	Mono 15/ Dual 8	0.1%	60	8 - 26	200	26	TSSOP-28	Low EMI, stereo Class-D Power Amplifier	S=Q1/13
IS31AP2118	2	Mono 20/ Dual 12	0.1%	70	8 - 26	200	35	TSSOP-28	High efficiency (90%), low EMI, stereo Class-D Power Amplifier	S=Q4/12

Audio Amplifier (Cont'd)

Class-G Speaker Amplifier

Part No.	No. of Channel	Power (W)	THD+N (kHs)	SNR (dB)	VDD (V)	ISD (uA)	IDD (mA)	Package (Size in mm)	Key Feature	Status
IS31AP4915	1	20VP-P	0.01%	100	2.5 - 6.5	1	6	QFN-16 (4.0x4.0)	20VP-P Charge Pump Ceramic Speaker Driver	Prod
IS31AP2031	1	2W	0.33%	-	2.7 - 4.5	1	5	QFN-20 (3.0x3.0)	High Power, Ultra-Low EMI Class-G Amplifier with AGC	Prod

Audio Amplifier Evaluation Boards

IC Part Number	Demo Board Part Number	Description
IS31AP2005-DLS2-TR	IS31AP2005-DLS2-EB	2.95W Mono Filter-less Class-D Audio Power Amplifier
IS31AP2005-SLS2-TR	IS31AP2005-SLS2-EB	2.95W Mono Filter-less Class-D Audio Power Amplifier
IS31AP2010B-UTLS2-TR	IS31AP2010B-UTLS2-EB	3W Mono Filter-less Class-D Audio Power Amplifier
IS31AP2145A-UTLS2-TR	IS31AP2145A-UTLS2-EB	2.9W Mono Clip-less & Filter-less Class-D Audio Power Amplifier
IS31AP4990D-UTLS2-TR	IS31AP4990D-UTLS2-EB	1.2W Audio Power Amplifier with Active-low Shutdown Mode
IS31AP4991-SLS2-TR	IS31AP4991-SLS2-EB	1.2W Audio Power Amplifier with Active-low Standby Mode
IS31AP4991-GRLS2-TR	IS31AP4991-GRLS2-EB	1.2W Audio Power Amplifier with Active-low Standby Mode
IS31AP4066D-QFLS2-TR	IS31AP4066D-QFLS2-EB	Dual 1.3W Stereo Audio Amplifier
IS31AP4088A-QFLS2-TR	IS31AP4088A-QFLS2-EB	Dual 2.84W Stereo Audio Amplifier Plus Headphone Driver
IS31AP4088D-QFLS2-TR	IS31AP4088D-QFLS2-EB	Dual 2.6W Stereo Audio Amplifier
IS31AP4913-QFLS2-TR	IS31AP4913-QFLS2-EB	3D and Bass Enhancement Stereo Headphone Driver

FxLED DRIVER

ISSI provides a series of 256-level, PWM-controlled, RGB and White LED drivers to generate fun lighting effects, while off loading the host control MCU from heavy calculation tasks. This is ideal for enhancing the message display or brand logo display on different electronic devices and electrical appliances. Dimming effects with Audio Synchronization allows creative lighting effects in-line with input audio signal, which makes it ideal for consumer applications. Constant current channels provide uniform LED brightness.

Fx LED Driver

Part No.	No. of Channel	No. RGB Group	Gamma Correction	Control Interface	Audio Sync.	Auto Dimming	VDD (V)	Package (Size mm)	Key Feature	Status
IS31FL3189	10	2	Built-in	SPI	Yes	No	3.0-5.5	QFN-20 (3.0x3.0)	Auto RGB color mixing with Audio Sync mode	Prod
IS31FL3193	3	1	Built-in	I2C	No	Yes	2.7-5.5	DFN-10 (3.0x3.0)	16Million color RGB auto and semi-auto breathing with pre-set pattern	Prod
IS31FL3196	6	2	Built-in	I2C	Yes	Yes	2.7-5.5	QFN-20 (3.0x3.0)	16Million color RGB auto and semi-auto breathing with pre-set pattern	Prod
IS31FL3199	9	3	Built-in	I2C	Yes	Yes	2.7-5.5	QFN-20 (3.0x3.0)	16Million color RGB auto and semi-auto breathing with AGC Audio Sync mode	Prod
IS31FL3216	16	-	External	I2C	Yes	No	2.7-5.5	QFN-28 (4.0x4.0)	Audio modulated, Internal SRAM supports animation frames, 16 independent channels	Prod
IS31FL3218	18	6	External	I2C	No	No	2.7-5.5	QFN-24 (4.0x4.0) SOP-24 (10x15)	Modulate 18 Independent LED channels with 256 steps PWM	Prod
IS31FL3235	28	6	External	I2C	No	No	2.7-5.5	QFN-36 (4.0x4.0)	Modulate 28 Independent LED channels with 256 steps PWM	S=Q4/12
IS31FL3236	36	6	External	I2C	No	No	2.7-5.5	QFN-44 (5.0x5.0) TQFP-48	Modulate 36 Independent LED channels with 256 steps PWM	S=Q4/12

FxLED Driver (Cont'd)

Fx LED Driver

Part No.	No. of Channel	No. RGB Group	Gamma Correction	Control Interface	Audio Sync.	Auto Dimming	VDD (V)	Package (Size mm)	Key Feature	Status
IS31FL3726	16	-	-	Serial	No	No	3.3-5.5	QFN-24 (4.0x4.0)	16-channels On/Off LED driver with serial-in and serial-out for cascade application	Prod
IS31FL3728	64	-	External	I2C	Yes	Yes	2.7-5.5	QFN-24 (4.0x4.0)		Prod
IS31FL3730	128	-	External	I2C	Yes	Yes	2.7-5.5	QFN-24 (4.0x4.0)		Prod
IS31FL3731	18	-	External	I2C	Yes	Yes	2.7-5.5	QFN-28 (4.0x4.0) TSSOP-28	18 independent outputs. Audio Modulated, Two 8x9 arrays with SRAM. 8-image swapping 8x9x2 (144 dot) LED array display	S=Q4/12

FxLED Driver Evaluation Boards

IC Part Number	Demo Board Part Number	Description
IS31FL3193-DLS2	IS31FL3193-DLS2-EB	3-channel LED Driver
IS31FL3199-QFLS2	IS31FL3199-QFLS2-EB	9-channel LED Driver
IS31FL3218-GRLS2	IS31FL3218-GRLS2-EB	18-channel LED Driver
IS31FL3236-QFLS2	IS31FL3236-QFLS2-EB	36-channel LED Driver
IS31FL3731-QFLS2	IS31FL3731-QFLS2-EB	Matrix LED Driver

White LED Driver for LCD Backlight & Flash

ISSI offers two types of white LED drivers for small size LCD backlight applications which include (1) constant current source for low noise, stable light intensity applications and (2) charge pump for lithium-ion or polymer battery source applications.

Small Size LCD Backlight Driver & Flash LED Driver

Part No.	No. of LED	Type of Driver	IOUT (mA)	VDD (V)	ISD (uA)	Intensity Control	Package (Size in mm)	Key Feature	Status
IS31BL3212	4	Constant Current	23	2.7 - 5.5	1.0	Pulse Count	DFN-8 (2.0x2.0)	Ultra low headroom voltage, highly integrated design with minimal component	Prod
IS31BL3212	3	Constant Current	23	2.7 - 5.5	1.0	Pulse Count	SOT23-6 (2.0x2.0)	Ultra low headroom voltage, highly integrated design with minimal component	Prod
IS31BL3229	8	Constant Current w/charge pump	25	2.7 - 5.5	1.0	PWM	QFN-20 (3.0x3.0)	8 channel output with built-in charge pump for high efficiency mode (1x/1.5x)	S=Q4/12
IS31BL3230	8	Constant Current	40mA or 320mA in parallel	2.7 - 5.5	1.6	PWM	QFN-16 (3.0x3.0)	Ultra low headroom voltage. All outputs may be connected in parallel.	Prod
IS31BL3231	1	Charge Pump	750	2.7 - 5.5	1.0	Pulse Count	DFN-10 (3.0x3.0)	Camera Flash LED Driver	Prod
IS31BL3232	1	Charge Pump	750	2.5 - 5.5	1.0	Pulse Count	DFN=10 (3.0x3.0)	Camera Flash LED Driver with time out protection	S=Q4/12
IS31BL3506A	9	Boost	20	2.7 - 5.5	2.0	PWM or DC Level	TSOT23-6 (3.0x3.0) DFN-8 (2.0x2.0)	35V Internal MOSFET 1MHz Step-up Converter; V _{FB} = 300mV	Prod
IS31BL3506B	8	Boost	20	2.7 - 5.5	2.0	PWM or DC Level	TSOT23-6 (3.0x3.0)	35V Internal MOSFET 1MHz Step-up Converter; V _{FB} = 200mV	S=Q4/12

LED Driver Evaluation Boards

IC Part Number	Demo Board Part Number	Description
IS31BL3506A-TTLS2-TR	IS31BL3506A-TTLS2-EB	DC/DC boost in-series LED backlight driver
IS31BL3231-DLS2-TR	IS31BL3231-DLS2-EB	LED Flash driver

HBLed Driver

ISSI provides a series of High Brightness (HB) LED drivers for different types of LED lighting applications. The major advantage is low external component count to keep the end product cost competitive.

Switching

Part No.	Driver	VDD (V)	IOUT Accuracy	Effcy (%)	Power Transistor	Typical Applications	Package	Key Feature	Status
IS31LT3350	DC/DC Buck	6-40	750mA ±5%	95	Built-in	Low voltage LED lighting, MR16 replacement	SOT23-5, SOT89-5, SOP-8	Single pin ON/OFF or brightness control with DC/PWM, thermal shutdown	Prod
IS31LT3352	DC/DC Buck	6-40	750mA ±5%	95	Built-in	Low voltage LED lighting, MR16 replacement	SOP-8	Cascadable, temp. compensation and one pin ON/OFF/dimming control	Prod
IS31LT3354	DC/DC Buck	6-40	- ±3%	98	External	Low volt. LED lighting, Illuminated sign	SOT23-5	1200:1 dimming ratio LED driver with thermal shutdown protection	Prod
IS31LT3360	DC/DC Buck	6-40	1.2A ±3%	98	Built-in	MR16, MR11 spot light, PAR light	SOT89-5	High efficiency with open/short and thermal shutdown protection	Prod
IS31LT3380	DC/DC Buck	8.5-40	1.2A ±5%	98	Built-in	MR16, MR11 spot light, PAR light	SOP-8	3-level switch dimming control, open/short and thermal shutdown protection	Prod
IS31LT3505	DC/DC Boost	6-30	24W ±5%	90	Built-in	Battery powered LED, solar light	MSOP-10	1MHz Boost Converter with 35V Internal NMOS	Prod
IS31LT3515	DC/DC Buck/Boost	6-40	±3%	90	External	MR16, MR11 spot light, PAR light	QFN-16	40V Buck/Boost converter, 3% accurate w/TRIAC Dimming support for compatible E-XFMR	S=Q4/12
IS31LT3948	DC/DC Boost	5-100		90	External	Street lamp, LED lighting, Gen. illum.	SOP-8	Wide input voltage range, over-voltage/temperature protection	Prod
IS31LT3910	AC/DC Driver	8-450 DC 110/220 AC	500mA ±7%	90	External	T8, PAR light	SOP-8	Non-isolation, linear/PWM dimming, temperature compensation	Prod
IS31LT3916	AC Non-Isolated	110/220AC	PF > 0.9	85	External	T8, Bulb Replacement, spot light, PAR light	MSOP-8	Non-Isolated, Off-Line Buck Converter with active PFC	S=Q4/12
IS31LT3918	AC/DC Driver	6-450 DC 85-265 AC	- ±3%	95	External	LED Lighting; Signal & decor. lighting, T8	SOP-8	High voltage LED driver with 3-level Switch Dimming	Prod
IS31LT3929	AC/DC Driver	6-450 DC 85-265 AC	- ±3%	87	External	T8, PAR light and bulb replacement	SOP-8	Isolated solution; supports active PFC, TRIAC dimming, and universal input voltage range operation	S=Q4/12
IS31LT3938	DC/DC, AC/DC Driver	10-450 DC 85-265 AC	- ±3%	95	External	LED Lighting; Signal & decorative lighting	SOP-8	High voltage LED driver with Switch Dimming, Single External FET	Prod

HBLed Driver (Cont'd)

Linear

Part No.	Driver	VDD (V)	IOUT Accuracy	Power Transistor	Typical Applications	Package	Key Feature	Status
IS31LT3117	Constant Current	5.5-60 DC	1400mA ±3%	Built-in	Automotive lighting, low EMI lighting applications	SOP-8	1 channel linear regulated, constant current LED driver	S=Q4/12
IS31LT3127	Constant Current	5.5-60 DC	700mA ±3% (per channel)	Built-in	Automotive lighting, low EMI lighting applications	SOP-8	2 channel linear regulated, constant current LED driver	S=Q1/13
IS31LT3147	Constant Current	5.5-60 DC	350mA ±3% (per channel)	Built-in	Automotive lighting, low EMI lighting applications	MSOP-10	4 channel linear regulated, constant current LED driver	S=Q1/13
IS31LT3135	Constant Current	2.7-5.5	500mA ±5%	Built-in	Miner lamp, Torch, Battery powered LED lighting	SOP-8	Main/sub dual-channel driver with short circuit and over temp. protection	Prod

HBLed Evaluation Boards

IC Part Number	Demo Board Part Number	Description
IS31LT3135-V1GRSL2-TR	IS31LT3135-V1GRSL2-EB	Input: 2.7-5V. Output: <4.7V, <500mA
	IS31LT3350-V1SDLS2-EBAIC	Anode in common. Input: 6-40V. Output: <Vin-5V, <750mA
IS31LT3350-V1SDLS2-TR	IS31LT3350-V1SDLS2-EB3CH	Input: 6-40V. Output: <Vin-3V, <750mA
	IS31LT3350-V1SDLS2-EBMR16	MR16. Input: 6-40V. Output: <Vin-3V, <750mA
	IS31LT3350-V1SDLS2-EBSG	Input: 6-40V. Output: <Vin-3V, <750mA
	IS31LT3360-SDLS3-EBAIC	Anode in common. Input: 6-40V. Output: <Vin-5V, <1200mA
IS31LT3360-SDLS3-TR	IS31LT3360-SDLS3-EB3CH	Input: 6-40V. Output: <Vin-3V, <1200mA
	IS31LT3360-SDLS3-EBMR16	MR16. Input: 6-40V. Output: <Vin-3V, <750mA
	IS31LT3360-SDLS3-EBSG	Input: 6-40V. Output: <Vin-3V, <1200mA
	IS31LT3352-V1GRSL2-EBMR16	MR16. Input: 6-40V. Output: <Vin-3V, <750mA
IS31LT3380-GRSL3-TR	IS31LT3380-GRSL3-EBMR16	MR16. Input: 8.5-40V. Output: <Vin-3V, <750mA
	IS31LT3380-GRSL3-EBSG	Input: 8.5-40V. Output: <Vin-3V, <1200mA
IS31LT3910-GRSL2-TR	IS31LT3910-GRSL2-EBT8	Input: 85-130VAC/85V-264VAC. Output: <40V, <500mA
IS31LT3354-STLS2-TR	IS31LT3354-STLS2-EBDCDC	Input: 6-40V. Output: <Vin-3V, <2000mA
	IS31LT3505-SLS2-EBDC	Input: 6-30V, <1000mA. Output: >Vin/0.9
IS31LT3505-SLS2-TR	IS31LT3505-SLS2-EBMR16	Input: 6-30V, <1000mA. Output: >Vin/0.9
	IS31LT3918-GRSL2-EBBULB	Input: 85-130VAC/85V-264VAC. Output: <80V, <500mA
IS31LT3918-GRSL2-TR	IS31LT3918-GRSL2-EBT8	Input: 85-130VAC/85V-264VAC. Output: <40V, <500mA
	IS31LT3918-GRSL2-EBDCDC	Input: 5V-100VDC. Output: <Vin-5V, <2000mA
	IS31LT3948-GRSL2-EBAC	Input: 5-100V, <2000mA. Output: >Vin
IS31LT3948-GRSL2-TR	IS31LT3948-GRSL2-EBMR16	Input: 5-100V, <2000mA. Output: >Vin

ORDERING INFORMATION FOR ISSI ANALOG PRODUCTS

	IS 31 LT 3135 V1	-GR L S2 -TR	
ISSI prefix _____			Package Option _____
Product Family _____			Temp. Grade _____
Product Type _____			Solder Type _____
Part Number _____			Package Code _____
Voltage/Parameter _____			

<p>Product Family</p> <p>31 = Analog and Mixed Signal</p> <p>32 = Automotive Analog and Mixed Signal</p> <p>Product Type</p> <p>AP = Audio Power Amplifier</p> <p>BL = White LED Driver for LCD Backlight</p> <p>FL = Fx LED Driver</p> <p>LT = Lighting LED Driver</p>	<p>Voltage Range/Parameters</p> <p><u>Sense Voltage Range</u></p> <p>V1 = 91mV to 101mV</p> <p>V2 = 99mV to 110mV</p> <p><u>Under-Voltage Range</u></p> <p>V1 = 1.13V to 1.21V</p> <p>V2 = 1.19V to 1.26V</p>	<p>Temperature Range</p> <p>S1 = Commercial (0 to 70°C)</p> <p>S2 = Industrial temp. (-40 to 85°C)</p> <p>S3 = Industrial temp. (-40 to 105°C)</p> <p>S4 = Industrial temp. (-40 to 125°C)</p> <p>A1 = Automotive temp. (-40 to 85°C)</p> <p>A2 = Automotive temp. (-40 to 105°C)</p> <p>A3 = Automotive temp. (-40 to 125°C)</p> <p>Packing Option</p> <p>Blank = Tray or Tube</p> <p>TR = Tape & Reel</p>	<p>Solder Type</p> <p>Blank = SnPb</p> <p>L = Lead-free (RoHS Compliant)</p> <p>Package Code</p> <p>C = WCSP</p> <p>D = DFN</p> <p>GR = SOP</p> <p>QF = QFN</p> <p>S = MSOP</p> <p>SD = SOT89</p> <p>ST = SOT23</p> <p>TT = TSOT23</p> <p>UT = UTQFN</p> <p>Z = TSSOP</p>
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For questions or support for any ISSI analog products please contact analog_mkt@issi.com

Flash

NOR Serial Flash

Den	Part No.	Type	Voltage	Frequency	Temp. Range	Package Type	Status
256K	IS25CD025	SPI / Dual output	2.70V-3.60V	33/100 MHz	-40°C to 105°C	8-pin SOIC 150mil, 8-pin TSSOP	Production
512K	IS25CD512	SPI / Dual output	2.70V-3.60V	33/100 MHz	-40°C to 105°C	8-pin SOIC 150mil 8-pin TSSOP 8-pin USON (2x3mm) 8-pin WSON (5x6mm)	Production
1M	IS25CD010	SPI / Dual output	2.70V-3.60V	33/100 MHz	-40°C to 105°C	8-pin SOIC 150 mil 8-pin TSSOP	Production
2M	IS25LQ020	SPI / Quad output	2.30V-3.60V	33/104 MHz	-40°C to 125°C	8-pin SOIC 208 mil 8-pin SOIC 150mil	Sampling
2M	IS25WQ020	SPI / Quad output	1.65V-1.95V	33/104 MHz	-40°C to 125°C	8-pin WSON (5x6mm) 8-pin VVSOP 150 mil 8-pin USON (2x3mm)	Samples Q1/13
2M	IS25LD020	SPI / Dual output	2.30V-3.60V	33/100 MHz	-40°C to 105°C	8-pin SOIC 150mil 8-pin TSSOP 8-pin WSON (5x6mm) 8-pin VVSOP 150 mil	Production
2M	IS25WD020	SPI / Dual output	1.65V-1.95V	30/80 MHz	-40°C to 105°C		Production
4M	IS25LD040	SPI / Dual output	2.30V-3.60V	33/100 MHz	-40°C to 105°C	8-pin SOIC 208mil	Production
	IS25WD040	SPI / Dual output	1.65V-1.95V	30/80 MHz	-40°C to 105°C	8-pin SOIC 150 mil	Production
	IS25LQ040	SPI / Quad output	2.30V-3.60V	33/104 MHz	-40°C to 125°C	8-pin WSON (5x6mm) 8-pin VVSOP 150 mil	Sampling
	IS25WQ040	SPI / Quad output	1.65V-1.95V	33/104 MHz	-40°C to 125°C		Samples Q1/13
8M	IS25LQ080	SPI / Quad output	2.30V-3.60V	33/104 MHz	-40°C to 125°C	16-pin SOIC 300mil 8-pin SOIC 208mil	Sampling
	IS25WQ080	SPI / Quad output	1.65V-1.95V	33/104 MHz	-40°C to 125°C	8-pin SOIC 150 mil 8-pin WSON (5x6mm)	Samples Q1/13
16M	IS25LQ016	SPI / Quad output	2.30V-3.60V	33/104 MHz	-40°C to 125°C	8-pin VVSOP 150 mil	Samples Q1/13
32M	IS25CQ032	SPI / Quad output	2.70V-3.60V	33/104 MHz	-40°C to 125°C	8-pin SOIC 208mil 8-pin WSON (5x6mm) 8-pin VSOP 208 mil 16-pin SOIC 300mil (Call Factory)	Production
64M	IS25CQ064	SPI / Quad Output	2.70V-3.60V	50/104 MHz	-40°C to 125°C	16-pin SOIC 300mil 8-pin SOIC 208mil 8-pin WSON (5x6 mm) 8-pin WSON (6x8mm) 24-ball (BGA 6x8mm) (Call Factory)	2H/13
128M	IS25CQ128	SPI / Quad Output	2.70V-3.60V	50/104 MHz	-40°C to 125°C	16-pin SOIC 300mil 8-pin WSON (5x6 mm) 8-pin WSON (6x8mm) 24-ball (BGA 6x8mm) (Call Factory)	2H/13
256M	IS25CQ256	SPI / Quad Output	2.70V-3.60V	50/104 MHz	-40°C to 125°C	16-pin SOIC 300mil 8-pin WSON (6x8mm) 24-ball (BGA 6x8mm) (Call Factory)	2H/13

Note: For all KGD products please call factory or email flash@issi.com

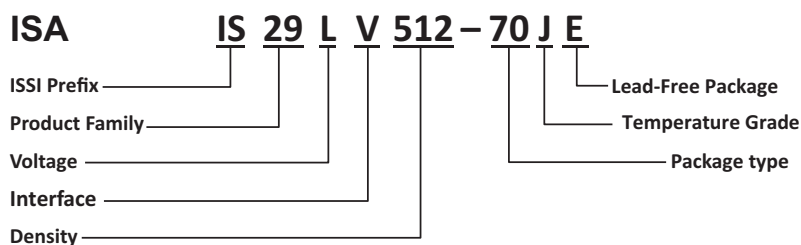
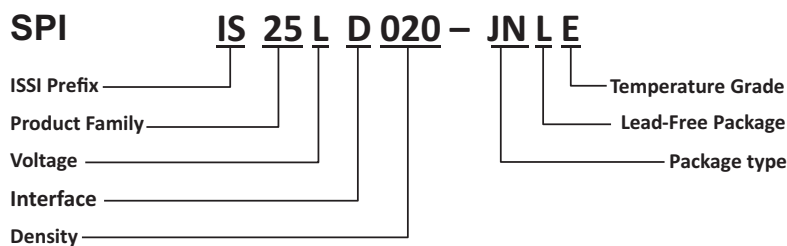
NOR ISA Parallel Flash

Den	Part No.	Type	Voltage	Speed	Temp. Range	Package Type	Status
512K	IS39LV512	ISA x8	2.70V-3.60V	70ns	-40°C to 85°C	PLCC/ VSOP (8x14mm)	Production
1M	IS39LV010	ISA x8	2.70V-3.60V	70ns	-40°C to 85°C	PLCC/ VSOP (8x14mm)	Production
4M	IS39LV040	ISA x8	2.70V-3.60V	70ns	-40°C to 85°C	PLCC/ VSOP (8x14mm)	Production
32M	IS29GL032	ISA x8 /x16	2.70V-3.60V	70 ns	-40°C to 85°C	48-pin TSSOP 48-ball (BGA 6x8mm) (Call Factory)	2H/13
64M	IS29GL064	ISA x8 /x16	2.70V-3.60V	70 ns	-40°C to 85°C	56-pin TSSOP 64-ball (BGA 11x13mm) (Call Factory)	2H/13
128M	IS29GL128	ISA x8 /x16	2.70V-3.60V	70 ns	-40°C to 85°C	56-pin TSSOP 64-ball (BGA 11x13mm) (Call Factory)	2H/13
256M	IS29GL256	ISA x8 /x16	2.70V-3.60V	70 ns	-40°C to 85°C	56-pin TSSOP 64-ball (BGA 11x13mm) (Call Factory)	2H/13

FWH/LPC Flash

Den	Part No.	Type	Voltage	Frequency	Temp. Range	Package Type	Status
4M	IS49FL004T	x8	3.00V-3.60V	33MHz	0°C to 85°C	PLCC/ VSOP (8X14mm)	Production

ORDERING INFORMATION FOR ISSI FLASH DEVICES



Flash Product Family

SPI = 25
ISA = 29/39

SPI Operating Voltage Range

L = 2.30V-3.60V
W = 1.65V-1.95V
C = 2.70-3.60V

ISA Operating Voltage Range

G/L = 2.70-3.60V

SPI Interface

D = x2 output
Q = x4 output

ISA Interface

V = ISA x8
L = ISA x8/x16

Density

025 = 256Kb
512 = 512Kb
010 = 1Mb
020 = 2Mb
040 = 4Mb
080 = 8Mb
016 = 16Mb
032 = 32Mb
064 = 64Mb
128 = 128Mb
256 = 256Mb

Package Type

JN = 8 pin SOIC 150mil
JB = 8 pin SOIC 208mil
JM = 16 pin SOIC 300mil
JD = 8 pin TSSOP
JE = 48 pin TSSOP
JT = 56 pin TSSOP
JK = 8 pin WSON (5x6 mm)
JL = 8 pin WSON (6x8mm)
JU = 8 pin USON (2x3mm)
JF = 8 pin VSOP 208mil
JV = 8 pin VVSOP 150mil
JG = 24 ball (BGA 6x8mm) (Call Factory)
JH = 48 ball (BGA 6x8mm) (Call Factory)
JI = 64 ball (BGA 11x13mm) (Call Factory)
JS = WLCSP (Call Factory)
JW = KGD (Call Factory)

Lead-Free Package

E/L = Lead-Free

Temperature Grade

E = Extended grade (-40C to +105C)
A1 = Automotive grade (-40C to +85C)
A2 = Automotive grade (-40C to +105C)
A3 = Automotive grade (-40C to +125C)

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