12815 NE 124th St STE#D, Kirkland, WA-98034

AS4C4M32S-6BIN vs IS42S32400D-6BL vs MT48LC4M32B2B5-6G

Part Number & result / Parameter	AS4C4M32S-6BIN	IS42S32400D-6BLI	MT48LC4M32B2B5-6G
Product Description	SDRAM	SDRAM	SDRAM
Capacity	128Mb (4M x 32)	128Mb (4M x 32)	128Mb (4M x 32)
Memory Organization	1M, x32 bits, x4 banks	1M, x32 bits, x4 banks	1M, x32 bits, x4 banks
Operating Power Supply	V_{DD} & V_{DDQ} = 3.3V (+/-0.3V)	V_{DD} & V_{DDQ} = 3.3V (+/-0.3V)	V_{DD} & V_{DDQ} = 3.3V (+/-0.3V)
Operating Temperature	Industrial (-40°C to 85°C)	Commercial (0°C to 70°C)	Commercial (0°C to 70°C)
Clock Frequency	166.66MHz	166.66MHz	166.66MHz
Clock Cycle time (ns)	6	6	6
Access Time	5.4ns	5.4ns	5.4ns
CAS Latency	2 or 3	2 or 3	2 or 3
tRCD & tRP (ns)	18	18	18
Refresh Cycles	4096 refresh cycles/64ms	4096 cycles/64ms	4096 cycles/64ms
I/O Capacitance	CIO: 5.5pf to 7.5pf	CIO: 4pf to 6.5pf	CIO: 4pf to 6.5pf
Pin to Pin Compatible	Pin to Pin Compatible		
AC/DC Characteristics	Meet JEDEC		
IDD Specification			
IDD Spec conditions	-40C ≤ Ta ≤ 85C VDD/Q = 3.3V ±0.3V	-40C ≤ Ta ≤ 85C VDD/Q = 3.3V ±0.3V	-40C ≤ Ta ≤ 85C VDD/Q = 3.3V ±0.3V
I_{DD1} (mA)	160	140	190
I_{DD2N} (mA)	50	25	NA
I_{DD2NS} (mA)	30	15	NA
I_{DD2P} (mA)	3	2	2
I_{DD2PS} (mA)	3	2	2
I_{DD3N} (mA)	60	30	65
I_{DD3NS} (mA)	50	20	65
I_{DD4} (mA)	200	180	195
I_{DD5} (mA)	260	180	320
I_{DD6} (mA)	3	2	2
Package	90ball TFBGA 8mm x 13mm x 1.2mm	90ball TFBGA 8mm x 13mm x 1.2mm	90ball TFBGA 8mm x 13mm x 1.2mm
Package Material	Pb & Halogen Free	Pb & Halogen Free	Pb & Halogen Free