







# Flash Card Comparison

Product Planning & Application Engineering Team

MEMORY DIVISION  
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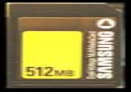

# Flash Card Comparison (1/2)

## □ Standard Size

Form Factor	MS	SD	MMC	MMCplus	UFD	CFC
						
Primary Supplier	Sony	Matsushita Sandisk Toshiba	Infineon Renesas Samsung	Infineon Renesas Samsung	Many Taiwan Companies	Renesas Lexar
Size (mm)	21*50*2.8	24*32*2.1	24*32*1.4	24*32*1.4	None	43*36*3.3
Total Pins	10	9	7	13	4	50
Data Bus	1	4	1	8	1	8, 16
Interface Clock	24MHz	25MHz	20MHz	52MHz	FS:12MHz HS:480MHz	20MHz
Data Rate RD	3MB/s	8MB/s	2.1MB/s	16MB/s	3~15MB/s	3~12MB/s
WR	3MB/s	5MB/s	1.7MB/s	5~15MB/s	3~15MB/s	3~12MB/s
Supply Voltage	3.3V	3.3V	1.8V/3.3V	1.8V/3.3V	5V	3.3V/5V
Controller	Built-in	Built-in	Built-in	Built-in	Built-in	Built-in

# Flash Card Comparison (2/2)

## □ Small Size

Form Factor	MS-Duo	Mini-SD	RS-MMC	MMCmobile	XD
					
Primary Supplier	Sony	Matsushita Sandisk Toshiba	Infineon Renesas Samsung	Infineon Renesas Samsung	Toshiba Samsung
Size (mm)	20*31*1.6	20*21.5*1.4	24*18*1.4	24*18*1.4	25*20*1.7
Total Pins	10	9	7	13	18
Data Bus	1	4	1	8	8
Interface Clock	24MHz	25MHz	20MHz	52MHz	None
Data Rate RD	3MB/s	8MB/s	2.1MB/s	16MB/s	16MB/s
WR	3MB/s	5MB/s	1.7MB/s	5~15MB/s	6MB/s
Supply Voltage	3.3V	1.8V/3.3V	1.8V/3.3V	1.8V/3.3V	3.3V
Controller	Built-in	Built-in	Built-in	Built-in	None