

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	60K	—	2K	8-ch. 10-bit	—	2 USART	4/2/0	64	16MHz/2.7 - 5.5V	-20°C - 75°C	80-QFP	DF38327HV-ND	10.82	9.72	8.62
										-40°C - 85°C	80-QFP	DF38327HWV-ND	11.91	10.70	9.49
										-20°C - 75°C	80-TQFP	DF38327WV-ND	10.82	9.72	8.62
										-40°C - 85°C	80-TQFP	DF38327WV-ND	11.91	10.70	9.49
Flash	32K	—	2K	12-ch. 10-bit	—	3 USART	4/2/0	84	16MHz/2.7 - 5.5V	-20°C - 75°C	100-QFP	DF38344HV-ND	11.02	9.90	8.78
										-40°C - 85°C	100-QFP	DF38344HWV-ND	12.24	11.00	9.75
										-40°C - 85°C	100-TQFP	DF38344WV-ND	12.14	10.91	9.67
										-20°C - 75°C	100-TQFP	DF38344XV-ND	11.02	9.90	8.78
Flash	60K	—	2K	12-ch. 10-bit	—	3 USART	4/2/0	84	16MHz/2.7 - 5.5V	-20°C - 75°C	100-QFP	DF38344XV-ND	12.14	10.91	9.67
										-40°C - 85°C	100-QFP	DF38347HV-ND	11.65	10.49	9.30
										-40°C - 85°C	100-QFP	DF38347HWV-ND	12.83	11.52	10.22
										-20°C - 75°C	100-TQFP	DF38347WV-ND	11.67	10.49	9.30
Flash	60K	—	2K	8-ch. 10-bit	—	2 USART	4/2/0	64	16MHz/2.7 - 5.5V	-20°C - 75°C	100-QFP	DF38347WV-ND	12.83	11.52	10.22
										-40°C - 85°C	100-TQFP	DF38347XV-ND	11.67	10.49	9.30
										-40°C - 85°C	100-TQFP	DF38347XV-ND	12.83	11.52	10.22
										-20°C - 75°C	100-TQFP	DF38347XV-ND	11.67	10.49	9.30
Flash	60K	—	2K	8-ch. 10-bit	—	2 USART	4/2/0	64	16MHz/2.7 - 5.5V	-20°C - 75°C	80-QFP	DF38427HV-ND	11.67	10.49	9.30
Flash	16K	—	1K	6-ch. 10-bit	—	1 USART, 1 SSU*, IrDA, 1 I ² C	3/2/0	19	10MHz/2.7 - 3.6V	-20°C - 75°C	32-QFN	DF38602RFT10V-ND	9.86	7.89	6.66
Flash	16K	—	1K	6-ch. 10-bit	—	1 USART, 1 SSU*, IrDA, 1 I ² C	3/2/0	19	4.2MHz/1.8 - 3.6V	-20°C - 75°C	32-QFN	DF38602RFT4V-ND	9.86	7.89	6.66



H8/300 Series

H8/300H and H8/300L Series of MCUs provide extensive support of customers' system requirements with a high level of peripheral functionality.

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
ROMless	—	—	512	8-ch. 10-bit	—	2 UART	—/5/—	38	16MHz/4.5 - 5.5V	-20°C - 75°C	100-QFP	D13002F16V-ND	11.72	10.53	9.34
										-20°C - 75°C	100-TQFP	D13003T16V-ND	16.32	15.24	14.15
										-20°C - 75°C	100-QFP	D13008F25V-ND	9.50	7.60	6.42
										-20°C - 75°C	100-QFP	D13008VF25V-ND	8.33	7.50	6.65
Flash	—	—	4K	8-ch. 10-bit	2-ch. 8-bit	1 Smart Card, 2 SCI	4/3/—	47	25MHz/3 - 3.6V	-20°C - 75°C	100-QFP	D13008VFB25V-ND	5.10	4.08	3.45
										-20°C - 75°C	100-QFP	DF3024F25V-ND	12.42	11.16	9.90
										-20°C - 75°C	100-TQFP	DF3026XBL25V-ND	14.63	13.65	12.68
										-20°C - 75°C	100-TQFP	DF3028X25V-ND	16.70	15.59	14.47
										-20°C - 75°C	100-QFP	DF3029F25V-ND	16.58	15.47	14.37
										-20°C - 75°C	80-QFP	DF3039F18V-ND	20.34	18.99	17.63
										-20°C - 75°C	100-QFP	DF30488F25V-ND	13.78	12.38	10.98
										-20°C - 75°C	100-TQFP	DF30488X25V-ND	14.43	12.96	11.50
										-20°C - 75°C	100-QFP	DF30488VF25V-ND	13.78	12.38	10.98
										-20°C - 75°C	100-TQFP	HD64F3048VTF8-ND	36.96	34.50	32.04
										-20°C - 75°C	100-QFP	DF30488F25V-ND	13.62	12.72	11.81
										-20°C - 75°C	100-QFP	DF30528F25V-ND	21.09	19.69	18.28
										-20°C - 75°C	100-QFP	DF30628F25V-ND	9.55	8.58	7.61
										-20°C - 75°C	100-QFP	DF30648F25V-ND	14.83	13.32	11.82
										-20°C - 75°C	100-QFP	DF3067RF20V-ND	20.55	19.18	17.81
										-20°C - 75°C	100-QFP	DF3068F25V-ND	16.70	15.59	14.47
										-20°C - 75°C	100-QFP	DF3069RF25V-ND	16.58	15.47	14.37
										-20°C - 75°C	100-TQFP	DF3069RX25V-ND	17.03	15.89	14.76
										-20°C - 75°C	64-QFP	HD64F3644V-ND	11.11	9.98	8.85
										-20°C - 75°C	64-QFP	HD64F3644HV-ND	10.19	9.15	8.12
-20°C - 75°C	64-SDIP	HD64F3644PV-ND	12.15	11.34	10.53										

H8/300 Tiny Series

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	32K	—	2K	8-ch. x 10-bit	—	UART, CAN	3/2/—	53	1 - 20MHz/3 - 5.5V	-20°C - 75°C	64-LQFP	DF36034FPV-ND	10.86	9.75	8.65
										-20°C - 75°C	64-LQFP	DF36034GFPV-ND	9.55	8.58	7.61
										-20°C - 75°C	64-LQFP	DF36037FPV-ND	11.94	10.73	9.51
										-20°C - 75°C	64-QFP	DF36079GHSV-ND NEW!	9.68	7.75	6.54
										-20°C - 75°C	32-LQFP	DF36902GHSV-ND	4.48	3.59	2.79
Flash	32K	—	2K	8-ch. x 10-bit	—	UART, CAN	3/2/—	53	1 - 20MHz/3 - 5.5V	-20°C - 75°C	64-LQFP	DF36034GFPV-ND	9.55	8.58	7.61
Flash	32K	—	2K	8-ch. x 10-bit	—	UART, CAN	3/2/—	53	1 - 20MHz/3 - 5.5V	-20°C - 75°C	64-LQFP	DF36037FPV-ND	11.94	10.73	9.51
Flash	128K	—	6K	8-ch. x 10-bit	—	2 USART, I ² C	4/3/—	47	20MHz/4.5 - 5.5V	-20°C - 75°C	64-QFP	DF36079GHSV-ND NEW!	9.68	7.75	6.54
Flash	8K	—	1.5K	4-ch. x 10-bit	—	UART	1/1/—	22	2 - 12MHz/3 - 5.5V	-20°C - 75°C	32-LQFP	DF36902GHSV-ND	4.48	3.59	2.79

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H8S Family

The H8S Family meets the growing demands for system designs requiring the performance of 16-bit microcontrollers with sophisticated peripherals integrated on-chip. The H8S is the leader in memory size capacity with up to 512K on-chip flash. It includes performance speeds as high as 33MHz, extremely low power consumption, and offers a wide selection of peripherals for optimizing system cost, development time, performance, and features.

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
ROMless	—	—	8K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	20MHz/3 - 3.6V	-20°C - 75°C	100-QFP	D12312SVF20V-ND	9.60	7.68	6.48
										-20°C - 75°C	100-QFP	D12312SVF25V-ND	9.60	7.68	6.48
										-20°C - 75°C	100-TQFP	D12312SVTE25V-ND	8.60	7.74	6.87
ROMless	—	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/2.7 - 3.6V	-20°C - 75°C	128-QFP	D12320VF20V-ND	9.60	7.68	6.48
										-20°C - 75°C	128-QFP	D12320VF25V-ND	9.60	7.68	6.48
										-20°C - 75°C	120-TQFP	D12320VTE20V-ND	8.62	7.74	6.87
ROMless	—	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/2.7 - 3.6V	-20°C - 75°C	120-TQFP	D12320VTE25V-ND	8.62	7.74	6.87
										-20°C - 75°C	128-QFP	D12321VF20V-ND	9.60	7.68	6.48
										-20°C - 75°C	128-QFP	D12321VF25V-ND	9.60	7.68	6.48
ROMless	—	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/2.7 - 3.6V	-20°C - 75°C	120-TQFP	D12321VTE20V-ND	8.62	7.74	6.87
										-20°C - 75°C	120-TQFP	D12321VTE25V-ND	8.62	7.74	6.87
										-20°C - 75°C	128-QFP	D12322RVF20V-ND	9.02	8.10	7.19
ROMless	—	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	25MHz/3 - 3.6V	-20°C - 75°C	128-QFP	D12322RVF25V-ND	8.82	7.92	7.03
										-20°C - 75°C	128-QFP	HD6412322RVFBL25-ND	7.58	6.07	5.12
										-20°C - 75°C	120-TQFP	D12322RTE20V-ND	9.62	8.64	7.67
ROMless	—	—	32K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	25MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	D12322RTE25V-ND	9.62	8.64	7.67
										-20°C - 75°C	120-TQFP	D12324SVF25V-ND	11.00	9.90	8.78
										-20°C - 75°C	120-TQFP	D12324SVTE20V-ND	11.62	10.44	9.26
ROMless	—	—	8K	12-ch. 10-bit	4-ch. 8-bit	3 USART, Smart Card	2/6/—	118	20MHz/2.7 - 3.6V	-20°C - 75°C	144-QFP	D12332VF20V-ND	11.87	10.67	9.46
										-20°C - 75°C	144-QFP	D12332VF25V-ND	11.85	10.67	9.46
										-20°C - 75°C	128-QFP	D12352F13V-ND	14.01	12.59	11.16
ROMless	—	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	13MHz/3 - 5.5V	-20°C - 75°C	120-TQFP	D12352TE13V-ND	13.73	12.81	11.90
										-20°C - 75°C	120-TQFP	D12352TE20V-ND	13.73	12.81	11.90
										-20°C - 75°C	128-QFP	D12363VF33V-ND	11.02	9.90	8.78
ROMless	—	—	16K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	33MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	D12363VF33V-ND	11.62	10.44	9.26
										-20°C - 75°C	144-LQFP	D12373RVFQ33V-ND	14.03	12.60	11.18
ROMless	—	—	16K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	33MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	D12373VFQ33V-ND	13.03	11.70	10.38

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(Continued)

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Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	1	25	100
ROMless	—	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP 120-TQFP	D12390F20V-ND D12390TE20V-ND	9.60 8.62	7.68 7.74	6.48 6.87
ROMless	—	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP 120-TQFP	D12392F20V-ND D12392TE20V-ND	9.02 9.62	8.10 8.64	7.19 7.67
ROMless	—	—	32K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP 120-TQFP	D12394F20V-ND D12394TE20V-ND	11.02 11.62	9.90 10.44	8.78 9.26
ROMless	—	—	8K	12-ch. 10-bit	4-ch. 8-bit	3 USART, IrDA, Smart Card	2/6/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-QFP	D12670VFC33V-ND	11.14	10.01	8.88
ROMless	—	—	32K	12-ch. 10-bit	4-ch. 8-bit	3 USART, IrDA, Smart Card	2/6/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	D12674RVFC33V-ND	13.33	12.00	10.64
Flash	64K	—	2K	—	—	1 USART, 2 I ² C	3/1/—	82	10MHz/3 - 3.6V	-20°C - 75°C	100-TQFP	DF2110BVT10V-ND	14.63	13.14	11.66
Flash	64K	—	2K	6-ch. 10-bit	—	1 USART 2 I ² C	3/1/—	122	10MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2111BVT10BVT-ND	13.73	12.81	11.90
Flash	64K	—	3K	6-ch. 10-bit	—	1 USART 2 I ² C	3/1/—	122	10MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2111BVT10CV-ND	14.06	13.12	12.19
Flash	1M	—	8K	8-ch. 10-bit	—	2 USART, IrDA, Smart Card, 2 I ² C	2/1/—	119	20MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2114RVT20V-ND	20.96	19.56	18.17
Flash	128K	—	8K	16-ch. 10-bit	—	1 USART, Smart Card, 3 I ² C	2/1/—	125	20MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2116VT20V-ND	10.60	9.53	8.45
Flash	64K	—	2K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA	3/1/—	66	20MHz/4 - 5.5V 20MHz/4 - 5.5V 10MHz/3 - 3.6V	-20°C - 75°C	80-QFP 80-TQFP 80-TQFP	DF2132RFA20V-ND DF2132RTF20V-ND DF2132RVTF10V-ND	13.52 14.87 14.87	12.62 13.88 13.88	11.72 12.89 12.89
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA	3/1/—	66	20MHz/4 - 5.5V 20MHz/4 - 5.5V 10MHz/2.7 - 3.6V 10MHz/2.7 - 3.6V	-20°C - 75°C	80-QFP 80-TQFP 80-QFP 80-TQFP	DF2134AFA20V-ND DF2134ATF20V-ND DF2134AVFA10V-ND DF2134AVTF10V-ND	13.73 15.05 13.73 15.05	12.81 14.05 12.81 14.05	11.90 13.04 11.90 13.04
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	66	20MHz/4.0 - 5.5V 20MHz/4.0 - 5.5V 10MHz/2.7 - 3.6V 10MHz/2.7 - 3.6V	-20°C - 75°C	80-QFP 80-TQFP 80-QFP 80-TQFP	DF2138AFA20V-ND DF2138ATF20V-ND DF2138AVFA10V-ND DF2138AVTF10V-ND	15.00 15.60 15.00 15.60	14.00 14.56 14.00 14.56	13.00 13.52 13.00 13.52
Flash	64K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	82	10MHz/2.7 - 3.6V	-20°C - 75°C	100-TQFP	DF2140BVT10V-ND	14.63	13.14	11.66
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 UART	3/1/—	82	20MHz/2.7 - 5.5V 10MHz/2.7 - 5.5V 20MHz/2.7 - 5.5V 10MHz/2.7 - 5.5V	-20°C - 75°C	100-QFP 100-TQFP 100-QFP 100-QFP	DF2144AFA20V-ND DF2144AVTE10V-ND DF2144FA20V-ND DF2144VFA10V-ND	14.48 16.01 19.25 19.25	13.51 14.94 17.97 17.97	12.55 13.88 16.68 16.68
Flash	256K	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	82	20MHz/4 - 5.5V 20MHz/4.5 - 5.5V 20MHz/4.5 - 5.5V 10MHz/2.7 - 3.6V 10MHz/2.7 - 3.6V 10MHz/2.7 - 3.6V	-20°C - 75°C	100-QFP 100-TQFP 100-TQFP 100-QFP 100-QFP 100-TQFP	DF2145BFA20V-ND DF2145BTE20V-ND HD64F2145BTE20-ND DF2145BFA10V-ND DF2145BVT10V-ND HD64F2145BFA10-ND HD64F2145BVT10-ND	15.30 15.84 15.84 15.30 15.84 15.30 15.84	14.28 14.79 14.79 14.28 14.79 14.28 14.79	13.26 13.73 13.73 13.26 13.73 13.26 13.73
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	82	20MHz/4.0 - 5.5V 20MHz/4.0 - 5.5V 20MHz/4.0 - 5.5V 20MHz/4.0 - 5.5V 20MHz/4.0 - 5.5V 10MHz/2.7 - 3.6V	-20°C - 75°C -40°C - 85°C -20°C - 75°C -20°C - 75°C -40°C - 85°C -20°C - 75°C	100-TQFP 100-TQFP 100-QFP 100-TQFP 100-TQFP 100-QFP	HD64F2148ATE20V-ND DF2148ATE20V-ND DF2148BFA20V-ND DF2148BTE20V-ND DF2148BFA10V-ND DF2148BTE10V-ND	18.45 18.86 13.50 14.04 14.87 13.50 14.04	17.22 17.60 12.60 13.11 13.88 12.60 13.11	15.99 16.35 11.70 12.17 12.89 11.70 12.17
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, 2 I ² C	4/1/—	82	20MHz/3 - 3.6V	-20°C - 75°C	100-QFP	DF2148RFA20V-ND	21.53	20.09	18.66
Flash	64K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	122	10MHz/2.7 - 3.6V	-20°C - 75°C	144-TQFP	DF2160BVT10V-ND	15.32	14.30	13.28
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 2 I ² C	4/1/—	122	10MHz/2.7 - 3.6V	-20°C - 75°C	144-TQFP	DF2161BVT10V-ND	16.20	15.12	14.04
Flash	512K	—	40K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 6 I ² C, Smart Card	4/1/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2166VT33V-ND	27.00	25.20	23.40
Flash	384K	—	40K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 6 I ² C, Smart Card	4/1/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-TQFP 144-TQFP	DF2167VTE33V-ND DF2167VT33V-ND	25.20 28.01	23.52 26.14	21.84 24.28
Flash	256K	—	40K	8-ch. 10-bit	2-ch. 8-bit	3 USART, IrDA, 6 I ² C, Smart Card	4/1/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-TQFP 144-TQFP	DF2168VTE33V-ND HD64F2168VTE33-ND	22.52 22.52	21.02 21.02	19.52 19.52
Flash	256K	—	32K	—	—	USB	2/—/—	76	33MHz/3.0 - 3.6V	-20°C - 75°C	100-TQFP	DF2170BVT33V-ND	18.00	16.80	15.60
Flash	1M	—	6K	8-ch. 10-bit	—	2 USART, IrDA, Smart Card, 2 I ² C	4/4/—	119	20MHz/3 - 3.6V	-20°C - 75°C	144-TQFP	DF2189RVT20V-ND	23.81	22.22	20.64
Flash	64K	—	8K	6-ch. 10-bit	—	2 USART, Smart Card	—/3/—	37	24MHz/2.7 - 3.6V	-20°C - 75°C	64-LQFP 64-LQFP 64-LQFP	DF2211FP24V-ND DF2211UFP24V-ND HD64F2211UFP24-ND	11.65 11.65 11.67	10.49 10.49 10.49	9.30 9.30 9.30
Flash	128K	—	12K	6-ch. 10-bit	—	2 USART, Smart Card	—/3/—	37	24MHz/2.7 - 3.6V	-20°C - 75°C	64-LQFP 64-LQFP 64-LQFP 64-LQFP	DF2212FP24V-ND DF2212UFP24V-ND HD64F2212UFP24-ND HD64F2212UFP24-ND	12.48 12.48 12.48 12.48	11.24 11.24 11.24 11.24	9.97 9.97 9.97 9.97
Flash	128K	—	12K	—	1-ch. 8-bit	3 USART	—/3/—	81	16MHz/2.7 - 3.6V	-20°C - 75°C	112-TFBGA	DF2214BQ16V-ND	15.30	14.28	13.26
Flash	256K	—	20K	6-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/3/—	75	24MHz/2.7 - 3.6V	-20°C - 75°C	112-LFBGA 120-TQFP 112-LFBGA 120-TQFP	DF2215RBR24V-ND DF2215RTE24V-ND DF2215RBR24V-ND DF2215RUTE24V-ND	15.41 13.80 15.41 13.80	14.38 12.88 14.38 12.88	13.36 11.96 13.36 11.96
Flash	256K	—	16K	6-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/3/—	75	16MHz/2.7 - 3.6V	-20°C - 75°C	112-LFBGA 120-TQFP 112-LFBGA 120-TQFP 120-TQFP 120-TQFP	DF2215BR16V-ND DF2215TE16V-ND DF2215UBR16V-ND DF2215UTE16V-ND HD64F2215TE16-ND HD64F2215UTE16-ND	21.00 19.01 21.00 19.01 21.11 21.11	19.60 17.74 19.60 17.74 19.01 19.01	18.20 16.48 18.20 16.48 16.86 16.86
Flash	128K	—	12K	6-ch. 10-bit	—	2 USART, Smart Card	—/3/—	69	24MHz/2.7 - 3.6V	-20°C - 75°C	112-LFBGA 100-TQFP 100-TQFP 100-TQFP 112-LFBGA 100-TQFP	DF2218BR24V-ND DF2218TF24V-ND DF2218UT24V-ND HD64F2218TF24-ND DF2218UBR24V-ND HD64F2218UT24-ND	14.60 14.36 14.36 15.99 14.60 15.99	13.63 12.90 12.90 14.40 13.63 14.40	12.65 11.44 11.44 12.77 12.65 12.77
Flash	256K	—	32K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	DF2362VTE34V-ND	14.01	12.59	11.16
Flash	256K	—	16K	8-ch. 10-bit	2-ch. 8-bit	4 USART, Smart Card, 2 I ² C	4/6/—	82	13.5MHz/2.7 - 5.5V 13.5MHz/2.7 - 5.5V 13.5MHz/2.7 - 5.5V 13.5MHz/2.7 - 5.5V 13.5MHz/2.7 - 3.6V 6.25MHz/2.2 - 3.6V 6.25MHz/2.2 - 3.6V 6.25MHz/2.2 - 3.6V 6.25MHz/2.2 - 3.6V 13.5MHz/2.7 - 3.6V 6.25MHz/2.2 - 3.6V 13.5MHz/2.7 - 3.6V 13.5MHz/2.7 - 3.6V	-20°C - 75°C -20°C - 75°C -20°C - 75°C -20°C - 75°C -20°C - 75°C	100-QFP 100-QFP 100-TQFP 100-TQFP 112-TFBGA 112-LFBGA 100-TQFP 100-TQFP 100-TQFP 112-BGA 100-QFP 100-QFP 100-TQFP 100-TQFP	DF2238BF13V-ND DF2238BFA13V-ND DF2238BTE13V-ND DF2238BTF13V-ND DF2238RBQ13V-ND DF2238RBQ6V-ND DF2238RBR6V-ND DF2238RTE6V-ND DF2238RTF6V-ND DF2238RBR13V-ND DF2238RFA6V-ND DF2238RFA13V-ND DF2238RTE13V-ND DF2238RTF13V-ND	18.11 18.11 20.00 20.00 17.10 17.10 15.84 15.84 15.84 17.10 15.30 15.30 15.84 15.84	16.90 16.90 18.67 18.67 15.96 15.96 14.82 14.82 14.82 15.96 14.28 14.28 14.79 14.79	15.70 15.70 17.33 17.33 14.82 14.82 13.73 13.73 13.73 14.82 13.26 13.26 13.73 13.73

• RoHS Compliant *SSU = SPI*

(Continued)

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Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	384K	—	32K	8-ch. 10-bit	2-ch. 8-bit	4 USART, Smart Card, 2 I ² C	4/6/—	82	16MHz/2.7 – 3.6V 20MHz/3 – 3.6V 16MHz/2.7 – 3.6V 20MHz/3 – 3.6V 20MHz/3 – 3.6V	-20°C – 75°C	112-TFBGA 112-TFBGA 100-QFP 100-QFP 100-QFP	DF2239B016V-ND DF2239B020V-ND DF2239FA16V-ND DF2239FA20V-ND DF2239FA20V-ND	19.80	18.48	17.16
													19.80	18.48	17.16
													18.00	16.80	15.60
													18.00	16.80	15.60
													19.80	18.48	17.16
Flash	256K	—	16K	8-ch. 10-bit	2-ch. 8-bit	4 USART, Smart Card, 2 I ² C	4/6/—	82	16MHz/2.7 – 3.6V 20MHz/3 – 3.6V 16MHz/2.7 – 3.6V 20MHz/3 – 3.6V 20MHz/3 – 3.6V	-20°C – 75°C	100-QFP 100-QFP 100-QFP 100-TQFP 100-TQFP	HD64F2239FA16-ND HD64F2239FA20-ND DF2239TE16V-ND DF2239TE20V-ND DF2239TF16V-ND	18.00	16.80	15.60
													18.00	16.80	15.60
													18.54	17.31	16.07
													18.54	17.31	16.07
													18.54	17.31	16.07
Flash	256K	—	16K	8-ch. 10-bit	2-ch. 8-bit	4 USART, Smart Card, 2 I ² C	4/6/—	82	13.5MHz/4 – 5.5V	-20°C – 75°C	100-QFP	DF2258FA13V-ND	19.25	17.97	16.68
Flash	128K	—	4K	10-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 I ² C	4/3/—	78	13.5MHz/3 – 5.5V 20.5MHz/4 – 5.5V 13.5MHz/3 – 5.5V	-20°C – 75°C	100-QFP 100-QFP 100-TQFP	DF2265FA13V-ND DF2265FA20V-ND DF2265TE13V-ND	14.40	13.44	12.48
													14.40	13.44	12.48
													15.00	14.00	13.00
Flash	128K	—	8K	10-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 I ² C	4/3/—	78	13.5MHz/3 – 5.5V 13.5MHz/3 – 5.5V 20.5MHz/4 – 5.5V	-20°C – 75°C	100-QFP 100-TQFP 100-TQFP	DF2266FA13V-ND DF2266TF13V-ND DF2266TF20V-ND	15.00	14.00	13.00
													15.60	14.56	13.52
													15.60	14.56	13.52
Flash	256K	—	16K	10-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 I ² C	4/3/—	78	13.5MHz/3 – 5.5V 20.5MHz/4 – 5.5V 13.5MHz/3 – 5.5V 20.5MHz/4 – 5.5V 20.5MHz/4 – 5.5V	-20°C – 75°C	100-QFP 100-QFP 100-TQFP 100-TQFP 100-TQFP	DF2268FA13V-ND DF2268FA20V-ND DF2268TE13V-ND DF2268TE20V-ND DF2268TF20V-ND	17.00	15.87	14.73
													17.00	15.87	14.73
													17.60	16.43	15.25
													17.60	16.43	15.25
													17.60	16.43	15.25
Flash	384K	—	4K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	100-TQFP	DF2314VTE25V-ND	18.35	17.13	15.90
Flash	384K	—	8K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	100-QFP 100-TQFP	DF2315VF25V-ND DF2315VTE25V-ND	18.00	16.80	15.60
													18.54	17.31	16.07
Flash	128K	—	8K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	100-TQFP 100-TQFP 100-TQFP	DF2317VTE25V-ND DF2317VTE125V-ND DF2317VF25V-ND	14.48	13.51	12.55
													9.98	7.99	6.74
													14.48	13.51	12.55
Flash	256K	—	8K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	100-QFP 100-TQFP 100-TQFP	DF2318VF25V-ND HD64F2318VTE25V-ND DF2318VTE25V-ND	15.30	14.28	13.26
													15.84	14.79	13.73
													22.84	14.79	13.73
Flash	512K	—	16K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	113-TFLGA 100-TQFP 100-QFP 100-QFP 100-QFP	DF2319CVLP25V-ND DF2319CVTE25V-ND DF2319EVF25V-ND DF2319EVTE25V-ND HD64F2319EVF25V-ND	25.86	21.34	19.82
													17.64	16.47	15.29
													24.00	22.40	20.80
													26.48	24.71	22.95
													26.48	24.71	22.95
Flash	512K	—	8K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	25MHz/3 – 3.6V	-20°C – 75°C	100-QFP 100-QFP 100-QFP 100-TQFP 100-QFP 100-QFP	DF2319VF25V-ND DF2319VTE25V-ND HD64F2319VF25V-ND HD64F2319VTE25V-ND DF2320VF25V-ND DF2320VTE25V-ND	20.76	19.38	18.00
													23.04	21.51	19.97
													20.76	19.38	18.00
													23.04	21.51	19.97
													21.90	20.44	18.98
Flash	512K	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	25MHz/3 – 3.6V	-20°C – 75°C	128-QFP 120-TQFP 120-TQFP 120-TQFP 120-TQFP	DF2326VF25V-ND DF2326VTE25V-ND DF2328BVF25V-ND DF2328BTE25V-ND DF2328VF25V-ND	16.20	15.12	14.04
													16.74	15.63	14.51
													16.38	15.29	14.20
													18.11	16.90	15.70
													16.38	15.29	14.20
Flash	384K	—	32K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	25MHz/3 – 3.6V	-20°C – 75°C	128-QFP 120-TQFP 120-TQFP 128-QFP 120-TQFP 128-QFP	DF2329BVF25V-ND DF2329BTE25V-ND HD64F2329BVF25V-ND HD64F2329BTE25V-ND DF2329EVF25V-ND DF2329EVTE25V-ND	18.90	17.64	16.38
													19.44	18.15	16.85
													18.90	17.64	16.38
													19.44	18.15	16.85
													29.72	27.74	25.76
													29.72	27.74	25.76
													27.24	25.43	23.61
													27.24	25.43	23.61
													29.72	27.74	25.76
													27.24	25.43	23.61
Flash	256K	—	8K	12-ch. 10-bit	4-ch. 8-bit	3 USART, Smart Card	2/6/—	118	25MHz/3 – 3.6V	-20°C – 75°C	144-QFP	DF2338VFC25V-ND	18.66	17.42	16.18
													28.20	26.32	24.44
													28.20	26.32	24.44
Flash	384K	—	32K	12-ch. 10-bit	4-ch. 8-bit	3 USART, Smart Card	2/6/—	118	25MHz/3 – 3.6V	-20°C – 75°C	144-QFP	DF2339VFC25V-ND	28.20	26.32	24.44
Flash	128K	—	4K	8-ch. 10-bit	2-ch. 8-bit	2 USART, Smart Card	2/6/—	79	20MHz/4.5 – 5.5V	-20°C – 75°C	100-TQFP	DF2345TE20V-ND	18.86	17.60	16.35
													18.86	17.60	16.35
Flash	128K	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/4.5 – 5.5V 13MHz/3 – 5.5V	-20°C – 75°C	120-TQFP 128-QFP 120-TQFP	DF2357TE20V-ND DF2357VF13V-ND DF2357VTE13V-ND	25.34	23.65	21.96
													23.04	21.51	19.97
													25.34	23.65	21.96
Flash	256K	—	16K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 – 3.6V	-20°C – 75°C	120-TQFP	DF2360VTE34V-ND	13.14	11.81	10.47
													13.14	11.81	10.47
Flash	256K	—	24K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 – 3.6V	-20°C – 75°C	120-TQFP	DF2361VTE34V-ND	13.58	12.20	10.82
													13.58	12.20	10.82
Flash	384K	—	32K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 – 3.6V	-20°C – 75°C	120-TQFP	DF2364VTE34V-ND	14.85	13.34	11.83
													14.85	13.34	11.83
Flash	384K	—	30K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 – 3.6V	-20°C – 75°C	120-TQFP	DF2366VF33V-ND DF2366VTE33V-ND	16.97	15.84	14.71
													17.34	16.19	15.03
Flash	384K	—	24K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	33MHz/3 – 3.6V	-20°C – 75°C	128-QFP 120-TQFP	DF2367VF33V-ND DF2367VTE33V-ND	16.97	15.84	14.71
													17.34	16.19	15.03
Flash	512K	—	32K	10-ch. 10-bit	2-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	94	34MHz/3 – 3.6V	-20°C – 75°C	120-TQFP	DF2368VTE34V-ND	14.66	13.68	12.71
													14.66	13.68	12.71
Flash	256K	—	16K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 – 3.6V	-20°C – 75°C	144-LQFP 145-TFLGA 144-LQFP 145-TFLGA	DF2370RVFQ34V-ND DF2370RVL34V-ND DF2370VQ34V-ND DF2370VLP34V-ND	13.91	12.98	12.06
													16.76	15.64	14.53
													14.63	13.14	11.66
													16.01	14.94	13.88
Flash	256K	—	24K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 – 3.6V	-20°C – 75°C	144-LQFP	DF2371RVFQ34V-ND	14.28	13.33	12.38
													14.28	13.33	12.38
Flash	256K	—	24K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 – 3.6V	-20°C – 75°C	145-TFLGA 144-LQFP 145-TFLGA	DF2371RVL34V-ND DF2371VQ34V-ND DF2371VLP34V-ND	17.15	16.01	14.86
													13.52	12.62	11.72
													16.38	15.29	14.20
Flash	256K	—	32K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 – 3.6V	-20°C – 75°C	144-LQFP 145-TFLGA 144-LQFP 145-TFLGA	DF2372RVFQ34V-ND DF2372RVL34V-ND DF2372VQ34V-ND DF2372VLP34V-ND	14.66	13.68	12.71
													17.52	16.36	15.19
													13.91	12.98	12.06
													16.76	15.64	14.53
Flash	384K	—	32K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 – 3.6V	-20°C – 75°C	144-LQFP 145-TFLGA 144-LQFP 145-TFLGA	DF2374RVFQ34V-ND DF2374RVL34V-ND DF2374VQ34V-ND DF2374VLP34V-ND	15.42	14.40	13.37
													18.29	17.07	15.85
													14.67	13.70	12.72
													19.25	17.97	16.68



• RoHS Compliant *SSU = SPI[®]

(Continued)

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C

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	384K	—	30K	16-ch. 10-bit	4-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	97	33MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	DF2376VFQ33V-ND	17.34	16.19	15.03
Flash	384K	—	24K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	33MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	DF2377RVFQ33V-ND	17.90	16.71	15.51
											144-LQFP	DF2377RVFQ33WV-ND	18.80	17.55	16.29
											144-LQFP	HD64F2377RVFQ33-ND	17.90	16.71	15.51
											144-LQFP	HD64F2377RVFQ33W-ND	18.80	17.55	16.29
144-LQFP	DF2377VFQ33V-ND	17.34	16.19	15.03											
Flash	512K	—	32K	16-ch. 10-bit	6-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	2/6/—	113	34MHz/3 - 3.6V 35MHz/3 - 3.6V 35MHz/3 - 3.6V 34MHz/3 - 3.6V 34MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	DF2378AVFQ34V-ND	16.20	15.12	14.04
											144-LQFP	DF2378BVFQ35V-ND	15.42	14.40	13.37
											144-LQFP	DF2378BVFQ35WV-ND	16.97	15.84	14.71
											145-TFLGA	DF2378BVL34V-ND	18.29	17.07	15.85
											144-LQFP	DF2378RVFQ34V-ND	16.20	15.12	14.04
144-TFLGA	DF2378RVL34V-ND	20.96	19.56	18.17											
Flash	256K	—	8K	8-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card	2/6/—	95	20MHz/4.5 - 5.5V	-20°C - 75°C	120-TQFP	DF2398TE20V-ND	16.74	15.63	14.51
											128-QFP	DF2398F20V-ND	17.82	16.64	15.45
											128-QFP	DF2398F20V-ND	16.20	15.12	14.04
Flash	256K	—	16K	16-ch. 10-bit	—	5 USART, 4 I ² C	4/5/—	110	20MHz/3 - 3.6V	-20°C - 75°C	128-QFP	DF2437FV-ND	16.20	15.12	14.04
Flash	384K	—	32K	16-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card, 2 I ² C	4/6/—	120	26MHz/3 - 5.5V	-40°C - 75°C	176-LFBGA	DF2505BR26DV-ND	25.01	23.34	21.68
											144-QFP	DF2505FC26V-ND	22.86	21.34	19.82
Flash	512K	—	32K	16-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card, 2 I ² C	4/6/—	120	26MHz/3 - 5.5V	-40°C - 75°C	176-LFBGA	DF2506BR26DV-ND	27.00	25.20	23.40
Flash	384K	—	24K	16-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card, 2 I ² C	4/6/—	120	26MHz/3 - 5.5V	-40°C - 75°C	176-LFBGA	DF2511BR26DV-ND	26.00	24.27	22.53
											144-QFP	DF2511FC26V-ND	24.00	22.40	20.80
Flash	512K	—	32K	16-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card, 2 I ² C	4/6/—	120	26MHz/3 - 5.5V	-40°C - 75°C	176-LFBGA	DF2522BR26DV-ND	27.90	26.04	24.18
											144-QFP	DF2522FC26V-ND	26.00	24.27	22.53
Flash	512K	—	32K	16-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card, 2 I ² C, 1 CAN	4/6/—	120	20MHz/3 - 5.5V	-40°C - 75°C	144-QFP	DF2556FC20DV-ND	26.00	24.27	22.53
											80-QFP	DF2612FA20V-ND	16.01	14.94	13.88
Flash	256K	—	12K	16-ch. 10-bit	—	3 USART, Smart Card, 1 CAN	—/6/—	70	20MHz/4.5 - 5.5V	-40°C - 85°C	100-QFP	DF2623FA20V-ND	28.97	27.04	25.11
											100-QFP	DF2623FA20V-ND	24.00	22.40	20.80
Flash	128K	—	8K	16-ch. 10-bit	—	2 USART, 2 SSU*, Smart Card, 1 CAN	4/6/—	76	24MHz/4.5 - 5.5V	-20°C - 75°C	100-QFP	DF2628FA24V-ND	16.01	14.94	13.88
											128-QFP	DF2630F20V-ND	36.20	33.79	31.37
Flash	384K	—	16K	12-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 CAN	—/6/—	84	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2630UF20V-ND	37.52	35.02	32.52
											128-QFP	DF2630WF20V-ND	38.48	35.91	33.35
Flash	256K	—	16K	16-ch. 10-bit	4-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	4/6/—	89	16MHz/3 - 3.6V 25MHz/3 - 3.6V 25MHz/3 - 3.6V	-20°C - 75°C	128-QFP	DF2633F16V-ND	21.90	20.44	18.98
											128-QFP	DF2633F25V-ND	21.90	20.44	18.98
											120-TQFP	DF2633TE25V-ND	24.00	22.40	20.80
Flash	256K	—	16K	16-ch. 10-bit	4-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	4/6/—	89	28MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2633RF28V-ND	19.01	17.74	16.48
											120-TQFP	DF2633RTE28V-ND	19.61	18.30	17.00
											120-TQFP	HD64F2633RTE28-ND	19.61	18.30	17.00
Flash	256K	—	16K	16-ch. 10-bit	4-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	4/6/—	89	16MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	DF2633TE16V-ND	23.81	22.22	20.64
											128-QFP	DF2636F20V-ND	22.28	20.79	19.31
Flash	128K	—	4K	12-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 CAN	—/6/—	84	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2636UF20V-ND	23.63	22.05	20.48
											128-QFP	DF2636WF20V-ND	25.14	23.47	21.79
Flash	256K	—	16K	12-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 CAN	—/6/—	84	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2638F20V-ND	30.66	28.62	26.58
											128-QFP	HD64F2638F20V-ND	26.28	24.53	22.78
											128-QFP	DF2638UF20V-ND	27.42	25.60	23.77
Flash	256K	—	16K	12-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 I ² C, 2 CAN	—/6/—	84	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2638WF20V-ND	33.29	31.07	28.85
											128-QFP	DF2639UF20V-ND	27.80	25.95	24.09
Flash	256K	—	16K	12-ch. 10-bit	2-ch. 8-bit	3 USART, Smart Card, 2 I ² C, 2 CAN	—/6/—	84	20MHz/4.5 - 5.5V	-20°C - 75°C	128-QFP	DF2639WF20V-ND	28.76	26.84	24.93
											144-QFP	DF2643FC16V-ND	23.04	21.51	19.97
Flash	256K	—	16K	16-ch. 10-bit	4-ch. 8-bit	5 USART, IrDA, Smart Card, 2 I ² C	4/6/—	111	16MHz/3 - 3.6V 25MHz/3 - 3.6V	-20°C - 75°C	144-QFP	DF2643FC25V-ND	23.04	21.51	19.97
											144-QFP	DF2646RF20V-ND	30.29	28.27	26.25
Flash	128K	—	4K	12-ch. 10-bit	—	2 USART, Smart Card, 1 CAN	—/6/—	108	20MHz/4.5 - 5.5V	-20°C - 75°C	144-QFP	DF2646RF20V-ND	25.14	23.47	21.79
											144-QFP	DF2648RF20V-ND	31.62	29.52	27.41
Flash	128K	—	4K	12-ch. 10-bit	—	3 USART, Smart Card, 1 CAN	—/6/—	108	20MHz/4.5 - 5.5V	-20°C - 75°C	144-QFP	DF2648RF20V-ND	26.28	24.53	22.78
											144-LQFP	DF2667VFQ33V-ND	18.66	17.42	16.18
Flash	384K	—	16K	12-ch. 10-bit	4-ch. 8-bit	3 USART, IrDA, Smart Card	2/6/—	115	33MHz/3 - 3.6V	-20°C - 75°C	144-LQFP	DF2676VFQ33V-ND	18.66	17.42	16.18
											144-QFP	DF2676VFQ33V-ND	20.00	18.67	17.33

H8SX Series

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	256K	—	12K	16-ch. 10-bit	—	2 USART, 3 SSU*, Smart Card	—/12/—	99	48MHz/4.5 - 5.5V	-20°C - 85°C	120-LQFP	DF61582N48FPV-ND	22.86	21.34	19.82
ROMless	—	—	40K	8-ch. 10-bit	2-ch. 8-bit	5 USART, Smart Card	4/6/2	50	50MHz/3.0 - 3.6V	-20°C - 75°C	120-LQFP	DS61651N50FPV-ND NEW!	9.57	8.60	7.63
ROMless	—	—	40K	8-ch. 10-bit	2-ch. 8-bit	4 USART, IrDA, Smart Card	4/6/—	90	50MHz/3 - 3.6V	-20°C - 75°C	120-LQFP	DS61651N50FPV-ND	9.69	8.70	7.72
Flash	384K	—	40K	8-ch. 10-bit	2-ch. 8-bit	6 USART, IrDA, USB FS, Smart Card, 2 I ² C	8/6/—	75	50MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	R5F61653N50FTV-ND	17.15	16.01	14.86
											120-TQFP	DF61654N50FTV-ND	18.59	17.35	16.11
Flash	512K	—	40K	8-ch. 10-bit	2-ch. 8-bit	6 USART, IrDA, Smart Card, 2 I ² C	8/6/—	84	50MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	DF61656N35FTV-ND	17.52	16.36	15.19
											120-TQFP	DF61656W35FTV-ND	19.28	17.99	16.71
Flash	768K	—	24K	8-ch. 10-bit	2-ch. 8-bit	4 USART, Smart Card	4/6/—	90	35MHz/3 - 3.6V	-20°C - 75°C	120-TQFP	DF61657N35FTV-ND	19.01	17.74	16.48
											144-LQFP	DF61663N50FPV-ND	17.52	16.36	15.19
Flash	384K	—	40K	8-ch. 10-bit	2-ch. 8-bit	6 USART, IrDA, 2 I ² C	8/6/—	101	50MHz/3 - 3.6V	-20°C - 85°C	144-LQFP	DF61663W50FPV-ND	19.28	17.99	16.71
											144-LQFP	DF61664W50FPV-ND	20.85	19.46	18.07

◆ RoHS Compliant *SSU = SPI®

M16C Family

The M16C family offers the industry's broadcast multi-purpose microcontroller platform, with seamless code and pin compatibility – all the way from 8-bit to 32-bit functionality. A robust platform of 16/32-bit CISC microcontrollers with speeds from 16MHz - 64MHz, up to 512K on-chip flash memory, high ROM code efficiency, extensive EMI/EMS noise immunity, and very low power consumption. It also features a broad choice of standard on-chip peripheral options and the highest pin-to-pin compatibility (up to 144 pins) in the industry.

M16C Platform Series

Memory Type	ROM Bytes	Data Flash Bytes	RAM Bytes	A/D	D/A	Serial Communication	Timers 8/16/32	GPIO	Operating Frequency/Supply Voltage	Temperature	Package	Digi-Key Part No.	Price Each		
													1	25	100
Flash	64K	—	3K	14-ch. 10-bit	1-ch. 8-bit	2 USART, 1 CAN	4/1/—	37	16MHz/4.2 - 5.5V	-40°C - 85°C	48-LQFP	M301N2F8TFFU3-ND	14.52	13.56	12.59
Flash	128K	—	10K	8-ch. 10-bit	—	4 USART, 1 I ² C	—/5/—	85	16MHz/3 - 3.6V	-20°C - 85°C	100-LQFP	M30245FCGPFU1-ND	15.00	14.00	13.00
Flash	96K	4K	5K	18-ch. 10-bit	—	3 USART, 3 I ² C	—/6/—	88	16MHz/2.7 - 5.5V	-40°C - 85°C	100-QFP	M30302FAFPF0U3-ND	6.30	5.04	4.26
											100-QFP	M30302FAFPF0U5-ND	6.00	4.80	4.05

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