

Delta - Sigma A/D Converters

Resolution (bits)	Max Sample Rate (samples/sec)	Input Type	Interface	Supply Voltage Range	Typical Supply Current	Typical INL (PPM)	Package	Digi-Key Part No.	Price Each			Tape and Reel*	
									1	25	100	Qty.	Pricing
18	4	1 Differential	I ² C™	2.7V – 5.0V	155µA	10	SOT-23-6	MCP3421A5T-E/OTCT-ND†	3.67	3.28	2.95	3,000	1810.00/M
22	13	1 Differential	SPI™	2.7V – 5.5V	120µA	2	8-MSOP 8-SOIC	MCP3550-50E/MS-ND◆ MCP3550-50E/SN-ND◆	5.50 5.45	3.35 3.32	3.04 3.01	—	—
22	15	1 Differential	SPI™	2.7V – 5.5V	140µA	0.0002	8-MSOP 8-SOIC	MCP3550-60E/MS-ND◆ MCP3550-60E/SN-ND◆	5.50 5.45	3.35 3.32	3.04 3.01	—	—
22	14	1 Differential	SPI™	2.7V – 5.5V	120µA	0.0002	8-MSOP 8-SOIC	MCP3551-E/MS-ND◆ MCP3551-E/SN-ND◆	5.50 5.45	3.35 3.32	3.04 3.01	—	—
20	60	1 Differential	SPI™	2.7V – 5.5V	140µA	0.0002	8-MSOP 8-SOIC	MCP3553-E/MS-ND◆ MCP3553-E/SN-ND◆	5.50 5.45	3.35 3.32	3.04 3.01	—	—
Evaluation Board for MCP3421								MCP3421EV-ND	15.00	—	—	—	—
Demo Board for MCP355X								MCP355XDM-TAS-ND	45.00	—	—	—	—
Demo Board for MCP355X								MCP355XDV-MS1-ND	145.00	—	—	—	—
Evaluation Board for PT100 RTD Sensor								TMPSNS-RTD1-ND	45.00	—	—	—	—

Dual Slope A/D Converters

Supply Voltage Range (V)	Input Voltage Range (V)	Resolution	Sampling Rate (Conv/Sec)	Input Channels	Interface	Differential Input Range	Programmable Resolution/Conversion Time	Charge Pump (-V) Output Pin	Package	Digi-Key Part No.	Price Each		
											1	25	100
±4.5 – ±7.5	V _{SS} +1.5V to V _{DD} -1.5V	Up to 17 bits	4 – 10	1	3-Wire	Yes	Yes	No	16-SOIC 16-DIP	TC500ACOE-ND◆ TC500ACPE-ND◆	4.80 4.23	2.93 2.58	2.66 2.35
±4.5 – ±7.5	V _{SS} +1.5V to V _{DD} -1.5V	Up to 16 bits	4 – 10	1	3-Wire	Yes	Yes	No	16-SOIC 16-DIP	TC500COE-ND◆ TC500CPE-ND◆	4.23 3.10	2.58 1.89	2.35 1.72
±4.5 – ±5.5	—	—	—	—	Serial Port	No	No	No	14-DIP	TC520ACPD-ND◆	5.53	5.28	4.80
±4.5 – ±5.5	V _{SS} +1.5V to V _{DD} -1.5V	12 bits plus sign bit	2 – 10	1	Serial Port	Yes	No	No	40-DIP 44-POFP	TC7109ACPL-ND◆ TC7109ACKW-ND	7.48 10.58	7.15 10.12	6.50 9.20
±4.5 – ±5.5	V _{SS} +1.5V to V _{DD} -1.5V	12 bits plus sign bit	2 – 10	1	Serial Port	Yes	No	No	40-DIP	TC7109CPL-ND◆	6.33	6.05	5.50

Display A/D Converters

Display Type	Supply Voltage (V)	Resolution (Digits)	Resolution (Counts)	Power (mW)	For DMM, DPM, Data Loggers	Hold Function	Package	Digi-Key Part No.	Price Each		
									1	25	100
LCD	9	3.75	4,000	10	No	No	40-DIP	TC820CPL-ND	9.68	9.26	8.42
LCD	9	3.5	2,000	10	No	Yes		TC7106ACPL-ND◆	4.50	4.30	3.91
LCD	9	3.5	2,000	10	Yes	No		TC7106CPL-ND◆	3.93	3.75	3.40
LED	5	3.5	2,000	10	No	Yes		TC7107ACPL-ND	4.25	4.07	3.70
LED	5	3.5	2,000	10	No	Yes	44-MQFP 40-DIP	TC7107CKW-ND◆ TC7107CPL-ND◆	3.68 3.68	3.53 3.53	3.21 3.21
LCD	9	3.5	2,000	10	No	Yes	40-DIP	TC7116ACPL-ND◆	5.73	5.48	4.98
LCD	9	3.5	2,000	10	No	Yes		TC7116CPL-ND◆	4.60	4.40	4.00
LED	5	3	2,000	10	No	Yes		TC7117ACPL-ND◆	5.98	5.72	5.20
LED	5	3	2,000	10	No	Yes	44-MQFP 40-DIP	TC7117CKW-ND◆ TC7117CPL-ND◆	4.15 4.15	3.96 3.96	3.60 3.60
LCD	9	3.5	2,000	0.5	No	No	40-DIP	TC7126CPL-ND◆	5.75	5.50	5.00
LCD	9	4.5	20,000	4.5	No	No		TC7129CPL-ND	12.23	11.70	10.64

Binary and BCD A/D Converters



Description	Supply Voltage (V)	Input Voltage Range (V)	Resolution (Digits)	Resolution (Counts)	Maximum Power (mW)	Interface	For DMM, DPM, Data Loggers	Package	Digi-Key Part No.	Price Each		
										1	25	100
BCD A/D	4.5 – ±8	199.9mV – 1.999	3	2,000	20	MUXed BCD	Yes	24-DIP	TC14433AEPG-ND TC14433BEPG-ND	5.75 5.75	5.50 5.50	5.00 5.00

D/A Converters

Resolution (Bits)	DACs per Package	Interface	Vref	Output Settling Time (s)	DNL (LSB)	Typical Standby Current (µA)	Typical Operating Current (µA)	Package	Digi-Key Part No.	Price Each			Tape and Reel*	
										1	25	100	Qty.	Pricing
12	1	I ² C™	External	6	0.2	0.06	210	SOT-23-6	MCP4725A0T-E/CHCT-ND†	1.33	.81	.74	3,000	662.50/M
12	1	2 SPI™	Internal	4	0.2	0.3	330	8-MSOP	MCP4821-E/MS-ND◆	3.03	1.92	1.74	—	—
								8-DIP	MCP4821-E/P-ND◆	3.03	1.92	1.74	—	—
								8-SOIC	MCP4821-E/SN-ND◆	3.18	2.01	1.83	—	—
12	2	2 SPI™	Internal	4	0.2	0.3	415	8-MSOP	MCP4822-E/MS-ND◆	3.95	2.50	2.27	—	—
								8-DIP	MCP4822-E/P-ND◆	3.95	2.50	2.27	—	—
								8-SOIC	MCP4822-E/SN-ND◆	3.95	2.50	2.27	—	—
12	1	SPI™	External	4.5	0.25	0.5	125	8-MSOP	MCP4921-E/MS-ND◆	2.60	1.65	1.50	—	—
								8-MSOP	MCP4921T-E/MSCT-ND†	2.91	2.60	2.34	2,500	1500.01/M
								8-DIP	MCP4921-E/P-ND◆	2.60	1.65	1.50	—	—
								8-SOIC	MCP4921-E/SN-ND◆	2.60	1.65	1.50	—	—
12	2	SPI™	External	4.5	0.25	0.5	250	14-DIP	MCP4922-E/P-ND◆	3.45	2.19	1.99	—	—
								14-SOIC	MCP4922-E/SL-ND◆	3.45	2.19	1.99	—	—
								14-SOIC	MCP4922T-E/SLCT-ND†	3.86	3.45	3.11	2,600	1990.00/M
								14-TSSOP	MCP4922-E/ST-ND◆	3.45	2.19	1.99	—	—
								14-TSSOP	MCP4922T-E/STCT-ND†	3.86	3.45	3.11	2,500	1990.00/M

Digital Potentiometers

No. of Taps	No. per Package	Interface	Resistance (Ω)	Max. INL ± (LSB)	Max. DNL ± (LSB)	Temperature Range (°C)	Package	Digi-Key Part No.	Price Each			Tape and Reel*	
									1	25	100	Qty.	Pricing
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 – 125	8-DFN	MCP4011T-103E/MCCT-ND†	.76	.68	.61	—	—
			10,000				8-MSOP	MCP4011-103E/MS-ND◆	.68	.42	.39	—	—
			10,000				8-SOIC	MCP4011-103E/SN-ND◆	.68	.42	.39	—	—
			2,100				8-MSOP	MCP4011-202E/MS-ND◆	.68	.42	.39	—	—
			2,100				8-SOIC	MCP4011-202E/SN-ND◆	.68	.42	.39	—	—
			5,000				8-MSOP	MCP4011-502E/MS-ND◆	.68	.42	.39	—	—

◆ RoHS Compliant * For Tape and Reel part number, change CT-ND to TR-ND. † Cut Tape

(Continued)

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

More Product Available Online: www.digkey.com



**Mixed Signal
Digital Potentiometers (Cont.)**

No. of Taps	No. per Package	Interface	Resistance (Ω)	Max. INL ± (LSB)	Max. DNL ± (LSB)	Temperature Range (°C)	Package	Digi-Key Part No.	Price Each			Tape and Reel*								
									1	25	100	Qty.	Pricing							
64	1	Up/Down Protocol	5,000	0.5	0.5	-40 - 125	8-SOIC	MCP4011-502E/SN-ND	.68	.42	.39	—	—							
			50,000					MCP4011-503E/MCCT-ND	.76	.68	.61	—	—							
			50,000					MCP4011-503E/MS-ND	.68	.42	.39	—	—							
			50,000					MCP4011-503E/SN-ND	.68	.42	.39	—	—							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-6	MCP4012T-103E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			2,100					MCP4012T-202E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			5,000					MCP4012T-502E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			50,000					MCP4012T-503E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-6	MCP4013T-103E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			2,100					MCP4013T-202E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			5,000					MCP4013T-502E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
			50,000					MCP4013T-503E/CHCT-ND	.76	.68	.61	3,000	390.00/M							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-5	MCP4014T-103E/OTCT-ND	.76	.68	.61	3,000	390.00/M							
			2,100					MCP4014T-202E/OTCT-ND	.76	.68	.61	3,000	390.00/M							
			5,000					MCP4014T-502E/OTCT-ND	.76	.68	.61	3,000	390.00/M							
			50,000					MCP4014T-503E/OTCT-ND	.76	.68	.61	3,000	390.00/M							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	8-DFN	MCP4021T-103E/MCCT-ND	1.23	1.10	.99	3,300	630.00/M							
			10,000					MCP4021-103E/MS-ND	1.05	.67	.61	—	—							
			10,000					MCP4021-103E/SN-ND	1.03	.65	.59	—	—							
			2,100					MCP4021T-202E/MCCT-ND	1.23	1.10	.99	3,300	630.00/M							
			2,100					MCP4021-202E/MS-ND	1.05	.67	.61	—	—							
			2,100					MCP4021-202E/SN-ND	1.03	.65	.59	—	—							
			5,000					MCP4021T-502E/MCCT-ND	1.23	1.10	.99	—	—							
			5,000					MCP4021-502E/MS-ND	1.05	.67	.61	—	—							
			5,000					MCP4021-502E/SN-ND	1.03	.65	.59	—	—							
			50,000					MCP4021T-503E/MCCT-ND	1.23	1.10	.99	3,300	630.00/M							
			50,000					MCP4021-503E/MS-ND	1.05	.67	.61	—	—							
			50,000					MCP4021-503E/SN-ND	1.03	.65	.59	—	—							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-6	MCP4022T-103E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			2,100					MCP4022T-202E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			5,000					MCP4022T-502E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			50,000					MCP4022T-503E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-6	MCP4023T-103E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			2,100					MCP4023T-202E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			5,000					MCP4023T-502E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
			50,000					MCP4023T-503E/CHCT-ND	1.18	1.05	.95	3,000	600.00/M							
64	1	Up/Down Protocol	10,000	0.5	0.5	-40 - 125	SOT-23-5	MCP4024T-103E/OTCT-ND	1.18	1.05	.95	3,000	600.00/M							
			2,100					MCP4024T-202E/OTCT-ND	1.18	1.05	.95	3,000	600.00/M							
			5,000					MCP4024T-502E/OTCT-ND	1.18	1.05	.95	3,000	600.00/M							
			50,000					MCP4024T-503E/OTCT-ND	1.18	1.05	.95	3,000	600.00/M							
129	1	SPI™	10,000	0.5	0.25	-40 - 125	8-MSOP	MCP4131-103E/MS-ND NEW!	.90	.56	.51	—	—							
129	2	SPI™	10,000	0.5	0.5	-40 - 125	14-SOIC	MCP4231-103-E/SL-ND	1.23	.75	.68	—	—							
129	2	SPI™	10,000	0.5	0.5	-40 - 125	14-DIP	MCP4231-103-E/P-ND	1.23	.75	.68	—	—							
129	2	SPI™	10,000	0.5	0.25	-40 - 125	10-MSOP	MCP4232-103-E/UN-ND	1.23	.75	.69	—	—							
129	2	SPI™	10,000	0.5	0.25	-40 - 125	14-SOIC	MCP4241-103E/SL-ND	1.45	.88	.80	—	—							
			10,000					MCP4241-103-E/P-ND	1.45	.88	.80	—	—							
			10,000					MCP4241-103E/ST-ND	1.45	.88	.80	—	—							
			100,000					MCP4241-104E/SL-ND	1.45	.88	.80	—	—							
			100,000					MCP4241-104E/ST-ND	1.45	.88	.80	—	—							
			5,000					MCP4241-502E/SL-ND	1.45	.88	.80	—	—							
			5,000					MCP4241-502E/ST-ND	1.45	.88	.80	—	—							
			50,000					MCP4241-503E/SL-ND	1.45	.88	.80	—	—							
			50,000					MCP4241-503E/ST-ND	1.45	.88	.80	—	—							
			129					2	SPI™	10,000	0.5	0.25	-40 - 125	10-MSOP	MCP4242-103-E/UN-ND	1.45	.88	.80	—	—
			257					2	SPI™	10,000	0.5	0.25	-40 - 125	14-SOIC	MCP4251-103-E/SL-ND	1.45	.88	.80	—	—
			257					2	SPI™	10,000	0.5	0.25	-40 - 125	14-DIP	MCP4251-103-E/P-ND	1.45	.88	.80	—	—
257	2	SPI™	10,000	0.5	0.25	-40 - 125	10-MSOP	MCP4252-103-E/UN-ND	1.45	.89	.81	—	—							
257	2	SPI™	10,000	1	0.5	-40 - 125	14-SOIC	MCP4261-103-E/SL-ND	1.65	1.01	.92	—	—							
257	2	SPI™	10,000	1	0.5	-40 - 125	14-DIP	MCP4261-103-E/P-ND	1.65	1.01	.92	—	—							
257	2	SPI™	10,000	1	0.5	-40 - 125	10-MSOP	MCP4262-103-E/UN-ND	1.65	1.01	.92	—	—							
256	1	SPI™	10,000	1	1	-40 - 85	8-DIP	MCP41010-I/P-ND	1.78	1.12	1.02	—	—							
256	1	SPI™	50,000	1	1	-40 - 85	8-SOIC	MCP41010-I/SN-ND	1.78	1.12	1.02	—	—							
256	1	SPI™	50,000	1	1	-40 - 85	8-DIP	MCP41050-I/P-ND	1.78	1.12	1.02	—	—							
256	1	SPI™	100,000	1	1	-40 - 85	8-SOIC	MCP41050-I/SN-ND	1.78	1.12	1.02	—	—							
256	2	SPI™	10,000	1	1	-40 - 85	14-DIP	MCP42010-I/P-ND	2.65	1.68	1.52	—	—							
256	2	SPI™	10,000	1	1	-40 - 85	14-SOIC	MCP42010-I/SL-ND	2.65	1.68	1.52	—	—							
			14-TSSOP				MCP42010-I/ST-ND	2.65	1.68	1.52	—	—								
			14-DIP				MCP42050-I/P-ND	2.65	1.68	1.52	—	—								
			14-SOIC				MCP42050-I/SL-ND	2.65	1.68	1.52	—	—								
256	2	SPI™	50,000	1	1	-40 - 85	14-SOIC	MCP42050-I/ST-ND	2.65	1.68	1.52	—	—							
			14-TSSOP				MCP42050-I/ST-ND	2.65	1.68	1.52	—	—								
			14-DIP				MCP42100-I/P-ND	2.65	1.68	1.52	—	—								
			14-SOIC				MCP42100-I/SL-ND	2.65	1.68	1.52	—	—								
256	2	SPI™	100,000	1	1	-40 - 85	14-TSSOP	MCP42100-I/ST-ND	2.65	1.68	1.52	—	—							
							14-SOIC	MCP42100-I/ST-ND	2.65	1.68	1.52	—	—							
Evaluation Board for MCP4022, MCP4023 and MCP4024								VSUPEV2-ND	10.00	—	—	—	—							
Evaluation Board for MCP402X								MCP4023EV-ND	15.00	—	—	—	—							
Daughter Board for MCP4XXX								MCP4XXXDM-DB-ND	25.00	—	—	—	—							
Evaluation Board for Supervisor SOT23								VSUPEV-ND	5.00	—	—	—	—							
14-Pin SOIC/TSSOP/DIP Evaluation Board								SOIC14EV-ND	20.00	—	—	—	—							



Frequency-to-Voltage / Voltage-to-Frequency



Frequency Range (kHz)	Full Scale (ppm FS/°C)	Non-linearity (%FS)	Package	Digi-Key Part No.	1	25	100
100	40	±0.02	14-SOIC	TC9400C0D-ND	7.13	6.82	6.20
			14-DIP	TC9400CPD-ND	6.33	6.05	5.50
			14-CDIP	TC9400EJD-ND	12.78	12.21	11.10
100	100	±0.25	14-DIP	TC9402CPD-ND	3.00	2.86	2.60

Energy Measurement

Measurement Error	Dynamic Range	Gain Selection	Voltage Reference Drift ppm typ.	MechCounter Drive (mA)	PSSR % typ.	Aldd Max. (mA)	Didd Max. (mA)	Supply Voltage Range (V)	Temperature Range (°C)	Package	Digi-Key Part No.	1	25	100
0.1%	500:1	1:16	15	15	0.01%	3	2	4.5 - 5.5	-40 - 85	24-SSOP	MCP3905-I/SS-ND	2.73	2.46	1.51
											MCP3905A-I/SS-ND	2.58	1.57	1.43
											MCP3905L-I/SS-ND	2.65	1.63	1.48
0.1%	1000:1	1:32	15	15	0.01%	3	2	4.5 - 5.5	-45 - 85	24-SSOP	MCP3906A-I/SS-ND	2.78	1.70	1.55
											MCP3909-I/SS-ND	2.88	1.76	1.60
0.1%	1000:1	1:16	15	15	0.01%	2.8	1.2	4.5 - 5.5	-40 - 85	24-SSOP	MCP3905EV-ND	75.00	—	—
											MCP3905RD-PM1-ND	45.00	—	—
											MCP3909RD-3PH1-ND	249.99	—	—

◆ RoHS Compliant * For Tape and Reel part number, change CT-ND to TR-ND. † Cut Tape

Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

More Product Available Online: www.digikey.com

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