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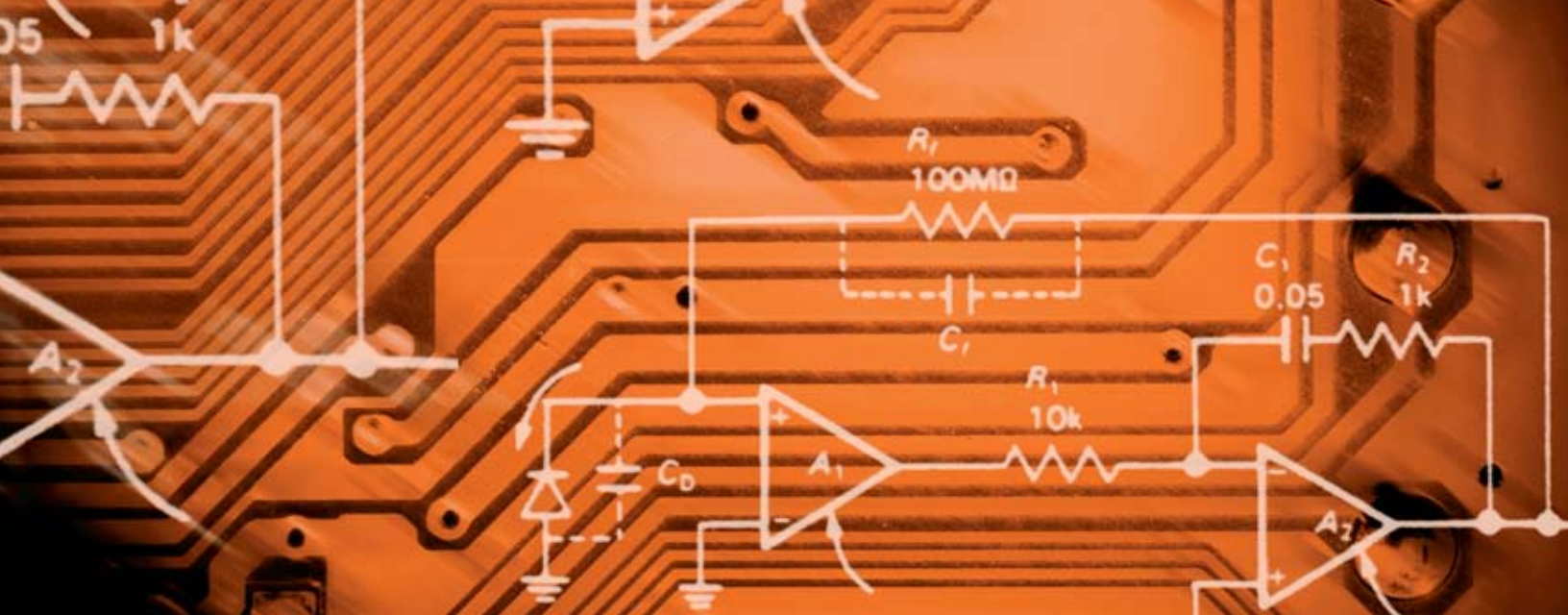
Understanding [Embedded - DSP \(Digital Signal Processors\)](#)

[Embedded - DSP \(Digital Signal Processors\)](#) are specialized microprocessors designed to perform complex mathematical computations on digital signals in real-time. Unlike general-purpose processors, DSPs are optimized for high-speed numeric processing tasks, making them ideal for applications that require efficient and precise manipulation of digital data. These processors are fundamental in converting and processing signals in various forms, including audio, video, and communication signals, ensuring that data is accurately interpreted and utilized in embedded systems.

Applications of [Embedded - DSP \(Digital Signal Processors\)](#)

Details

Product Status	Obsolete
Type	Fixed Point
Interface	I ² C, SPI
Clock Rate	150MHz
Non-Volatile Memory	-
On-Chip RAM	128kB
Voltage - I/O	3.30V
Voltage - Core	1.80V
Operating Temperature	0°C ~ 70°C (TA)
Mounting Type	Surface Mount
Package / Case	100-LQFP Exposed Pad
Supplier Device Package	100-LQFP (16x16)
Purchase URL	https://www.e-xfl.com/product-detail/cirrus-logic/cs47028b-cqzr



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Audio D/A Converters

SPECIFICATIONS

Part Number	Channels	Resolution (bits)	Dynamic Range (dB)	THD+N (dB)	Sample Rate (kHz)	Analog Outputs	Power Supply (V)	Comments	Package
CS4334/35/38/39	2	24	96	−88	96	Single-ended	VA = 5	Entry-level stereo DAC	8 SOIC
CS4344/45/46/48	2	24	105	−90	192	Single-ended	VA = 3.3 or 5	Upgrade for CS4340 and CS4340A	10 TSSOP
CS4349	2	24	101	−91	192	Single-ended	VA = 3.3 or 5	1 V _{RMS} @ 3.3 V, Volume Control	24 TSSOP
CS4350	2	24	109	−91	192	Single-ended or Differential	VA = 3.3 or 5 VLC = 3.3 to 5 VLS = 1.5 to 5	Integrated PLL, TDM	24 TSSOP
CS4351	2	24	112	−100	192	Single-ended	VA = 9 or 12 VD = 3.3 VL = 1.8 to 3	Line driver, 2 V _{RMS} output	20 TSSOP
CS4352	2	24	106	−93	192	Single-ended	VA = 9 or 12 VD = 3.3 VL = 1.5 to 5	Line driver, 2 V _{RMS} output	20 TSSOP
NEW CS4353	2	24	106	−93	192	Single-ended	VA = 3.3 VCP = 3.3 VL = 0.9 to 3.3	Ground-centered 2 V _{RMS} line-level outputs	24 QFN
CS4361	6	24	105	−95	192	Single-ended	VA = 5 VL = 1.8 to 5	Entry-level 6-channel DAC	20 TSSOP
CS4362A/82A	6/8	24	114	−100	192	Differential	VA = 5 VD = 2.5 VL = 1.8 to 5	6-/8-channel DAC, DSD	48 LQFP
CS4364/84	6/8	24	103	−88	192	Single-ended	VA = 5 VD = 2.5 VL = 1.8 to 5	6-/8-channel DAC, DSD, footprint compatible with CS4365/85	48 LQFP
CS4365/85	6/8	24	114	−100	192	Differential	VA = 5 VD = 2.5 VL = 1.8 to 5	6-/8-channel DAC, DSD, TDM	48 LQFP
CS4391A	2	24	108	−94	192	Differential	VA = 5 VL = 1.8 to 5	DSD, pin compatible with CS4392	20 TSSOP
CS4392	2	24	114	−100	192	Differential	VA = 5 VL = 1.8 to 5	DSD, selectable digital filters, pin compatible with CS4391A	20 TSSOP
CS4398	2	24	120	−107	192	Differential	VA = 5 VD = 3.3 or 5 VL = 1.8 to 5	Flagship DAC, DSD processor, selectable D-filter	28 TSSOP

Multichannel CODECs

SPECIFICATIONS

Part	Resolution (bits)	Dynamic Range (dB)	THD+N (dB)	Sample Rate (kHz)	Analog I/O	Power Supply (V)	Comments	Package
CS42324/25	24	100 DAC 95 ADC	−90 DAC −88 ADC	96	Single-ended	VA = 9 or 12 VD = 3.3 VL = 1.8 or 3.3	4 DACs, 2 ADCs, 2 V _{RMS} I/O, I/O MUX, HP Driver (CS42325 only)	48 LQFP
CS42416/26	24	110/114 DAC 114 ADC	−100 DAC −100 ADC	192	Differential DACs Single-ended or Differential ADCs	VA = 5 VD = 3.3 or 5 VL = 1.8 to 5	6 DACs, 2 ADCs, digital volume control	64 LQFP
CS42418/28	24	110/114 DAC 114 ADC	−100 DAC −100 ADC	192	Differential	VA = 5 VD = 3.3 or 5 VL = 1.8 to 5	8 DACs, 2 ADCs, PLL, digital volume control	64 LQFP
CS42432	24	108 DAC 105 ADC	−98 DAC −98 ADC	192	Single-ended or Differential	VA = 3.3 or 5 VD = 3.3 VL = 1.8 to 5	6 DACs, 4 ADCs TDM I/F	52 MQFP
CS42435	24	108 DAC 105 ADC	−98 DAC −98 ADC	192	Single-ended or Differential	VA = 3.3 or 5 VD = 3.3 VL = 1.8 to 5	8 DACs, 6 ADCs TDM I/F	52 MQFP
CS42436/38	24	105/108 DAC 102/105 ADC	−95/−98 DAC −95/−98 ADC	192	Single-ended or Differential	VA = 3.3 or 5 VD = 3.3 VL = 1.8 to 5	6/8 DACs, 6 ADCs TDM I/F	52 MQFP
CS42448	24	108 DAC 105 ADC	−98 DAC −98 ADC	192	Single-ended or Differential	VA = 3.3 or 5 VD = 3.3 to 5 VL = 1.8 to 5	8 DACs, 6 ADCs TDM and PCM I/F	64 LQFP
CS42516/26	24	110/114 DAC 114 ADC	−100 DAC −100 ADC	192	Differential	VA = 5 VD = 3.3 or 5 VL = 1.8 to 5	6 DACs, 2 ADCs, S/PDIF Rx, digital volume control	64 LQFP
CS42518/28	24	110/114 DAC 114 ADC	−100 DAC −100 ADC	192	Differential	VA = 5 VD = 3.3 or 5 VL = 1.8 to 5	8 DACs, 2 ADCs, S/PDIF Rx, digital volume control	64 LQFP
CS42888	24	108 DAC 105 ADC	−98 DAC −98 ADC	192	Single-ended or Differential	VA = 3.3 or 5 VD = 3.3 or 5 VL = 1.8 to 5	8 DACs, 4 ADCs, PCM and TDM I/F	64 LQFP

Interfaces & Sample-Rate Converters

SPECIFICATIONS

Part	Sample Rate (kHz)	S/PDIF, IEC-60958 Transmitter	S/PDIF, IEC-60958 Receiver	AES/EBU	EIAJ CP1201	Host Interface	Channel Status Buffer Memory	SRC	Package
CS8406	192	✓	—	✓	✓	✓	✓	—	28 SOIC 28 TSSOP
CS8416	192	—	✓	✓	✓	✓	✓	—	28 SOIC 28 TSSOP 28 QFN
CS8420	96	✓	✓	✓	✓	✓	✓	✓	28 SOIC
CS8421	192	—	—	—	—	—	—	✓	20 TSSOP 20 QFN
NEW CS8422	192	—	✓	✓	✓	✓	✓	✓	32 QFN
CS8427	96	✓	✓	✓	✓	✓	✓	—	28 SOIC 28 TSSOP

AC '97 CODECs

SPECIFICATIONS

Part	Bus	Converters	Feature	Package
CS4202	AC '97	20-bit stereo DAC; 18-bit stereo ADC	S/PDIF transmitter	48 TQFP/LQFP
CS4205	AC '97	20-bit stereo DAC; 18-bit stereo ADC	Sample-rate converter	48 TQFP/LQFP
CS4299	AC '97	20-bit stereo DAC; 18-bit stereo ADC	Sample-rate converter	48 TQFP/LQFP

Recommended Replacements for New Design

Not Recommended for New Design	Recommended Replacement
CS494xxx (CS494003)	CS4953xx
CS4950xx (CS495002)	CS4953xx
CS4951xx (CS495102)	CS4953xx
CS4952xx (CS495202)	CS4953xx

Algorithm & Nomenclature Abbreviations

Decoding Algorithm & Nomenclature Abbreviation Table	
DTSES = DTS-ES™ Matrix/Discrete	DD = Dolby Digital®
DTS = DTS Digital Surround™	DDEX = Dolby Digital® Surround EX®
DTS96 = 96 kHz/24-bit	DD+ = Dolby Digital® Plus
DTHD = Dolby® TrueHD	DTSHRA = DTS® High Resolution Audio
AAC = MPEG-2 AAC Multichannel	DTSMa = DTS® Master Audio
PP = Post-Processing	DTSLBR = DTS® Express
ES = Elementary Stream	MPEG = MPEG 2, Layer II Stereo & Multichannel
PES = Packetized Elementary Stream	MP3 = MPEG 1, Layer II & III CBR & VBR
CBR = Constant Bit Rate	VBR = Variable Bit Rate

Algorithm & Nomenclature Abbreviations (continued)

Post-Processing (PP1) Inclusion & Algorithm Abbreviation Table	
PL = Dolby® Pro Logic®	PLII = Dolby® Pro Logic® II
PLIIx = Dolby® Pro Logic® IIx	NEO = DTS:Neo6™
TSXT = SRS® TruSurround XT®	TSHD = SRS® TruSurround® HD/HD4
WOW™ = SRS® WOW™	WOWHD™ = SRS® WOW HD™
TB = SRS® TruBass®	TV = SRS® TruVolume®
CBM = Cross-Bar Mixer	TC = Tone Control
LIM = Compressor/Limiter	DVL = Cirrus® Dynamic Volume Leveler
L7 = Logic7™	DVS = Dolby® Virtual Speaker® 2
NER = Neural-THX® Surround	DH = Dolby Headphone® 2
THX = THX® Cinema	REEQ = THX® Cinema Re-EQ™
TEX = THX® Surround EX™	TUX = THX® Select2/Ultra2™ Surround EX
Post-Processing (PP2 includes all of the above +) Inclusion & Algorithm Abbreviation Table	
AUDY = Audyssey® MultEQ XT™	TUX+ = THX® Select2/Ultra2™ Surround EX™ with Loudness Plus
AUD = Audistry®	DYNVOL = Audyssey® Dynamic Volume® / Dynamic EQ®

CobraNet® Transport and Audio Network Processor ICs

SPECIFICATIONS

Family	Description	CobraNet® Part Numbers	Audio Channels over Ethernet	Serial Input/Serial Output Ports	Ethernet Interface	IC Package
CS1810xx CS4961xx*	The CS1810xx Family contains CobraNet® networked digital audio interface ICs. The CS4961xx Family provides digital audio signal processing along with the network interface function.	CS181002 CS496102*	2	One synchronous, capable of supplying up to 2 full-duplex channels at 48 and/or up to 96 kHz sample rates.	Supports 100BASE-Tx, 100 Mbps, full duplex Ethernet, fully compliant with IEEE 802.3u.	144 LQFP
		CS181012 CS496112*	8	Quad synchronous, capable of supplying up to 8 full-duplex channels at 48 and/or up to 96 kHz sample rates.		
		CS181022 CS496122*	16	Quad synchronous, capable of supplying up to 16 full-duplex channels at 48 kHz, or up to 8 channels at 96 kHz sample rates.		

*The CS4961xx series includes a 32-bit, 120 MIPS digital signal processor for audio processing of any or all channels.

Industrial Components

HIGH-PRECISION ANALOG & MIXED-SIGNAL ICs

Cirrus Logic high-precision analog and mixed-signal ICs for industrial measurement applications—such as industrial process control, analytical instruments, consumer utility, digital power meters and seismic systems—are based on proprietary advanced Delta-Sigma technology. Cirrus Logic provides many proprietary products, including analog-to-digital converters, digital-to-analog converters, modulator and amplifier ICs.

AMPLIFIERS

- CS3001
- CS3002
- CS3003
- CS3004
- CS3011
- CS3012
- CS3013
- CS3014

DELTA-SIGMA A/D CONVERTERS

- CS5505
- CS5506
- CS5507
- CS5508
- CS5509
- CS5510
- CS5511
- CS5512
- CS5513
- CS5529

DELTA-SIGMA A/D CONVERTERS WITH INTEGRATED AMPLIFIERS

- CS5521
- CS5522
- CS5523
- CS5524
- CS5525
- CS5526
- CS5528
- CS5530
- CS5531
- CS5532
- CS5533
- CS5534
- CS5550

HIGH-THROUGHPUT DELTA-SIGMA A/D CONVERTERS

- CS5560
- CS5566
- CS5571
- CS5581

GEOPHYSICAL PRODUCTS

Single-S™

- CS3301A
- CS3302A
- CS5373A
- CS5378

Total-S™

- CS3301A
- CS3302A
- CS4373A
- CS5371A
- CS5372A
- CS5376A

Extreme-S™

- CS5201
- CS5203A
- CS5204
- CS5205
- CS5207

ENERGY MEASUREMENT

- CS5451A
- CS5460A
- CS5461A
- CS5462
- CS5463
- CS5464
- CS5466
- CS5467

ENERGY MEASUREMENT SYSTEM-ON-CHIP

- CS740111
- CS740121
- CS740131

High-Throughput Delta-Sigma A/D Converters

SPECIFICATIONS

Part	Resolution (bits)	Throughput (kSPS)	Integral Linearity (%FS)	Differential Linearity ($\pm$ LSB)	Number of Channels	Power Consumption (mW)	Package
CS5560	24	50	± 5 ppm	0.1	1, Differential	90	24 SSOP
CS5566	24	5	± 5 ppm	0.1	1, Differential	20	24 SSOP
CS5571	16	100	± 8 ppm	0.1	1, Single-ended	85	24 SSOP
CS5581	16	200	± 8 ppm	0.1	1, Single-ended	85	24 SSOP

Geophysical Products Single-S™

SPECIFICATIONS

Part	Description	Resolution (bits)	Dynamic Range (dB)	THD (dB)	Power Consumption Per Channel (mW)	Signal Range (V)	Package
CS3301A	Geophone amplifier	—	—	–121	27.5	5 V _{p-p} diff	24 SSOP
CS3302A	Hydrophone amplifier	—	—	–118	25	5 V _{p-p} diff	24 SSOP
CS5373A	A/D converter	24	124	–118	25	5 V _{p-p} diff	28 SSOP
	D/A converter	24	114	–116	40	5 V _{p-p} diff	
CS5378	Filter with PLL	—	—	—	20	—	28 SSOP

Geophysical Products Total-S™

SPECIFICATIONS

Part	Description	Resolution (bits)	Dynamic Range (dB)	THD (dB)	Power Consumption Per Channel (mW)	Signal Range (V)	Package
CS3301A	Geophone amplifier	—	—	−121	27.5	5 V _{p-p} diff	24 SSOP
CS3302A	Hydrophone amplifier	—	—	−118	25	5 V _{p-p} diff	24 SSOP
CS4373A	D/A converter	24	114	−116	10	5 V _{p-p} diff	28 SSOP
CS5371A	Single A/D converter	24	124	−118	25	5 V _{p-p} diff	24 SSOP
CS5372A	Dual A/D converter	24	124	−118	25	5 V _{p-p} diff	24 SSOP
CS5376A	Quad filter	—	—	—	<10	—	64 TQFP

Geophysical Products Extreme-S™

SPECIFICATIONS

Part	Description	Resolution (bits)	Dynamic Range (dB)	THD (dB)	Power Consumption Per Channel (mW)	Signal Range (V)	Package
CS5201	High-temperature D/A converter	24	114	−116	10	5 V _{p-p} diff	28 SOIC ceramic
CS5203A	High-temperature amplifier	—	—	−121	28	5 V _{p-p} diff	24 SOIC ceramic
CS5204	High-temperature quad filter	—	—	—	<10	—	64 ceramic
CS5205	High-temperature A/D converter	24	122	−117	32.5	5 V _{p-p} diff	24 SOIC ceramic
CS5207	High-temperature A/D converter	24	122	−117	32.5	5 V _{p-p} diff	24 SOIC ceramic

Energy Measurement

SPECIFICATIONS

Part	Channels	Energy Data Linearity – 1000:1 Range	Energy Pulse Outputs	Instantaneous I and V	Real (Active) Power	I_{RMS} , V_{RMS}	Apparent Power (S)	Reactive Power (Q)	Temp Sensor	Package
CS5451A	6	—	—	✓	—	—	—	—	—	28 SSOP
CS5460A	2	0.1% of reading	✓	✓	✓	✓	—	—	—	24 SSOP
CS5461A	2	0.1% of reading	✓	✓	✓	✓	✓	—	✓	24 SSOP
CS5462	2	0.1% of reading	✓	—	✓	—	—	—	—	24 SSOP
CS5463	2	0.1% of reading	✓	✓	✓	✓	✓	✓	✓	24 SSOP
CS5464	3	0.1% of reading	✓	✓	✓	✓	✓	✓	✓	28 SSOP
CS5466	2	0.1% of reading	✓	—	✓	—	—	—	—	24 SSOP
CS5467	4	0.1% of reading	✓	✓	✓	✓	✓	✓	✓	28 SSOP

Energy Measurement System-on-Chip

SPECIFICATIONS

Part	ADCs	W, VA, VAR, PF, RMS	MCU	Flash	RAM	RTC	LCD Driver	Temp Sensor	SSI/UART	Package
CS740111	3	✓	ARM7TDMI	32 KB	8 KB	✓	✓	✓	1/2	64 LQFP
CS740121	3	✓	ARM7TDMI	64 KB	8 KB	✓	✓	✓	1/2	64 LQFP
CS740131	3	✓	ARM7TDMI	128 KB	8 KB	✓	✓	✓	1/2	64 LQFP

Apex Precision Power™ Products

POWER ANALOG ICs, MODULES AND HYBRIDS

Apex Precision Power™ is the brand name for Cirrus Logic's high performance precision power analog family of products. Apex Precision Power™ products drive innovation in the design and manufacturing of power operational amplifiers (linear) and pulse width modulation amplifiers (PWM/switching). A mix of IC, board-level module and hybrid product designs is used to deliver up to 50 A of output current while operating on voltage supplies ranging from 8.5 V up to 1200 V. Target applications focus on the high power precision control of current, voltage and speed applications in the industrial, test and measurement, aerospace and medical markets.

APEX PRECISION POWER™ HIGH-CURRENT LINEAR AMPLIFIERS

- PA50
- PA52
- MP230FC
- PA03
- PA05
- MP240FC
- PA04
- MP111FD
- PA12A
- PA13A
- MP108FDA
- MP39CLA
- MP108FD
- MP39CL
- PA12
- PA13
- PA51
- PA61
- MP38CLA
- PA93
- MP38CL
- PA01
- PA02
- PA07
- PA10
- PA16
- PA73
- PA162
- PA119
- PA92
- PA09M
- PA74A
- PA76A
- PA74
- PA76
- PA09
- PB50
- PA60EU
- PA75CC
- PA96
- PB51
- PB58
- PA12H

APEX PRECISION POWER™ HIGH-CURRENT PWM AMPLIFIERS

- SA03
- SA08
- SA01
- MSA260KC
- MSA240KC
- SA12
- SA306
- SA60
- SA50
- SA57

APEX PRECISION POWER™ HIGH-VOLTAGE LINEAR AMPLIFIERS

- PA89
- PA94
- PA95
- PA97
- PA15
- PA85
- PA88
- PA91
- PA98
- PA90
- PA92
- PA93
- PA240CC
- PA241CE
- PA243DF
- PA78DK
- PA79DK
- PA08
- PA82J
- PA83
- PA84
- PA96
- PB51
- PB58
- MP108FD
- MP240FC
- MP38CL
- PA04
- PA52
- PA69EU
- PA86EU
- PB50
- PA03
- PA81J
- MP111FD
- MP230FC
- MP39CL
- PA05
- PA07
- PA50

APEX PRECISION POWER™ HIGH-VOLTAGE PWM AMPLIFIERS

- MSA260KC
- SA08
- SA12
- MSA240KC
- SA01
- SA03
- SA50
- SA60

APEX PRECISION POWER™ HIGH-SPEED LINEAR AMPLIFIERS

- PA98
- PA85
- PA119
- PA94
- PA79DK
- PA78DK
- PA86EU
- MP400
- PA91
- PA90
- PB58
- PA96
- PA69EU
- PA09
- PA84
- MP108FDA
- MP108FD
- MP111FD
- PB51
- PB50
- PA05

Apex Precision Power™ High-Current Linear Amplifiers

SPECIFICATIONS

Model	Output Current MAX (A)	Supply Voltage MAX (V)	Slew Rate TYP (V/us)	Standby Current MAX (mA)	Power Dissipation MAX (W)
PA50	40	100	50	36	400
PA52	40	200	50	36	400
MP230FC	30	100	15	35	210
PA03	30	150	8	300	500
PA05	30	100	100	120	250
MP240FC	20	200	14	25	170
PA04	20	200	50	90	200
MP111FD	15	100	130	157	170
PA12A	15	100	4	50	125
PA13A	15	90	4	50	135
MP108FDA	11	200	170	65	100
MP39CLA	11	100	10	24	125
MP108FD	10	200	170	65	100
MP39CL	10	100	10	24	125
PA12	10	90	4	50	125
PA13	10	90	4	50	135
PA51	10	72	2.6	10	97
PA61	10	90	2.8	10	97
MP38CLA	8	200	63	24	125
PA93	8	400	50	14	125
MP38CL	7	200	63	24	125
PA01	5	56	2.6	50	67
PA02	5	38	20	40	48
PA07	5	100	4	30	67
PA10	5	90	3	30	67
PA16	5	38	20	40	62.5
PA73	5	60	2.6	5	67
PA162	4 x 1	40	1.4	20	45
PA119	4	80	900	120	78
PA92	4	400	50	14	80
PA09M	3	80	200	85	78
PA74A	2 x 3	40	1.4	40	36/60
PA76A	2 x 3	40	1.4	40	36/60
PA74	2 x 2.5	40	1.4	40	36/60
PA76	2 x 2.5	40	1.4	40	36/60
PA09	2	80	200	85	78
PB50	2	200	100	25	35
PA60EU	2 x 1.5	40	1.4	10	16/31
PA75CC	2 x 1.5	40	1.4	10	19/28
PA96	1.5	300	250	18	83
PB51	1.5	300	100	18	83
PB58	1.5	300	250	35	70
PA12H	1	90	4	100	6

Apex Precision Power™ High-Current PWM Amplifiers

SPECIFICATIONS

	Mode	Output Current MAX (A)	Supply Voltage MAX (V)	Switching Frequency (kHz)	Power Delivery MAX (W)	Power Dissipation MAX (W)
	SA03	30	100	22.5	73	300
	SA08	20	450	22.5	90	250
	SA01	20	100	42	78	185
	MSA260KC	20	450	50	20	250
	MSA240KC	20	100	50	78	250
	SA12	15	200	200	200	250
NEW	SA306	17	60	100	100	17
	SA60	10	80	250	12	140
	SA50	5	80	45	18	120
NEW	SA57	17	60	100	100	17

Apex Precision Power™ High-Voltage PWM Amplifiers

SPECIFICATIONS

Model	Supply Voltage MAX (V)	Output Current MAX (A)	Switching Frequency (kHz)	Power Delivery MAX (W)	Int. Power MAX (W)
MSA260KC	450	20	50	250	300
SA08	450	20	22.5	250	250
SA12	200	15	200	250	185
MSA240KC	100	20	50	250	250
SA01	100	20	42	185	250
SA03	100	30	22.5	300	250
SA50	80	5	45	120	140
SA60	80	10	250	140	80

Apex Precision Power™ High-Speed Linear Amplifiers

SPECIFICATIONS

Model	Slew Rate TYP (V/us)	Supply Voltage MAX (V)	Output Current MAX (A)	Standby Current MAX (mA)	Power Dissipation MAX (W)
PA98	1000	450	0.2	25	30
PA85	1000	450	0.2	25	30
PA119	900	80	4	120	78
PA94	700	900	0.1	24	30
PA79DK	350	350	0.15	2.5	26
PA78DK	350	350	0.15	2.5	23
PA86EU	350	200	0.15	2.5	23
MP400	350	50	0.2	2.5	14.2
PA91	300	450	0.2	14	30
PA90	300	400	0.2	14	30
PB58	250	300	1.5	35	70
PA96	250	300	1.5	18	83
PA69EU	200	200	0.05	2.5	23
PA09	200	80	2	85	78
PA84	180	300	0.04	7.5	17.5
MP108FDA	170	200	11	65	100
MP108FD	170	200	10	65	100
MP111FD	130	100	15	157	170
PB51	100	300	1.5	18	83
PB50	100	200	2	25	35
PA05	100	100	30	120	250

NEW

Communication Components

WIDE VARIETY OF INTERFACE, T1, ETHERNET,
INFRARED AND ECHO CANCELLER ICs

Cirrus Logic, a pioneer in the development of world-class telecommunication ICs, continues to provide cost-effective solutions.

T1/E1/J1 LIUs

Short-Haul Single-Port Line Interface Units

- CS61535A
- CS61574A
- CS61575
- CS61577

Short-Haul Multi-Port Line Interface Units

- CS61584A
- CS61880
- CS61884

INFRARED & ECHO CANCELLER

- CS6422
- CS8130

ETHERNET

- CS8900A
- CS8952

Short-Haul Single-Port Line Interface Units

SPECIFICATIONS

Part	Power Supply (V)	Control Modes	Line Coders	Number of Channels	TBR-12 Compliant	Impedance Matching Line Driver	Package
CS61535A	5	Host, H/W & Extended H/W	AMI, B8ZS & HDB3	1	✓	✓	28 PLCC
CS61574A	5	Host, H/W & Extended H/W	AMI, B8ZS & HDB3	1	✓	✓	28 PLCC
CS61575	5	Host, H/W & Extended H/W	AMI, B8ZS & HDB3	1	✓	✓	28 PLCC
CS61577	5	Host, H/W & Extended H/W	AMI, B8ZS & HDB3	1	✓	—	28 PLCC

Short-Haul Multi-Port Line Interface Units

SPECIFICATIONS

Part	Power Supply (V)	Control Modes	Line Coders	Number of Channels	TBR-12 Compliant	Impedance Matching Line Driver	Arbitrary Waveform Option	Package
CS61584A	3.3 or 5	Host & H/W	AMI, B8ZS & HDB3	2	✓	✓	✓	64 TQFP
CS61880	3.3	Host & H/W	AMI & HDB3	8	✓	✓	✓	144 LQFP 160 BGA
CS61884	3.3	Host & H/W	AMI, HDB3 & B8ZS	8	✓	✓	✓	144 LQFP

Infrared & Echo Cancellor

SPECIFICATIONS

Part	Media Supported	Digital Interface	Number of Channels	Power Supply (V)	Package
CS6422	Analog audio (MIC and telephone)	Acoustic interface and network interface (both ANALOG)	2 – Full Duplex	5	20 SOIC
CS8130	IR	IrDA, HPSIR, ASK (CW) and TV remote compatible	1	2 to 5	20 SSOP (5x7 mm)

Ethernet

SPECIFICATIONS

Part	Media Supported	Digital Interface	Number of Channels	Power Supply	Package
CS8900A	10Base-T	ISA and general purpose parallel	1	5 V, 3.3 V	100 LQFP
CS8952	10Base-T, 100Base-X and NRZ (optical)	MII	1	5 V with support of 3.3 V digital I/O	100 TQFP

ARM 7 Embedded Processors

SPECIFICATIONS

Part	Processor	Processor Speed (MHz)	Cache	MMU	DRAM Controller	On-chip SRAM (KB)	LCD Controller	DAI	Package
EP7309	ARM 720T	74	8 KB unified	✓	—	48	✓	✓	208 LQFP 256 PBGA
EP7311	ARM 720T	90 & 74	8 KB unified	✓	SDRAM	48	✓	—	208 LQFP 256 PBGA
EP7312	ARM 720T	90 & 74	8 KB unified	✓	SDRAM	48	✓	✓	208 LQFP 256 PBGA

ARM 9 Embedded Processors

SPECIFICATIONS

Part	Processor Speed (MHz)	Cache Data/Code (K)	Ethernet MAC	PCMCIA Device	IDE/IF	USB Hosts	Display I/F	Graphics Engine	Math Crunch Engine	Touch/ADC	Package
EP9301	166	16/16	✓	—	—	2	—	—	—	5 ADC	208 TQFP
EP9302	200	16/16	✓	—	—	2	—	—	✓	5 ADC	208 LQFP
EP9307	200	16/16	✓	—	—	3	✓	✓	✓	8-wire	272 TFBGA
EP9312	200	16/16	✓	—	2	3	✓	—	✓	8-wire	352 PBGA
EP9315	200	16/16	✓	✓	2	3	✓	✓	✓	8-wire	352 PBGA

Networked Attached Storage (NAS) Reference Design

Reference Design	Target Device	Development Platform	Operating System	Key Software Features
NAS ARM 9	EP9312 and EP9315	EDB9315A	Linux®	Auto-detect for easy customer set-up, network file server, print server, group and user level security and customizable user interface

Internet Protocol Radio Demonstration Platform

Reference Design	Target Device	Development Platform	Operating System	Key Software Features
Internet Protocol Radio (IPR)	EP9307	ERD9307IPR	Linux®	The IPR demo platform provides a low cost solution for demonstrating and exploring the capability of using Cirrus Logic EP9307 for Internet radio applications

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