

POWER ANALOG SOLUTIONS

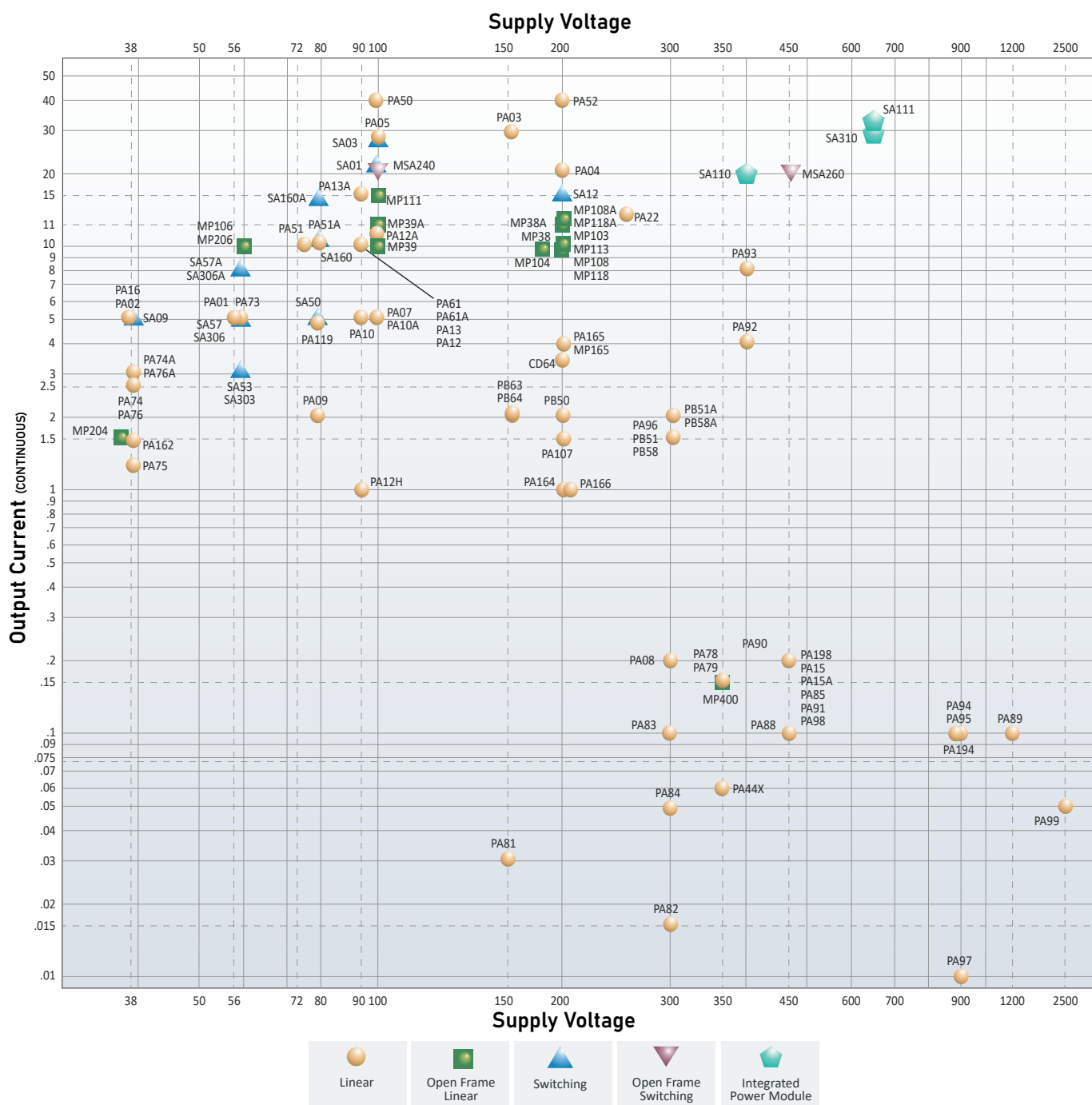
Product Selection Guide



APEX[®]
MICROTECHNOLOGY
PRECISION • POWER • ANALOG

Precision Power Analog

It's an exciting future for precision power analog! Apex Microtechnology is an industry leader for high-performance linear amplifiers, pulse width modulation (PWM) amplifiers, integrated power modules, precision ICs, and precision voltage references. Product form factors include monolithic ICs, board-level "open frame" modules, and traditional hybrid designs that can deliver up to 40 A of continuous output current and voltage supply operation ranging from 5 V to 2500 V. Target applications focus on the high power precision control of current, voltage and speed for the industrial, test and measurement, aerospace & defense, and medical markets.



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HIGH CURRENT OPERATIONAL AMPLIFIERS

Model	Output Current continuous (peak) (A)	Supply Voltage max (V)	Slew Rate typical (V/μs)	Quiescent Current max (mA)	Power Dissipation max (W) / total	Package
PA50	40 (100)	100	50	36	400	12-pin MO-127 (CR)
PA52	40 (80)	200	50	36	400	12-pin MO-127 (CR)
PA03	30	150	8	300	500	12-pin MO-127 (CU)
PA05	30	100	100	120	250	12-pin MO-127 (CR)
PA04	20	200	50	90	200	12-pin MO-127 (CR)
MP111	15 (50)	100	130	157	170	34-pin Open Frame (FD)
MP206	15 (21) (x2 channels)	60	97	50	70 per channel	30-pin Open Frame (KP)
PA13A	15	100	4	50	135	12-pin PowerSIP (DP)
PA22	12 (13.6)	220	35	45	250	15-pin SIP (LL)
MP108A	11 (12)	200	170	65	100	34-pin Open Frame (FD)
MP38A	11 (25)	200	10	26	125	30-pin Open Frame (CL)
MP39A	11 (25)	100	10	26	125	30-pin Open Frame (CL)
MP103	10 (15) (x2 channels)	200	167	26	35 per channel	42-pin Open Frame (FC)
MP104	10 (12) (x2 channels)	160	50	26	100 per channel	42-pin Open Frame (KF)
MP106	10 (30)	60	50	36	130	42-pin Open Frame (FC)
MP108	10 (12)	200	170	65	100	34-pin Open Frame (FD)
MP118	10 (12)	200	65	30	100	34-pin Open Frame (FD)
MP38	10 (25)	200	10	26	125	30-pin Open Frame (CL)
MP39	10 (25)	100	10	26	125	30-pin Open Frame (CL)
PA12 (M)	10 (15)	90	4	50	125	8-pin TO-3 (CE)
PA12A	10 (15)	100	4	50	125	8-pin TO-3 (CE)
PA13	10 (15)	90	4	50	135	12-pin PowerSIP (DP)
PA51 (M)	10	72	2.6	10	97	8-pin TO-3 (CE)
PA51A	10	80	2.6	10	97	8-pin TO-3 (CE)
PA61 (M)	10	90	2.8	10	97	8-pin TO-3 (CE)
PA93	8 (14)	400	50	14	125	12-pin PowerSIP (DP)
PA01	5	56	2.6	50	67	8-pin TO-3 (CE)
PA02 (M)	5	38	20	40	48	8-pin TO-3 (CE)
PA07 (M)	5	100	5	30	67	8-pin TO-3 (CE)
PA10 (M)	5	90	3	30	67	8-pin TO-3 (CE)
PA119	5	80	900	120	75	8-pin TO-3 (CE)
PA16	5	38	20	40	62.5	12-pin PowerSIP (DP)
PA73 (M)	5	60	2.6	5	67	8-pin TO-3 (CE)
PA09 (M)	4.5 (5)	80	220	85	78	8-pin TO-3 (CE)
MP165	4 (10)	205	31	10	100	23-pin Open Frame (KL)
PA165	4 (10)	205	35	10	32	52-pin QFP Power Quad (PQ)
PA92	4 (7)	400	50	14	80	12-pin PowerSIP (DP)
PA74A	3 (x2 channels)	40	1.4	40	36 per channel/60	8-pin TO-3 (CE)
PA76A	3 (x2 channels)	40	1.4	40	36 per channel/60	8-pin TO-3 (CE)
PA74 (M)	2.5 (x2 channels)	40	1.4	40	36 per channel/60	8-pin TO-3 (CE)
PA76	2.5 (x2 channels)	40	1.4	40	36 per channel/60	8-pin TO-3 (CE)
PB50	2	200	100	25	35	8-pin TO-3 (CE)
PB51A	2	300	100	18	83	12-pin PowerSIP (DP)
PB58A	2	300	100	18	83	8-pin TO-3 (CE)
PB63	2 (x2 channels)	200	1000	46	45 per channel	12-pin PowerSIP (DP)
PB64	2 (x2 channels)	200	800	20	45 per channel	12-pin PowerSIP (DP)
MP204	1.5 (7.5) (x4 channels)	34	15	26	20 per channel	42-pin Open Frame (KK)
PA107	1.5 (5)	200	3000	35	62.5	12-pin PowerSIP (DP)
PA96	1.5	300	250	35	70	8-pin TO-3 (CE)
PB51	1.5	300	100	18	83	12-pin PowerSIP (DP)

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(M) = Available in military grade, please refer to apexanalog.com for more information.

HIGH CURRENT OPERATIONAL AMPLIFIERS

Model	Output Current continuous (peak) (A)	Supply Voltage max (V)	Slew Rate typical (V/ μ s)	Quiescent Current max (mA)	Power Dissipation max (W) / total	Package
PB58	1.5	300	100	18	83	8-pin TO-3 (CE)
PA75	1.25 (1.5) (x2 channels)	40	1.4	10	19.5 per channel/28.6	7-pin TO-220 (CD) 7-pin D2PAK (CC)
PA162	1 (1.5) (x4 channels)	40	1.4	20	15 per channel/45	20-pin PSOP (DK)
PA164	1 (4)	205	35	10	28	52-pin QFP Power Quad (PQ)
PA166	1 (4) (x2 channels)	205	35	10.4	2 x 26	52-pin QFP Power Quad (PQ)
CD64	3.5 (11) (x2 channels)	200	400	10	41	42-pin Open Frame (GT)

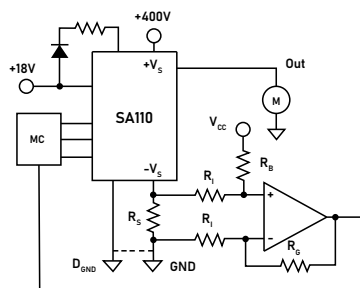
HIGH CURRENT PWM AMPLIFIERS

Model	Output Current (A) continuous (peak)	Output Architecture	Supply Voltage max (V)	Switching Frequency max (kHz)	Power Delivery max (W)	Power Dissipation max (W)	Package
SA111A SiC	32 (80)	Single Phase	650	1000	20800	56	52-pin QFP Power Quad (PQ)
SA310 SiC	30 (80)	3-Phase	650	400	18000	111	16-pin PowerDIP (KR)
SA03	30 (40)	H-Bridge	100	23	3000	300	12-pin MO-127 (CR)
SA110A SiC	28 (40)	Single Phase	400	400	11200	89	12-pin PowerSIP (DP)
SA111 SiC	24 (50)	Single Phase	650	1000	15600	56	52-pin QFP Power Quad (PQ)
MSA260	20 (30)	H-Bridge	450	50	9000	250	58-pin Open Frame (KC)
SA110 SiC	20 (40)	Single Phase	400	400	8000	89	12-pin PowerSIP (DP)
SA01	20 (30)	H-Bridge	100	48.7	2000	185	10-pin PowerDIP (DE)
MSA240	20 (30)	H-Bridge	100	50	2000	250	58-pin Open Frame (KC)
SA12	15 (20)	H-Bridge	200	200	3000	250	12-pin MO-127 (CR)
SA160A	14 (20)	H-Bridge	80	45	1120	156	12-pin PowerSIP (DP)
SA160	10 (15)	H-Bridge	80	45	800	156	12-pin PowerSIP (DP)
SA306	8 (17)	3-Phase	60	300	480	100	44-pin HSOP (HR)
SA57	8 (17)	H-Bridge	60	300	480	100	44-pin HSOP (HU)
SA50	5 (7)	H-Bridge	80	50	400	72	8-pin TO-3 (CE)
SA09	5 (7.5)	H-Bridge	60	500	200	80	18-pin DIP (EL)
SA303	3 (10)	3-Phase	60	300	180	100	44-pin HSOP (HU)
SA53	3 (10)	H-Bridge	60	300	180	100	44-pin HSOP (HU)

Silicon Carbide Half H-Bridge Integrated Power Module

SA110

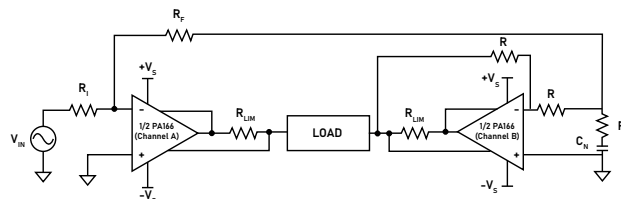
28 A Continuous, 400 V Supply Voltage
Integrated with Digitally Controlled Gate Drive
12-Pin PowerSIP Package



High Density, Multi-Purpose Dual Channel Power Amplifier IC

PA166

2 individual op-amp channels
205 V, 1 A Continuous Current or 4 A Peak
52-pin QFP Style Package



HIGH SPEED OPERATIONAL AMPLIFIERS

Model	Slew Rate typical (V/ μ s)	Supply Voltage max (V)	Output Current continuous (peak) (A)	Quiescent Current max (mA)	Power Dissipation max (W) / total	Package
PA107	3000	200	1.5 (5)	35	62.5	12-pin PowerSIP (DP)
PA194	2100	900	0.1 (0.2)	30	30	8-pin PowerSIP (GN)
PA198	2000	450	0.2	22.5	30	12-pin PowerSIP (DP)
PB63	1000	150	2 (x2 channels)	46	45 per channel	12-pin PowerSIP (DP)
PA85 (M)	1000	450	0.2	25	30	8-pin TO-3 (CE)
PA98	1000	450	0.2	25	30	12-pin PowerSIP (DP)
PA119	900	80	5	120	75	8-pin TO-3 (CE)
PB64	800	150	2 (x2 channels)	20	45 per channel	12-pin PowerSIP (DP)
PA94	700	900	0.1 (0.2)	24	30	8-pin PowerSIP (DQ)
MP400	350	350	0.15 (0.2)	2.5	14.2	42-pin Open Frame (FC)
PA78	350	350	0.15 (0.2)	2.5	14	20-pin PSOP (DK)
PA79	350	350	0.15 (0.2) (x2 channels)	2.5	14 per channel/26	20-pin PSOP (DK)
PA90	300	400	0.2 (0.35)	14	30	12-pin PowerSIP (DP)
PA91	300	450	0.2 (0.35)	14	30	12-pin PowerSIP (DP)
PA96	250	300	1.5	35	70	8-pin TO-3 (CE)
PA09 (M)	220	80	4.5 (5)	85	78	8-pin TO-3 (CE)
PA84 (M)	200	300	0.04 (0.05)	7.5	17.5	8-pin TO-3 (CE)
MP108A	170	200	11 (12)	65	100	34-pin Open Frame (FD)
MP108	170	200	10 (12)	65	100	34-pin Open Frame (FD)
MP103	167	200	10 (15) (x2 channels)	26	35 per channel	42-pin Open Frame (FC)
MP111	130	100	15 (50)	157	170	34-pin Open Frame (FD)
CD64	400	200	3.5 (11) (x2 channels)	10	41	42-pin Open Frame (GT)

HIGH VOLTAGE OPERATIONAL AMPLIFIERS

Model	Supply Voltage max (V)	Output Current continuous (peak) (A)	Slew Rate typical (V/ μ s)	Quiescent Current max (mA)	Power Dissipation max (W) / total	Package
PA99	2500	0.05 (0.07)	30	4	37	12-pin PowerDIP (CW)
PA89	1200	0.075 (0.1)	16	6	40	12-pin M0-127 (DC)
PA194	900	0.1 (0.2)	2100	30	30	8-pin PowerSIP (GN)
PA94	900	0.1 (0.2)	700	24	30	8-pin PowerSIP (DQ)
PA95	900	0.1 (0.2)	30	2.2	30	8-pin PowerSIP (DQ)
PA97	900	0.01 (0.015)	8	1	5	7-pin SIP (DR)
PA198	450	0.2	2000	22.5	30	12-pin PowerSIP (DP)
PA15 (PA15A)	450	0.2	20 (30)	3	30	10-pin PowerSIP (FL/FU)
PA85 (M)	450	0.2	1000	25	30	8-pin TO-3 (CE)
PA98	450	0.2	1000	25	30	12-pin PowerSIP (DP)
PA91	450	0.2 (0.35)	300	14	30	12-pin PowerSIP (DP)
PA88	450	0.1	30	2	15	8-pin TO-3 (CE)
PA90	400	0.2 (0.35)	300	14	30	12-pin PowerSIP (DP)
PA93	400	8 (14)	50	14	125	12-pin PowerSIP (DP)
PA92	400	4 (7)	50	14	80	12-pin PowerSIP (DP)
MP400	350	0.15 (0.2)	350	2.5	14.2	42-pin Open Frame (FC)
PA78	350	0.15 (0.2)	350	2.5	14	20-pin PSOP (DK)
PA79	350	0.15 (0.2) (x2 channels)	350	2.5	14 per channel/26	20-pin PSOP (DK)
PA441 DF-style	350	0.06 (0.12)	32	2.5	12	24-pin PSOP (DF)
PA441 DW-style	350	0.06 (0.12)	32	2.5	9	10-pin PowerSIP (DW)
PA443 DF-style	350	0.06 (0.12) (x2 channels)	32	2.5	12 per channel/24	24-pin PSOP (DF)
PA96	300	1.5	250	35	70	8-pin TO-3 (CE)
PA84 (M)	300	0.04 (0.05)	200	7.5	17.5	8-pin TO-3 (CE)

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HIGH VOLTAGE OPERATIONAL AMPLIFIERS

Model	Supply Voltage max (V)	Output Current continuous (peak) (A)	Slew Rate typical (V/ μ s)	Quiescent Current max (mA)	Power Dissipation max (W)	Package
PB51A	300	2	100	18	83	12-pin PowerSIP (DP)
PB58A	300	2	100	18	83	8-pin TO-3 (CE)
PB51	300	1.5	100	18	83	12-pin PowerSIP (DP)
PB58	300	1.5	100	18	83	8-pin TO-3 (CE)
PA08 (M)	300	0.15 (0.2)	30	8.5	17.5	8-pin TO-3 (CE)
PA83 (M)	300	0.075 (0.1)	30	8.5	17.5	8-pin TO-3 (CE)
PA82	300	0.015 (0.025)	20	8.5	11.5	8-pin TO-3 (CE)
PA166	205	1 (4) (x2 channels)	35	10.4	2 x 26	52-pin QFP Power Quad (PQ)
PA165	205	4 (10)	35	6	32	52-pin QFP Power Quad (PQ)
PA164	205	1 (4)	35	6	28	52-pin QFP Power Quad (PQ)
MP165	205	4 (10)	31	10	100	23-pin Open Frame (KL)
PA107	200	1.5 (5)	3000	35	62.5	12-pin PowerSIP (DP)
MP108A	200	11 (12)	170	65	100	34-pin Open Frame (FD)
MP108	200	10 (12)	170	65	100	34-pin Open Frame (FD)
MP103	200	10 (15) (x2 channels)	167	26	35 per channel	42-pin Open Frame (FC)
PB50	200	2	100	25	35	8-pin TO-3 (CE)
MP118	200	10 (12)	65	30	100	34-pin Open Frame (FD)
PA52	200	40 (80)	50	36	400	12-pin MO-127 (CR)
PA04	200	20	50	90	200	12-pin MO-127 (CR)
MP38A	200	11 (25)	10	26	125	30-pin Open Frame (CL)
MP38	200	10 (25)	10	26	125	30-pin Open Frame (CL)
PB63	200	2 (x2 channels)	1000	46	45 per channel	12-pin PowerSIP (DP)
PB64	200	2 (x2 channels)	800	20	45 per channel	12-pin PowerSIP (DP)
MP104	160	10 (12) (x2 channels)	50	26	100 per channel	42-pin Open Frame (KF)
PA81	150	0.03 (0.05)	20	8.5	11.5	8-pin TO-3 (CE)
PA03	150	30	8	300	500	12-pin MO-127 (CU)
PA22	250	12 (13.6)	35	55	250	15-pin PowerSIP (LL)
CD64	200	3.5 (11) (x2 channels)	400	10	41	42-pin Open Frame (GT)

(M) = Available in military grade, please refer to apexanalog.com for more information.

High Voltage, High Speed Multi-Purpose Amplifier

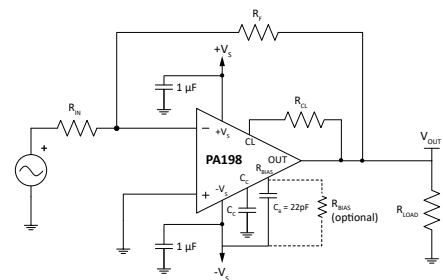
PA198

Linear Amplifier

450 V, 22.5mA Low Quiescent Current

2000 V/ μ s High Slew Rate

12-pin SIP Style Package



High Current Pulse Width Modulation Amplifier

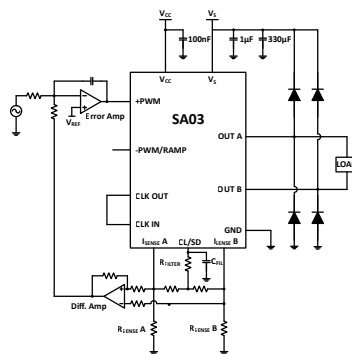
SA03

PWM Amplifier

30 A Continuous Current

16 V - 100 V Supply Range

12-Pin Power DIP Package



HIGH VOLTAGE PWM AMPLIFIERS

Model	Supply Voltage max (V)	Output Architecture	Output Current continuous (peak) (A)	Switching Frequency max (kHz)	Power Delivery max (W)	Power Dissipation max (W)	Package
SA111A 	650	Single Phase	32 (80)	1000	20800	56	52-pin QFP Power Quad (PQ)
SA111 	650	Single Phase	24 (50)	1000	15600	56	52-pin QFP Power Quad (PQ)
SA310 	600	3-Phase	30 (80)	400	18000	111	16-pin PowerDIP (KR)
MSA260	450	H-Bridge	20 (30)	50	9000	250	58-pin Open Frame (KC)
SA110A 	400	Single Phase	28 (40)	400	11200	89	12-pin PowerSIP (DP)
SA110 	400	Single Phase	20 (40)	400	8000	89	12-pin PowerSIP (DP)
SA12	200	H-Bridge	15 (20)	200	3000	250	12-pin M0-127 (CR)
SA03	100	H-Bridge	30 (40)	23	3000	300	12-pin M0-127 (CR)
SA01	100	H-Bridge	20 (30)	48.7	2000	185	10-pin PowerDIP (DE)
MSA240	100	H-Bridge	20 (30)	50	2000	250	58-pin Open Frame (KC)
SA160A	80	2	14 (20)	250	1120	156	12-pin PowerSIP (DP)
SA160	80	2	10 (15)	45	800	156	12-pin PowerSIP (DP)
SA50	80	2	5 (7)	50	400	72	8-pin TO-3 (CE)

PRECISION VOLTAGE REFERENCE

Model	Output (V)	Initial Error (±mV)	Temperature Coefficient (ppm/°C)	Noise (μVp-p)	Package	Feature
VRE102	±10	1.0	1.09	6	DIP14 (HC)	Dual, High Temp Range
VRE104	4.5	0.8	1.48	3	DIP14 (HC)	Dual, High Temp Range
VRE107M	±5	0.9	1.33	3	DIP14 (HC)	High Rel Military, Dual, High Temp Range
VRE204M	4.5	0.89	1.48	3	LCC20 (HD)	Small Pkg, High Rel Military
VRE205	5	0.8	1.33	3	LCC20 (HD)	Small Pkg, High Rel Military
VRE210	10	0.5	1.11	6	LCC20 (HD)	Small Pkg, High Temp Range
VRE302	2.5	0.6	2.2	1.5	DIP8 (KD), SMT8 (GD)	Low Cost
VRE304	4.5	0.9	2.0	3	SMT8 (GD)	Low Cost
VRE305	5	0.5	0.6	3	DIP8 (KD), SMT8 (GD)	Low Cost
VRE306	6	0.6	0.6	4	SMT8 (GD)	Low Cost
VRE310	10	1.0	0.6	6	DIP8 (KD), SMT8 (GD)	Low Cost
VRE410	±10	1.6	1.0	6	SMT14 (GE)	Dual, Low Cost
VRE3025	2.5	0.25	0.6	1.5	DIP8 (KD), SMT8 (GF)	+10V Supply
VRE3050	5	0.5	0.6	3	SMT8 (GF)	+10V Supply

SINE WAVE REFERENCES

Model	Sine Wave Output (Vrms)	Initial Error (±mV)	Temperature Coefficient (ppm/°C)	Distortion (%THD)	Package
SWR200	7.071	0.5	20	0.1	DIP14 (HC)

Low Noise, Precision Voltage Reference

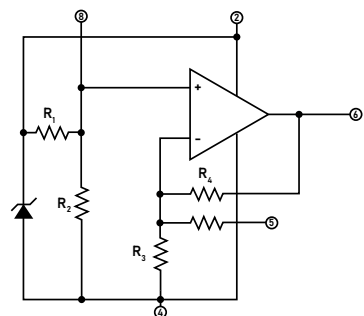
VRE3050

Voltage Reference

+5 V output, 0.6 ppm/°C Temp Co

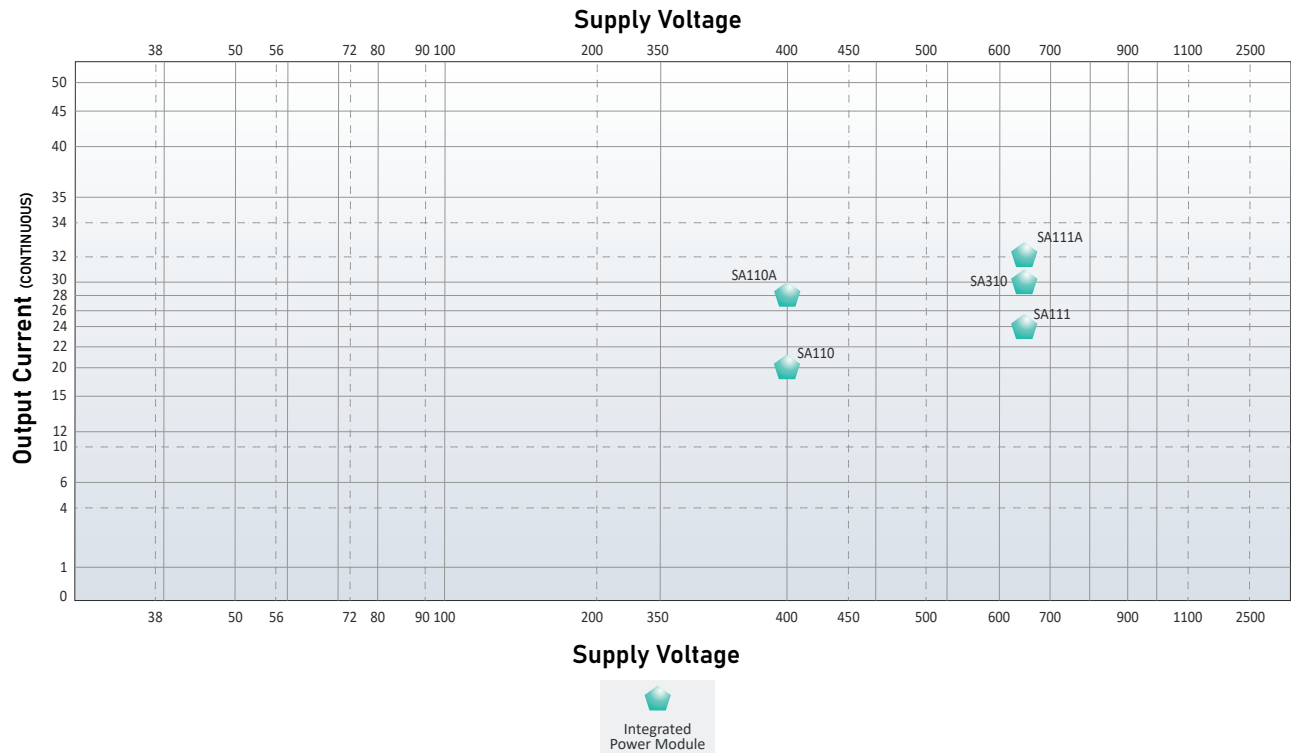
Low Noise: 3 μVp-P (0.1 Hz - 10 Hz)

8-pin surface mount package



SIC INTEGRATED POWER MODULES

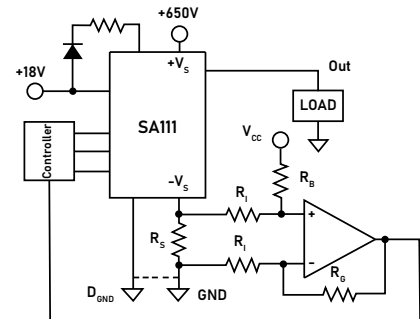
Model	Supply Voltage max (V)	Output Architecture	Output Current continuous (peak) (A)	Switching Frequency max (kHz)	Power Delivery max (W)	Power Dissipation max (W)	Package
SA111A	650	Single Phase	32 (80)	1000	20800	56	52-pin QFP Power Quad (PQ)
SA111	650	Single Phase	24 (50)	1000	15600	56	52-pin QFP Power Quad (PQ)
SA310	600	3-Phase	30 (80)	400	18000	111	16-pin PowerDIP (KR)
SA110A	400	Single Phase	28 (40)	400	11200	89	12-pin PowerSIP (DP)
SA110	400	Single Phase	20 (40)	400	8000	89	12-pin PowerSIP (DP)



Silicon Carbide Half-Bridge Power Module

SA111

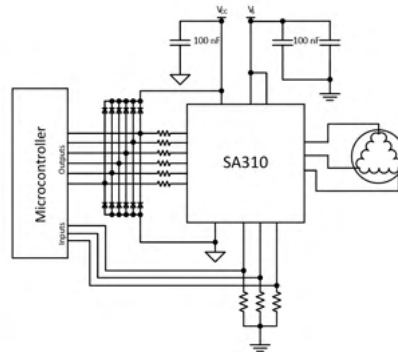
PWM Amplifier
50 A Peak, 650 V Supply Voltage
52-Pin QFP style package
Integrated Gate Driver



Silicon Carbide 3-Phase Integrated Power Module

SA310

PWM Amplifier
80 A Peak, 650 V Supply Voltage
16-pin PowerDIP Package
Integrated Gate Driver



PRECISION ICS - DRIVERS AND SENSORS

Model	Description	Output Supply Voltage Range (V)	Package
AIC1508	8-Bit HV Parallel Driver IC	20 to 300	20-pin SOP (ZF)
AIC1532	32-Channel High Voltage Driver	30 to 230	64-pin LQFP (ZD)
AIC1601	Inductive Proximity Sensor IC	5.5 to 38	24-pin QFN (ZC)
AIC1605	High Voltage Interface IC	5 to 36	24-pin QFN (ZC)

PRECISION ICS - LINEAR AMPLIFIERS

Model	Supply Voltage max (V)	Output Current continuous (peak) (A)	Slew Rate typical (V/ μ s)	Standby Current max (mA)	Power Dissipation max (W)	Package
PA79	350	0.15 (.02) x 2	350	2.5	14 per channel/26 total	20-pin PSOP (DK)
PA78	350	0.15 (0.2)	350	2.5	14	20-pin PSOP (DK)
PA443	350	0.006 (0.12) x2	32	2.5	12 per channel	24-pin MO-166 (DF)
PA441	350	0.006 (0.12)	32	2.5	12	24-pin MO-166 (DF)
PA166	205	1 (4)	35	20	26 per channel	52-pin QFP Power Quad (PQ)
PA165	205	4 (10)	36	10	32	52-pin QFP Power Quad (PQ)
PA164	205	1 (4)	36	10	28	52-pin QFP Power Quad (PQ)
PA162	40	1 (1.5) (x4 channels)	1.4	20	15 per channel/45 total	20-pin PSOP (DK)
PA75	40	1.25 (1.5) (x2 channels)	1.4	10	19.5 per channel/28.6 total	7-pin TO-220 (CD)

8-Bit HV Parallel Driver IC

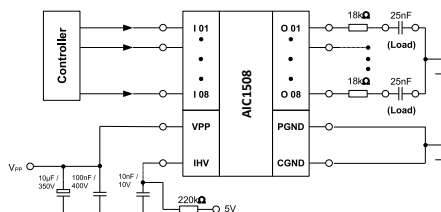
AIC1508

Precision IC

20 - 300 V Supply Voltage (320 V Max)

± 40 mA Output Current per Channel

Direct Transistor Gate Control Input



32-Channel High Voltage Driver

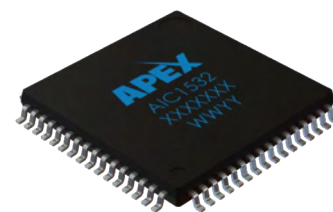
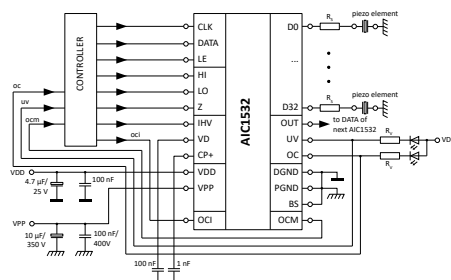
AIC1532

Precision IC

32 High Voltage Push-Pull Output Channels

High Voltage up to 230 V

Over-Current and Short-Circuit Protection



REQUEST A LUNCH & LEARN



Invite an Apex Application Engineer to your place for a lunchtime analog technical seminar on a design topic of your choosing! Past topics include:

- Op Amp Basics
- Safe Operating Area
- Single Supply Operation
- Stability and Compensation
- PWM Basics
- Basic PWM Transfer Function
- Biasing PWM Systems
- Low Pass Filter Response
- Piezo Drive Applications
- Deflection
- High Power Techniques
- Motion Control



Visit apexanalog.com or scan the QR code to browse design topics and schedule a lunch and learn, and remember, lunch is on us!

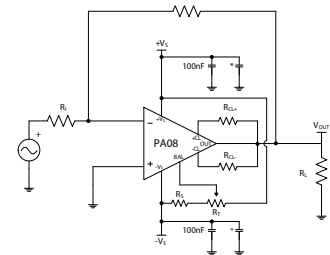
RADIATION TOLERANT PRODUCTS

Model	Supply Voltage max (V)	Output Current continuous (peak) (A)	Slew Rate typical (V/ μ s)	Quiescent Current max (mA)	Power Dissipation max (W)	Package
PA08R	300	0.15 (0.2)	30	8.5	17.5	8-pin TO-3 (CE)
PA07R	100	5	5	30	67	8-pin TO-3 (CE)
PA12R	100	10 (15)	4	50	125	8-pin TO-3 (CE)
PA74R	40	3 (x2 channels)	1.4	40	36 per channel/60	8-pin TO-3 (CE)
PA02R	38	5	20	40	48	8-pin TO-3 (CE)

High Voltage Power Amplifier with Programmable Current Limit

PA08R

$\pm 15V$ to $\pm 150V$ Voltage Supply Operation
150 mA High Output Current
Low Bias Current - FET Input



APEX FLIGHT HERITAGE



MARS ROVER



JAMES WEBB
TELESCOPE



INTERNATIONAL
SPACE STATION



OSIRIS-REx

With a stellar flight heritage that spans across renowned space missions, our rad-tolerant devices have proven their reliability and resilience in the most demanding space environments. Our devices have been an integral part of various space missions, including the Mars Rover, James Webb Telescope, the International Space Station, and OSIRIS-REx. Beyond our past achievements, we remain committed to innovation, continuing to expand our rad-tolerant portfolio to include additional solutions for the evolving demands of space exploration.

RAD-TOL TESTING CAPABILITIES

Apex Microtechnology's Radiation Tolerant "R" grade devices are specifically built and tested to maintain operability after exposure to certain levels of radiation. Apex Radiation Tolerant devices include HDR, ELDRS, and SEE radiation test reports, Class H military grade screening, and lot traceability for TID testing.



For more information about Apex Radiation Tolerant "R" grade devices or for additional radiation testing options & capabilities offered by Apex please submit our Radiation-Tolerant Inquiry Form by scanning the QR code.

DLA AND ISO CERTIFICATIONS

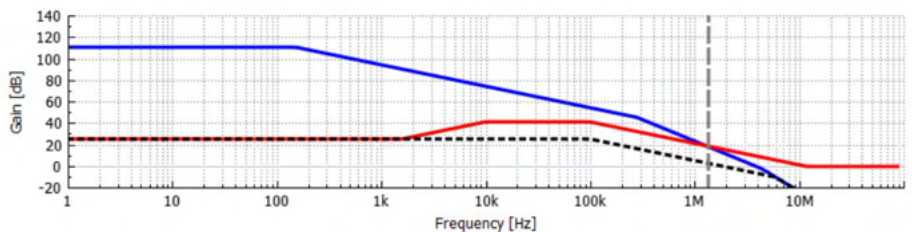
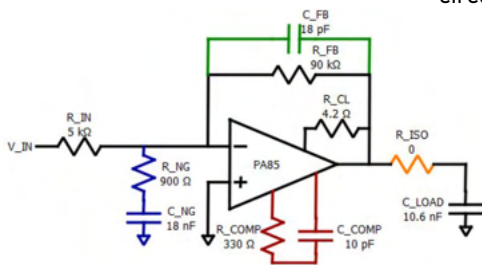
Apex Microtechnology products deliver high quality and reliability by using the same DLA MIL-PRF-38534 certification, ISO 9001:2015 registration and qualified manufacturing systems and processes across all product grades. Apex operates a DLA certified and qualified QML-38534 manufacturing facility with our certification maintained since November 8, 1989, and a QML listing as of May 31, 1990. All products are screened to MIL-PRF-38534 and Class H.

The only point at which variables occur is during electrical testing. The M/883 equivalent ("M" grade) products are tested over a wider temperature range, in addition to certain environmental screenings and internal visual inspection criteria. Commercial and industrial grade products are 100% static and dynamic tested at +25°C. Military level products are 100% tested over their respective full temperature ranges. For complete product and quality information, including complete technical datasheets and supporting design documentation, or to request product samples, visit www.apexanalog.com.

POWER DESIGN SOFTWARE TOOL

POWER DESIGN

Need help with selecting the best product that suits your application needs? How about resolving key design challenges and calculations associated with your power analog circuit? Apex's Power Design software tool helps automate many of the calculations required when working with high power linear and PWM amplifiers. It has multiple modules that provide the ability to plot load-lines and current limits directly onto the Safe Operating Area to ensure circuit stability; calculate internal power dissipation and heatsink requirements; dynamically select a part and assist with other key tasks involved with designing high power analog circuits.



APEX VALUE ADDED



Applications Engineering Staff

Dedicated team of analog experts to assist in design optimization



Design Engineering Team

Powering next-gen innovation in high voltage, high current analog components



Dedicated Account Management and Customer Support Staff

Overall quality and customer satisfaction are our top priorities



Manufacturing Capabilities

Equipped to produce integrated COTS solutions at large volumes



Reduced Lead Times

Best-In-Class lead times to ensure your design stays on schedule



In-House Obsolescence Management

Ensuring long-term product availability and manufacturing support

APEX[®]

MICROTECHNOLOGY

PRECISION • POWER • ANALOG

Apex Headquarters

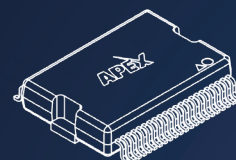
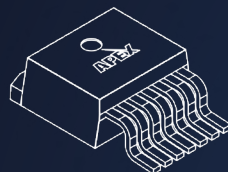
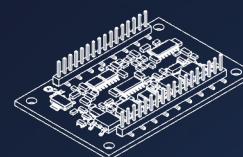
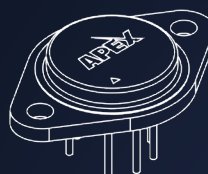
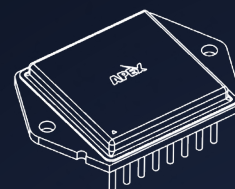
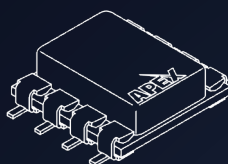
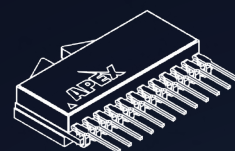
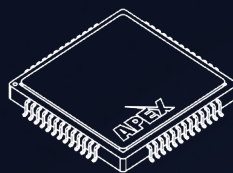
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