

SOLID OAK 10K1

High-Power Single-Channel Class-D Amplifier Module



Solid Oak 10k1 is a high-power Class-D amplifier module designed for professional audio systems requiring efficient power conversion, stable operation, and controlled behavior under varying electrical and load conditions.

The design combines a full-bridge switching topology with a universal power supply and configurable input power management, providing full audio bandwidth suitable for both subwoofer and full-range applications. Integrated energy storage and coordinated current, voltage, and thermal control support demanding dynamic operation. The module includes comprehensive protection functions and is supplied with an analog input card.

Power Supply & Mains

Input Voltage	85–264 VAC, 45–65 Hz (100–240 VAC 50-60 Hz nominal)
Max Input Power (Selectable)	1800 W / 2200 W / 2700 W / 3200 W
Max Input Current	32 A @ 100 VAC
Power Factor	>0.95 @ 300 W, >0.99 @ 1000 W
Idle Power Consumption	<43 W
Standby Power (Fast Start)	<18 W (amplifier in standby)
Standby Power (Deep Sleep)	<3 W (amplifier and PSU in standby)
PSU Startup Time (Sleep → Idle)	300 ms
Over-Current Protection	Yes
Over-Temperature Protection	Yes
Over-Voltage Protection	Yes
Isolation Class	Basic insulation, protective earth required

Energy Storage

Primary Energy Storage (Usable)	340 J (380 V → 190 V DC)
Secondary Energy Storage (Usable)	200 J (350 V → 250 V DC)

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Amplifier Topology

Architecture	Single-channel full-bridge
Switching Class	Class-D (Type B)
Switching Frequency	400 kHz (800 kHz output)
Patent Coverage	US12512794B2, EP4250558B1

Protection & Limiting

Current Protection	Shutdown @ 100 A for 250 ms
Current Clip Limiter	Active from 85 A
VHF Protection	Amplifier shutdown for 1 s upon detected damaging signal
Thermal Protection	Output transistor temperature monitoring
Voltage Clip Limiter	Limits 3 V below rail voltage
Energy Storage Undervoltage	Limiting below 190 V DC (primary)
Rail voltage	Up to ± 350 V DC

Audio Performance

Gain Settings	28–44 dB, 1 dB steps (16 positions)
Input Impedance	20 k Ω , balanced
DC Blocking	Yes, 1 Hz corner frequency
Frequency Response	20 Hz – 20 kHz, ± 0.4 dB @ 2 / 4 / 8 Ω
THD	<0.01% @ 250 V peak, 1 kHz
SNR	>118 dB (20 Hz–20 kHz, A-weighted)
Idle Ripple (Differential Mode)	<250 mV
Idle Ripple (Common Mode)	<10 V
Amplifier Startup Time	10 μ s from standby, click- and pop-free



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Output Power – Burst (1 kHz)

Conditions: 25 ms @ -12 dB, 375 ms, total 400 ms duration, average -9 dB

8 Ω	7,500 W
4 Ω	15,000 W
2 Ω	9,500 W
1 Ω	4,500 W

Output Power – Continuous

Duration	20 seconds, full power
All Load Impedances	1500 / 1900 / 2500 / 3000 W
Limitation	Limited by the selected input grid power setting

Connectivity & Interfaces

Mains Connector	Neutrik powerCON (or customer specified)
Speaker Output Connector	Phoenix IPC 16/2-GF-10.16
Analog Input	XLR female
Cooling	Temperature-controlled, proportional fan speed



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Mechanical Specifications

Dimensions (H × L × W)	80 × 400 × 150 mm
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Dimensions (inches)	3.15 × 15.8 × 5.9 in
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Weight (kg)	4.8 kg
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Status Indicators

Power	Green
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Standby	Orange
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Limiter	Orange
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Over-Temperature	Red
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Over-Current	Red
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Specifications and product details are subject to change without notice. This document describes the product at the time of publication.

For additional information and application guidance, please contact a company representative.
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