



CLASS D AUDIO AMPLIFIER PLATE AMPLIFIER EVALUATION UNIT

SDV1056-600: 600W RMS, CLASS D, PLATE AMPLIFIER

FEATURES

- **HIGH POWER:** up to 600W RMS¹
- **HIGH EFFICIENCY** typically 90%
- **HIGH SWITCHING FREQUENCY:** 330KHz.
- **LOW DISTORTION:** c. 0.5% THD OPEN LOOP²
- **INTEGRAL REGULATED POWER SUPPLY**
- **FULL SHORT-CIRCUIT PROTECTION**
- **THERMAL PROTECTION**
- **START-UP, SHUTDOWN SYNCHRONISATION**
- **ONBOARD TEMPERATURE MONITOR**
- **DRIVES 16Ω, 8Ω, 4Ω and 2Ω SPEAKERS**
- **COMPACT**
- **LOW COST**
- **LIGHTWEIGHT**
- **ALTERNATIVE CONFIGURATIONS AVAILABLE³**
- **CUSTOM DESIGNS AVAILABLE**

NOTES

- 1) Other power options include 250W. Alternatively, custom power levels can be produced.
- 2) Assumes minimisation of external noise coupling and measured in audio band only.
- 3) Contact EcoTec Systems Ltd Ltd. for more details of these options

APPLICATIONS

- **AUDIO POWER AMPLIFIER**
- **ACTIVE SPEAKER SYSTEMS**
- **ACTIVE SONAR SYSTEMS**
- **NOISE CANCELLATION SYSTEMS**
- **MOTOR / MAGNET DRIVE MODULES**
- **POWER CONVERSION**
- **UPS - SINE WAVE INVERTER**



DESCRIPTION

The SDV1056-600 is a class D plate amplifier, which contains the SDV1061-600 class D motherboard and a linear transformer. The amplifier contains an input pre-amplifier, an output filter; short-circuit protection and turn-on/off synchronisation. The power supply consists of a conventional linear transformer for isolation and transformation and a switching regulator. All necessary supplies are generated on the unit. The unit can be powered from 220Vac or 110Vac supplies (switch selectable).

This plate amplifier is designed to give a simple, user friendly introduction to our class D amplifier range. If lower power levels are required then the SDV1056-250, 250W plate amplifier unit should be considered.

Please contact EcoTec Systems Ltd. for a confidential discussion of your requirements and further application information.

SPECIFICATIONS



Absolute maximum ratings

Operating free air temperature, T_A -10°C to 40°C
Storage temperature range, T_{stg} -40°C to 70°C

Stresses beyond those listed under absolute maximum ratings may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated “recommended operating conditions” is not implied.

Recommended operating conditions

	MIN	TYP	MAX	UNIT
INPUT VOLTAGE (220Vac), V_{IN}	200	220	245	Vac
INPUT VOLTAGE (110Vac), V_{IN}	95	110	125	Vac
MODULATION FACTOR	0	0.95	1	
OPERATING FREE AIR TEMPERATURE, T_A	10		40	°C

Electrical characteristics at a free air temperature of 25°C

PARAMETER	NOTES/TEST CONDITIONS	VALUE			UNIT
		$V_{RS} = 55 V$			
		MIN	TYP	MAX	
R_{IN}	AUDIO INPUT IMPEDANCE (Other input options available)		1		MΩ
I_{RS}	POWER RAIL CURRENT	$R_L = 4\Omega$	16		Arms
P_{RR}	ALLOWABLE POWER RAIL RIPPLE	SEPARATE POWER SUPPLY MODULE AVAILABLE	2		%
r_o	OUTPUT RESISTANCE	$R_L = 4\Omega$		100	mΩ
SNR	SIGNAL TO NOISE RATIO	$R_L = 4\Omega$ (in audio band)	-90		dB
f_{sw}	SWITCHING FREQUENCY		330		KHz
t_{PD}	PROPAGATION DELAY (POWER OUTPUT STAGE)	$R_L = 4\Omega$	100		ns

OUTPUT POWER

When discussing the output power of a class D power amplifier an important distinction must be made between the power levels when the amplifier is run into clip or if the output is to be operated clean (undistorted). The SDV1056-600 will produce up to 600Wrms clean into a 4Ohm load (measured after 5 minutes continuous operation with sine wave input).

Note: The output power from the SDV1056-600 plate amplifier must be measured differentially across both of the amplifier outputs. Failure to measure differentially will produce erroneous power level readings.

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