

SDV1025-600: 600W RMS, CLASS D, AUDIO AMPLIFIER MODULE

FEATURES

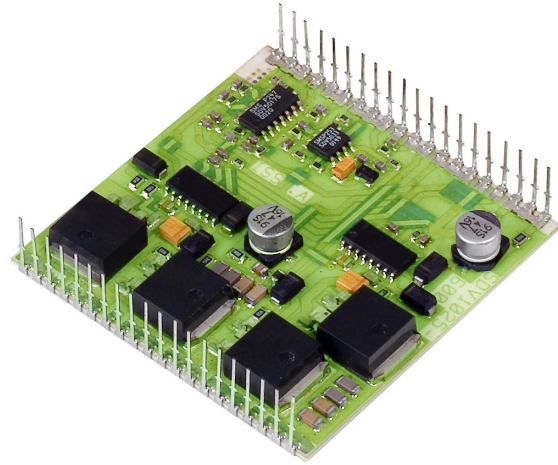
- **HIGH POWER: 600W RMS¹**
- **HIGH EFFICIENCY >90%**
- **HIGH SWITCHING FREQUENCY: 330KHz.**
- **LOW DISTORTION: c. 0.5% THD OPEN LOOP**
- **SIMPLE POWER SUPPLY REQUIREMENT²**
- **THERMALLY EFFICIENT PACKAGE:**
- **LOW NOISE: NOISE FLOOR typ. 90dB DOWN³**
- **ONBOARD TEMPERATURE MONITOR**
- **DRIVES 16Ω, 8Ω AND 4Ω SPEAKERS**
- **OTHER POWER OPTIONS AVAILABLE¹**
- **LOW COST**
- **LIGHTWEIGHT**
- **CUSTOM AMPLIFIER DESIGNS AVAILABLE**

NOTES

- 1) Other power options include 250W and 150W. Alternately, custom power levels can be produced.
- 2) Companion switch-mode PSU unit available
- 3) Assumes minimisation of external noise coupling and measured in audio band only.
- 4) Contact EcoTec Systems Ltd. for more details of these options
- 5) 8Ω and 2Ω speaker variant available

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 SDV1025-600 is a complete audio power amplifier module. The module contains power transistors, drive electronics, and control circuitry. Only a power supply, decoupling capacitors and output filter must be added to produce a stand-alone audio amplifier. Modules can be combined together and operated from a suitable power supply to produce a stereo amplifier. The module is optimised to drive a 4Ω load (16Ω, 8Ω and 2Ω optimised versions are available).

The unit is available in the module format or mounted onto an interface PCB which includes the circuitry to derive the control voltages, the output filter, turn-on/turn-off controls and short-circuit protection.

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

SPECIFICATIONS

Absolute maximum ratings



Rail voltage, V_{RS}	140 V
Maximum output power	900W _{rms}
Control voltage $+V_L$	+5.5 V
Control voltage $-V_L$	-5.5 V
Operating free air temperature, T_A	-10°C to 40°C
Storage temperature range, T_{stg}	-40°C to 70°C
PCB solder pad temperature for 30 secs	260°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. Maximum power requires suitable cooling of the amplifier module.

Recommended operating conditions

	MIN	TYP	MAX	UNIT
RAIL VOLTAGE, V_{RS}	0	75	125	V
OUTPUT POWER		600	750	W
POWER SUPPLY VOLTAGE, $+V_L$	4.75	5	5.25	V
POWER SUPPLY VOLTAGE, $-V_L$	-4.75	-5	-5.25	V
POWER SUPPLY VOLTAGE, V_{drv}	10	12	18	V
AUDIO INPUT, S_2	0		+3	V _{p-p}
MODULATION FACTOR	0	0.95	1	
OPERATING FREE AIR TEMPERATURE, T_A	10		40	°C

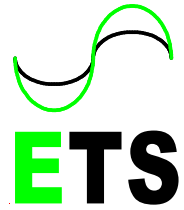
Electrical characteristics at a free air temperature of 25°C

PARAMETER	NOTES/TEST CONDITIONS	VALUE			UNIT
		$V_{RS} = 65\text{ V}$			
		MIN	TYP	MAX	
R_{IN} AUDIO INPUT IMPEDANCE (Other input options available)			10K		K Ω
I_{L+} POWER SUPPLY CURRENT $+V_L$	$R_L = 4\Omega$		10	15	mA
I_{L-} POWER SUPPLY CURRENT $-V_L$	$R_L = 4\Omega$		5	10	mA
I_{drv} POWER SUPPLY CURRENT V_{drv}			80	100	mA
I_{RS} POWER RAIL CURRENT	$R_L = 4\Omega$		14		Arms
P_{RR} ALLOWABLE POWER RAIL RIPPLE	SEPARATE POWER SUPPLY MODULE AVAILABLE		2		%
r_O OUTPUT RESISTANCE	$R_L = 4\Omega$			100	m Ω
SNR SIGNAL TO NOISE RATIO	$R_L = 4\Omega$ (in audio band)		-90		dB
f_{sw} SWITCHING FREQUENCY			330		KHz

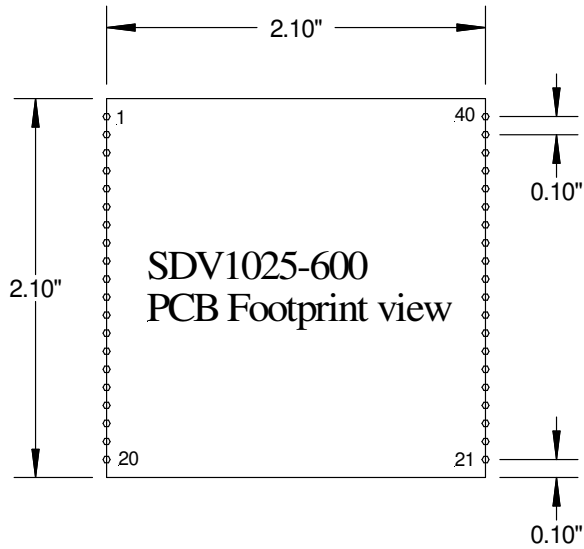
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MECHANICAL DETAILS

(All dimensions in Inches)



PCB Footprint



Pin Assignments

Pin Number	Designator		Pin Number	Designator
1	GND		40	GND
2	GND		39	GND
3	GND		38	GND
4	Audio		37	OUT2
5	GND		36	OUT2
6	GND		35	OUT2
7	VDD+		34	GND
8	VDD+		33	VRS
9	VDD+		32	VRS
10	GND		31	VRS
11	Temp		30	GND
12	Temp		29	GND
13	VDD-		28	GND
14	VDD-		27	OUT1
15	VDD-		26	OUT1
16	GND		25	OUT1
17	SD		24	GND
18	VDRV		23	VRS
19	VDRV		22	VRS
20	VDRV		21	VRS

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