

TDA1512

12 to 20W Audio Amplifier

Product Specification

Linear Products

DESCRIPTION

The TDA1512 is a monolithic integrated hi-fi audio power amplifier designed for asymmetrical power supplies.

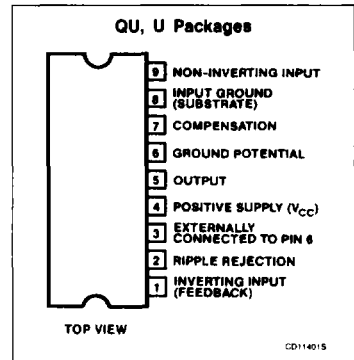
FEATURES

- Thermal protection
- Low intermodulation distortion
- Low transient intermodulation distortion
- Built-in output current limiter
- Low input offset voltage
- Output stage with low cross-over distortion
- Single in-line (SIP) power package

APPLICATIONS

- Television
- Radio receivers
- Hi-fi power amp

PIN CONFIGURATION



ORDERING INFORMATION

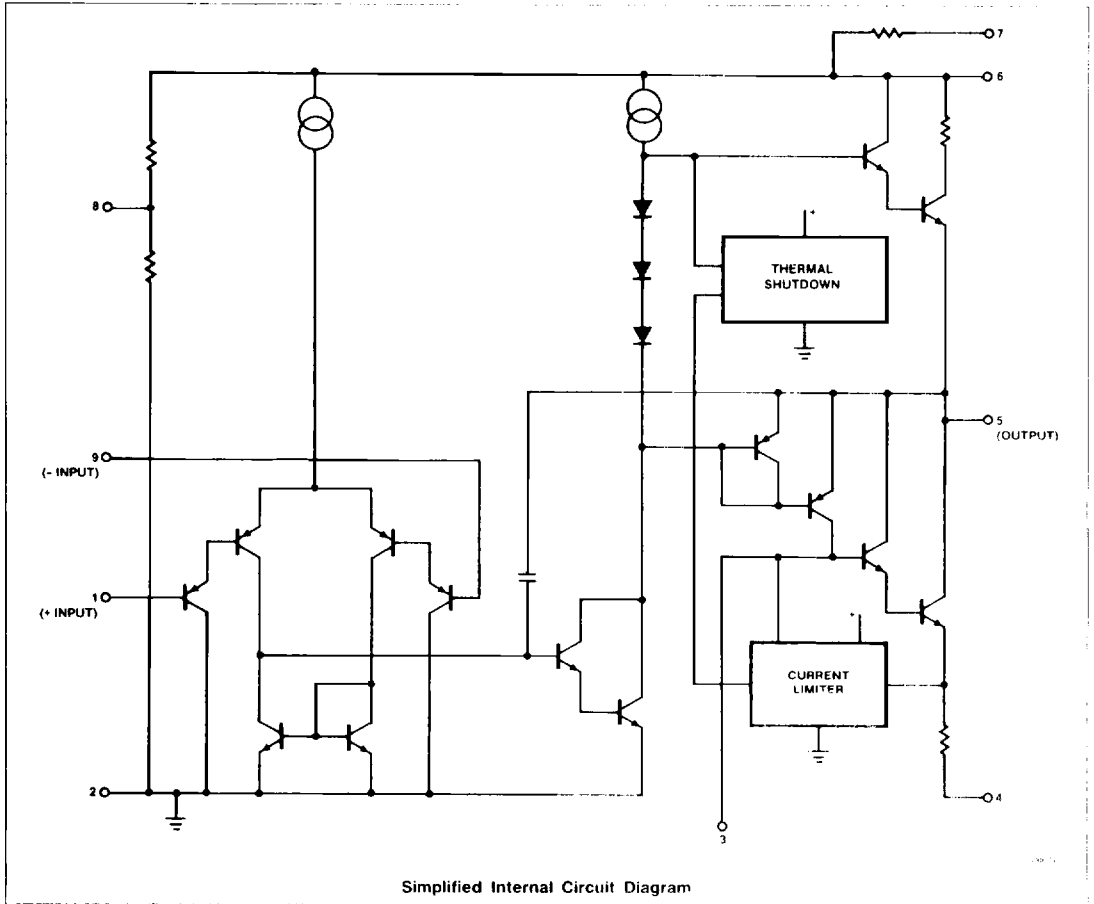
DESCRIPTION	TEMPERATURE RANGE	ORDER CODE
9-Pin Plastic SIP (SOT-131B)	-25°C to +150°C	TDA1512U
9-Pin Plastic SIP-bent-to-DIP Plastic Power (SOT-157B)	-25°C to +150°C	TDA1512QU

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	RATING	UNIT
V_{CC}	Supply voltage	35	V
I_{ORM}	Repetitive peak output current	3.2	A
I_{OSM}	Non-repetitive peak output current	5	A
P_{TOT}	Total power dissipation	See derating curve Figure 1	
T_{STG}	Storage temperature	-55 to +150	°C
T_A	Operating ambient temperature	-25 to +150	°C
t_{SC}	AC short-circuit duration of load during full-load sine-wave drive $R_L = 0$; $V_{CC} = 30V$ with $R_1 = 4\Omega$	100	hours
θ_{JMB}	Thermal resistance from junction to mounting base	typ. 3 ≤ 4	°C/W °C/W

12 to 20W Audio Amplifier

TDA1512



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TDA1512

DC ELECTRICAL CHARACTERISTICS

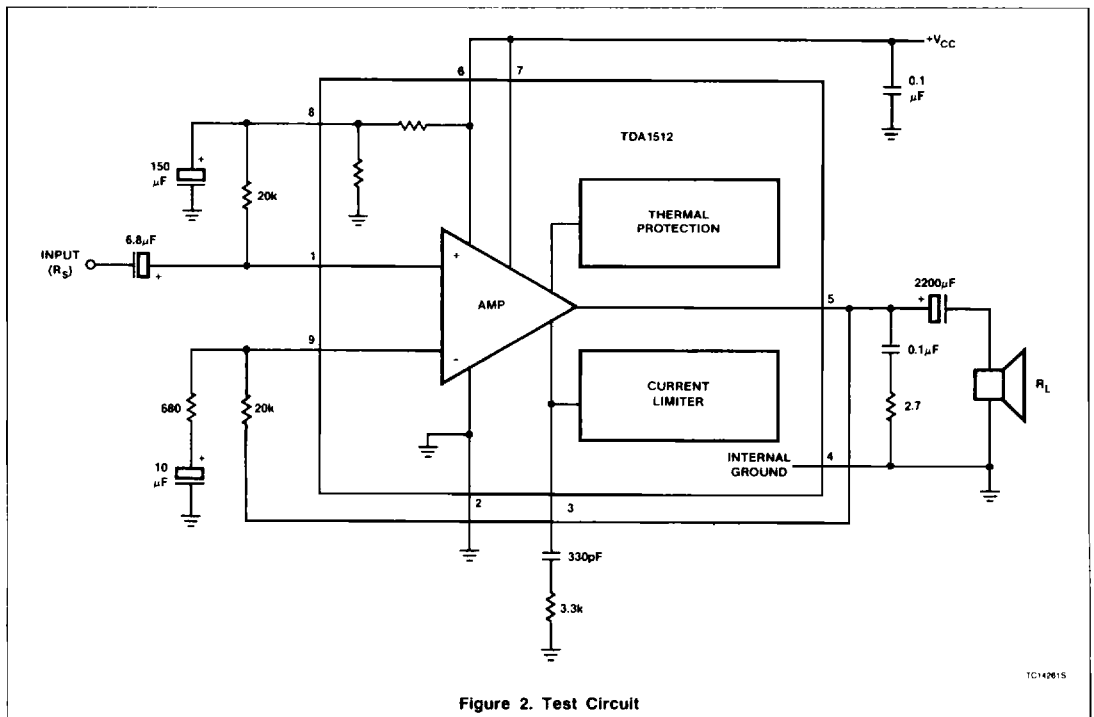
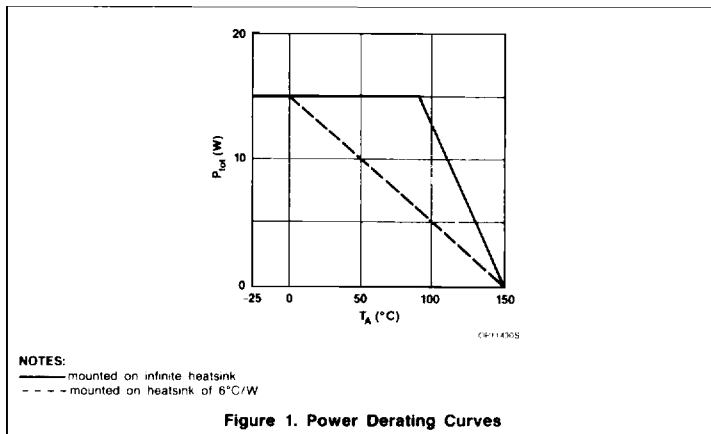
SYMBOL	PARAMETER	LIMITS			UNIT
		Min	Typ	Max	
V _{CC}	Supply voltage range	15		35	V
I _{TOT}	Total quiescent current at V _{CC} = 25V		65		mA

AC ELECTRICAL CHARACTERISTICS V_{CC} = 25V; R_L = 4Ω; f = 1kHz; T_A = 25°C; measured in Test Circuit of Figure 2, unless otherwise specified.

SYMBOL	PARAMETER	LIMITS			UNIT
		Min	Typ	Max	
P _O	Output power sine-wave power at d _{TOT} = 0.7% R _L = 4Ω		13		W
	R _L = 8Ω		7		W
	music power at V _{CC} = 32V R _L = 4Ω; d _{TOT} = 0.7%		21		W
	R _L = 4Ω; d _{TOT} = 10%		25		W
	R _L = 8Ω; d _{TOT} = 0.7%		12		W
	R _L = 8Ω; d _{TOT} = 10%		15		W
B	Power bandwidth; -1.5dB; d _{TOT} = 0.7%	40Hz		16	kHz
A _{VO} A _{VC}	Voltage gain open-loop		74		dB
	closed-loop		30		dB
R _{IN}	Input resistance (Pin 1)	100			kΩ
	Input resistance of Test Circuit (Figure 2)		20		kΩ
V _{IN}	Input sensitivity for P _O = 50mW		16		mV
	for P _O = 10W		210		mV
S/N	Signal-to-noise ratio at P _O = 50mW; R _S = 2kΩ; f = 20Hz to 20kHz; unweighted	68			dB
	weighted; measured according to IEC 173 (A-curve)		76		dB
RR	Ripple rejection at f = 100Hz		50		dB
d _{TOT}	Total harmonic distortion at P _O = 10W		0.1	0.3	%
R _O	Output resistance (Pin 5)		0.1		Ω

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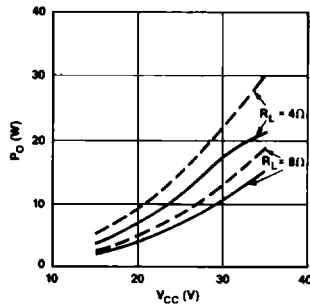
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7

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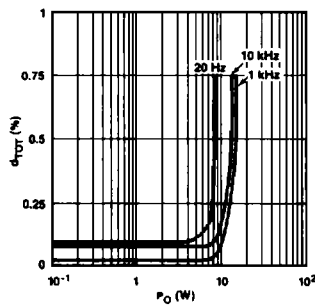
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OP113305

NOTES:
— $d_{TOT} = 0.7\%$.
- - - $d_{TOT} = 10\%$.

Figure 3. Output Power as a Function of the Supply Voltage; $f = 1\text{kHz}$



OP113405

Figure 4. Total Harmonic Distortion as a Function of Output Power