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Absolute Maximum Ratings (Note 1)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Supply Voltage	28V
Peak Current	1.3A
Power Dissipation (See (Notes 4, 5))	1.67W
Input Voltage	$\pm 0.5V$
Storage Temperature	$-65^{\circ}C$ to $+150^{\circ}C$

Operating Temperature	$0^{\circ}C$ to $+70^{\circ}C$
Lead Temperature (Soldering, 10 sec.)	$260^{\circ}C$
Thermal Resistance	
θ_{JC}	$30^{\circ}C/W$
θ_{JA}	$79^{\circ}C/W$

Note 1: Absolute Maximum Ratings indicate limits beyond which damage to the device may occur. Operating Ratings indicate conditions for which the device is functional, but do not guarantee specific performance limits.

Electrical Characteristics (Note 2)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Z_{IN}	Input Resistance			150		$k\Omega$
I_{BIAS}	Bias Current	Inputs Floating		100		nA
A_V	Gain		40	50	60	V/V
P_{OUT}	Output Power	THD = 10%, $R_L = 8\Omega$	5	5.5		W
I_Q	Quiescent Supply Current			8.5	25	mA
$V_{OUT Q}$	Quiescent Output Voltage			11		V
BW	Bandwidth	$P_{OUT} = 2W$, $R_L = 8\Omega$		450		kHz
V^+	Supply Voltage		12		26	V
I_{SC}	Short Circuit Current (Note 6)			1.3		A
$PSRR_{RTO}$	Power Supply Rejection Ratio (Note 3))			31		dB
THD	Total Harmonic Distortion	$P_{OUT} = 4W$, $R_L = 8\Omega$		0.25	1.0	%

Note 2: $V^+ = 22V$ and $T_A = 25^{\circ}C$ operating with a Staver V7 heat sink for 30 seconds.

Note 3: Rejection ratio referred to the output with $C_{BYPASS} = 5 \mu F$, freq = 120 Hz.

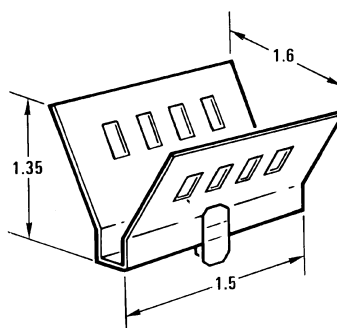
Note 4: The maximum junction temperature of the LM384 is $150^{\circ}C$.

Note 5: The package is to be derated at $15^{\circ}C/W$ junction to heat sink pins.

Note 6: Output is fully protected against a shorted speaker condition at all voltages up to 22V.

Heat Sink Dimensions

Staver "V7" Heat Sink

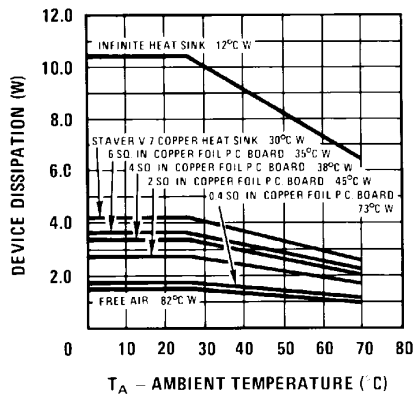


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Staver Company
41 Saxon Ave.
P.O. Drawer H
Bay Shore, N.Y.
Tel: (516) 666-8000

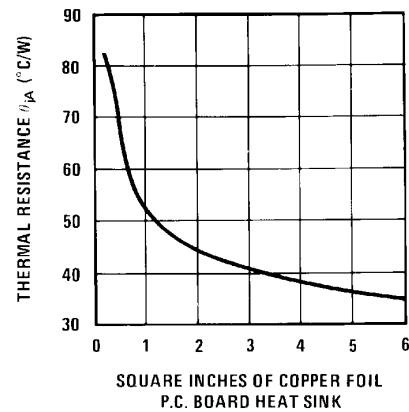
Typical Performance Characteristics

Device Dissipation vs
Ambient Temperature



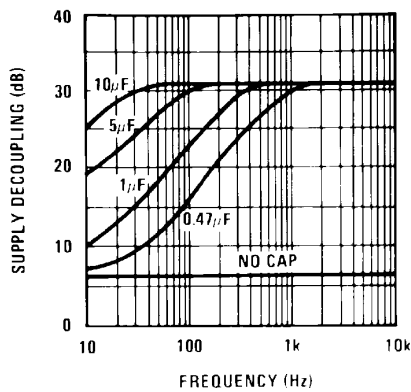
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Thermal Resistance vs
Square Inches



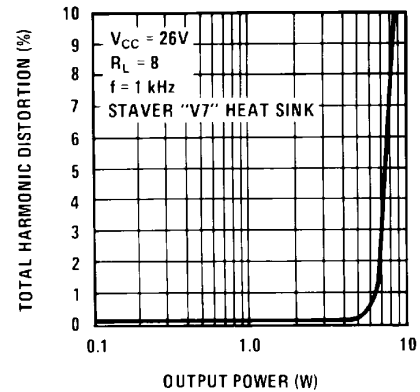
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Supply Decoupling vs
Frequency



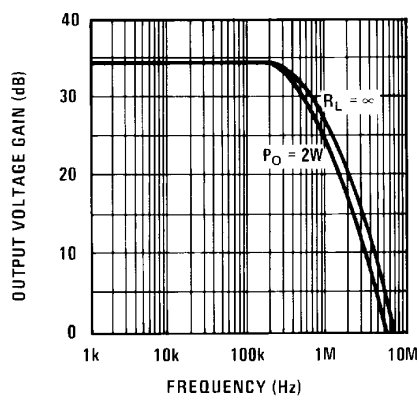
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Total Harmonic Distortion
vs Output Power



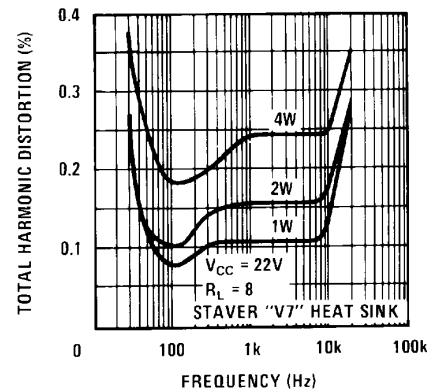
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Output Voltage Gain vs
Frequency



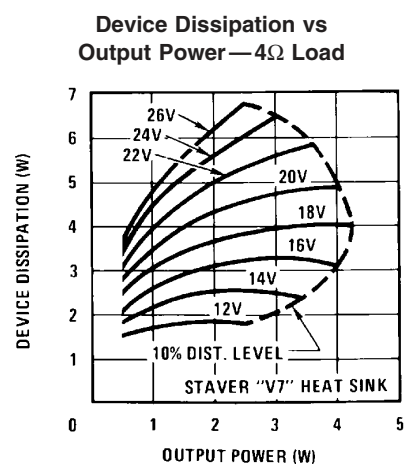
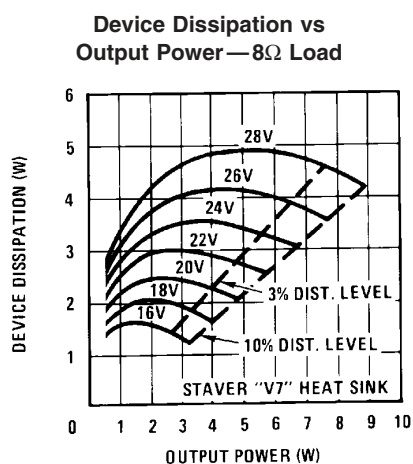
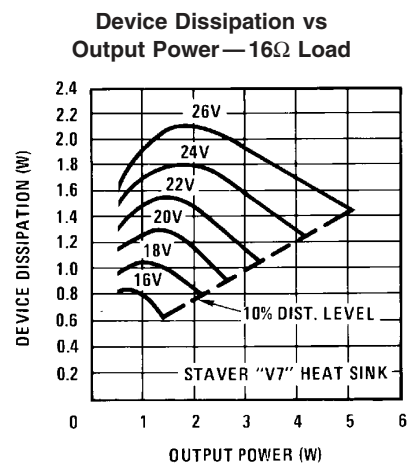
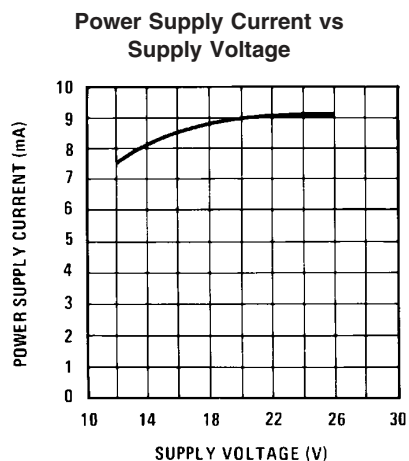
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Total Harmonic Distortion
vs Frequency

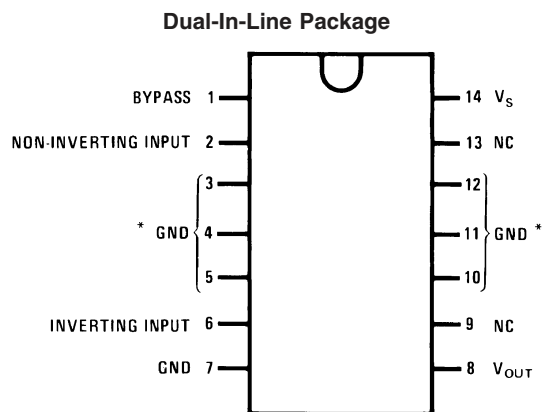
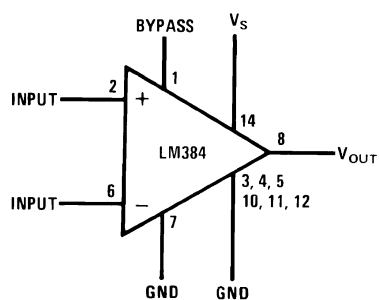


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Typical Performance Characteristics (Continued)



Block and Connection Diagrams

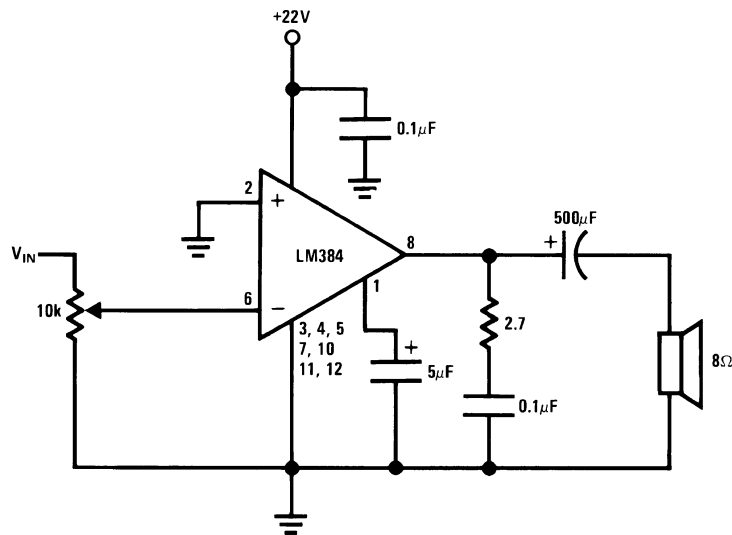


Note 7: Heatsink Pins

Top View Order Number LM384NSee NS Package
Number N14A

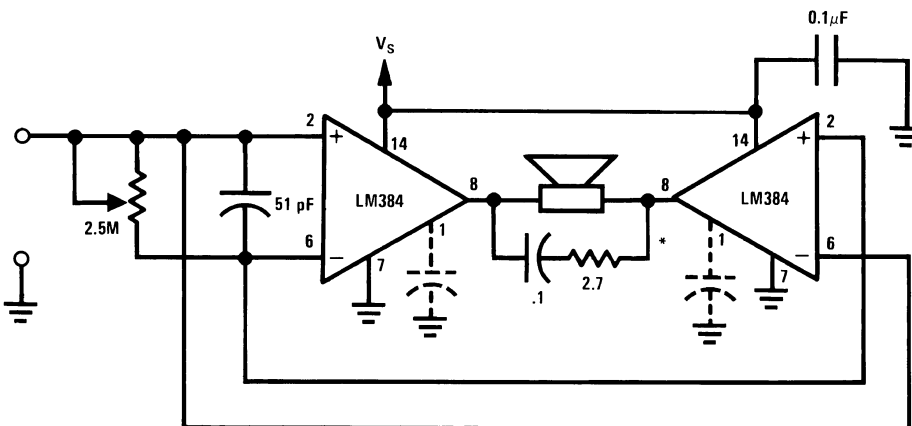
Typical Applications

Typical 5W Amplifier



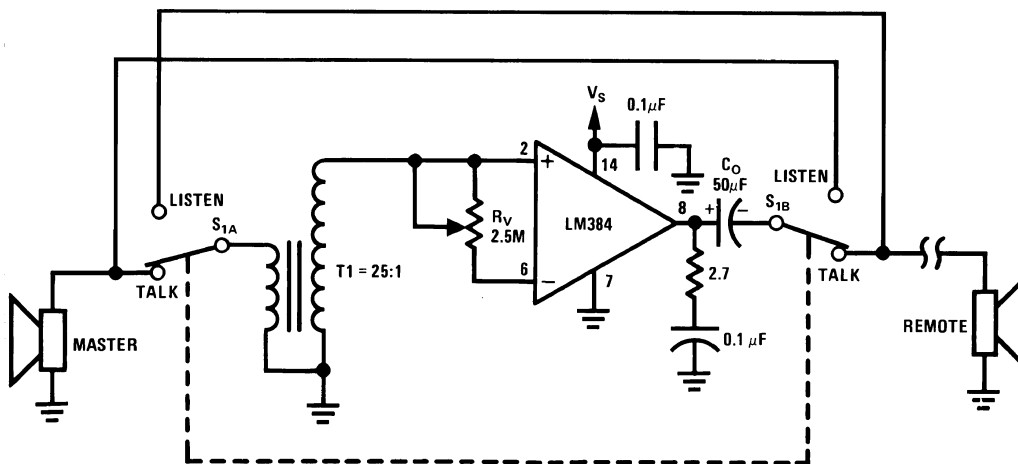
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Bridge Amplifier



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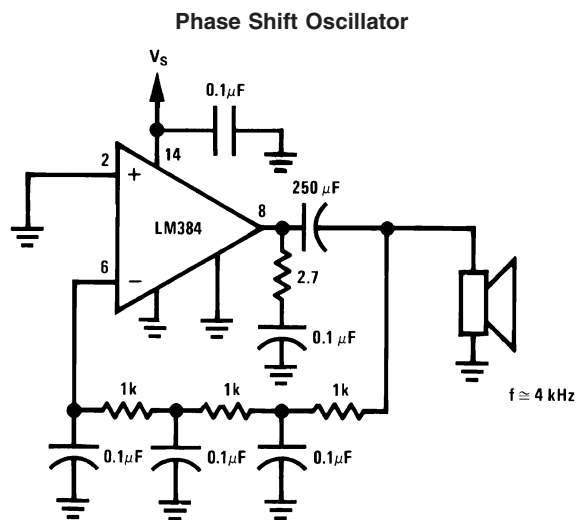
Intercom



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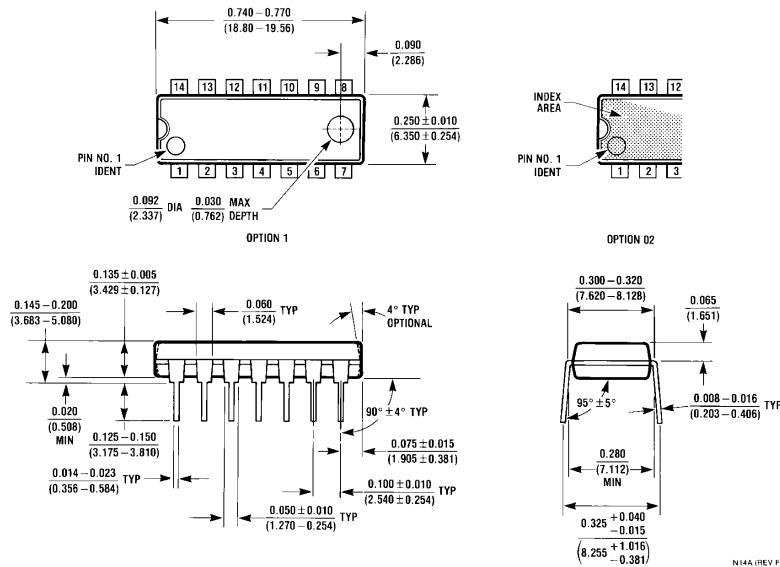
*For stability with high current loads

Typical Applications (Continued)



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Physical Dimensions inches (millimeters) unless otherwise noted



Molded Dual-In-Line Package (N)
Order Number LM384N
NS Package Number N14A

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