

Absolute Maximum Ratings

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

Supply Voltage Between Pin 11 and Pins 4, 14	16V
DC Current Out of Pin 12	5 mA
DC Current Out of Pin 13	5 mA
DC Current Out of Pin 15	2 mA

Power Dissipation (Note 2)	1500 mW
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10 sec.)	260°C

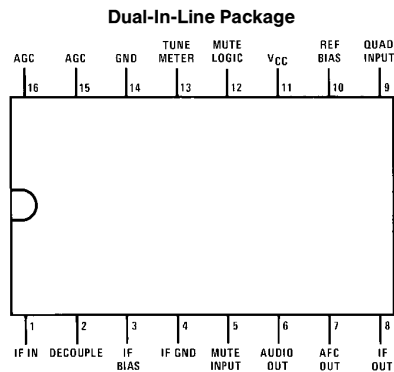
Electrical Characteristics $T_A = 25^\circ\text{C}$, $V^+ = 12\text{V}$

Symbol	Parameter	Conditions (See Single-Tuned Test Circuit)	Min	Typ	Max	Units
STATIC (DC) CHARACTERISTICS						
I_{11}	Quiescent Circuit Current	No Signal Input, Non Muted	20	31	44	mA
V1	DC Voltages: Terminal 1 (IF Input)		1.2	2.0	2.4	V
V2	Terminal 2 (AC Return to Input)		1.2	2.0	2.4	V
V3	Terminal 3 (DC Bias to Input)		1.2	2.0	2.4	V
V15	Terminal 15 (RF AGC)		7.5	9.5	11	V
V10	Terminal 10 (DC Reference)		5	5.75	6	V
DYNAMIC CHARACTERISTICS						
$V_i(\text{lim})$	Input Limiting Voltage (-3 dB Point)	$V_{IN} = 0.1\text{V}$ AM Mod. = 30%		12	25	μV
AMR	AM Rejection (Term. 6)		45	55		dB
$V_O(\text{AF})$	Recovered AF Voltage (Term. 6)		325	500	650	mV
THD	Total Harmonic Distortion (Note 1) Single Tuned (Term. 6) Double Tuned (Term. 6)	$V_{IN} = 0.1\text{V}$	$f_o = 10.7\text{ MHz}$, $f_{\text{mod}} = 400\text{ Hz}$, Deviation $\pm 75\text{ kHz}$	0.5	1	%
S + N/N	Signal Plus Noise to Noise Ratio (Term. 6)			65	80	
f_{DEV}	Deviation Mute Frequency		$f_{\text{mod}} = 0$	± 40		kHz
V16	RF AGC Threshold			1.25		V
V12	On Channel Step	$V_{IN} = 0.1\text{V}$	$f_{\text{DEV}} < \pm 40\text{ kHz}$ $f_{\text{DEV}} > \pm 40\text{ kHz}$	0 5.6		V

Note 1: THD characteristics are essentially a function of the phase characteristics of the network connected between terminals 8, 9, and 10.

Note 2: For operation in ambient temperatures above 25°C, the device must be derated based on a 150°C maximum junction temperature and a thermal resistance of 80°C/W junction to ambient.

Connection Diagram

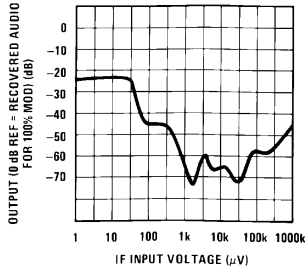


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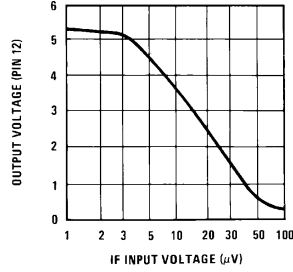
Order Number LM3189N
See NS Package Number N16E

Typical Performance Characteristics

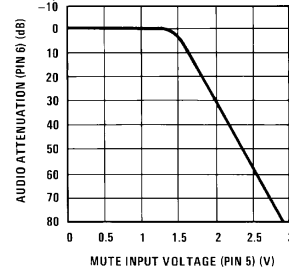
AM Rejection (30% Mod) vs IF Input Signal



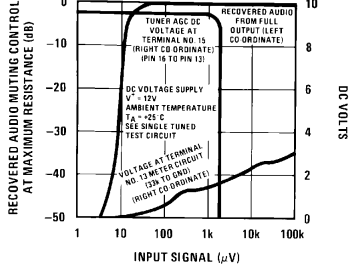
Mute Control Output (Pin 12) vs IF Input Signal



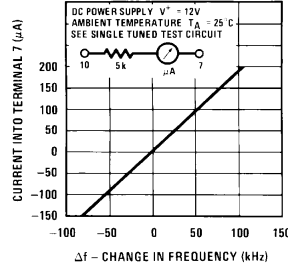
Typical Audio Attenuation (Pin 6) vs Mute Input Voltage (Pin 5)



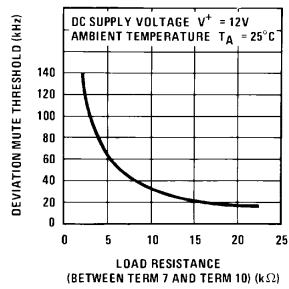
Muting Action, Tuner AGC, and Tuning Meter Output as a Function of Input Signal Voltage



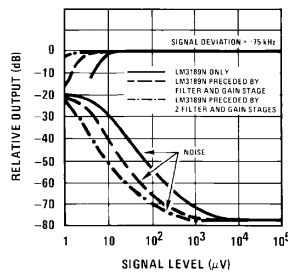
AFC Characteristics (Current at Term 7 as a Function of Change in Frequency)



Deviation Mute Threshold as a Function of Load Resistance (Between Term 7 and Term 10)

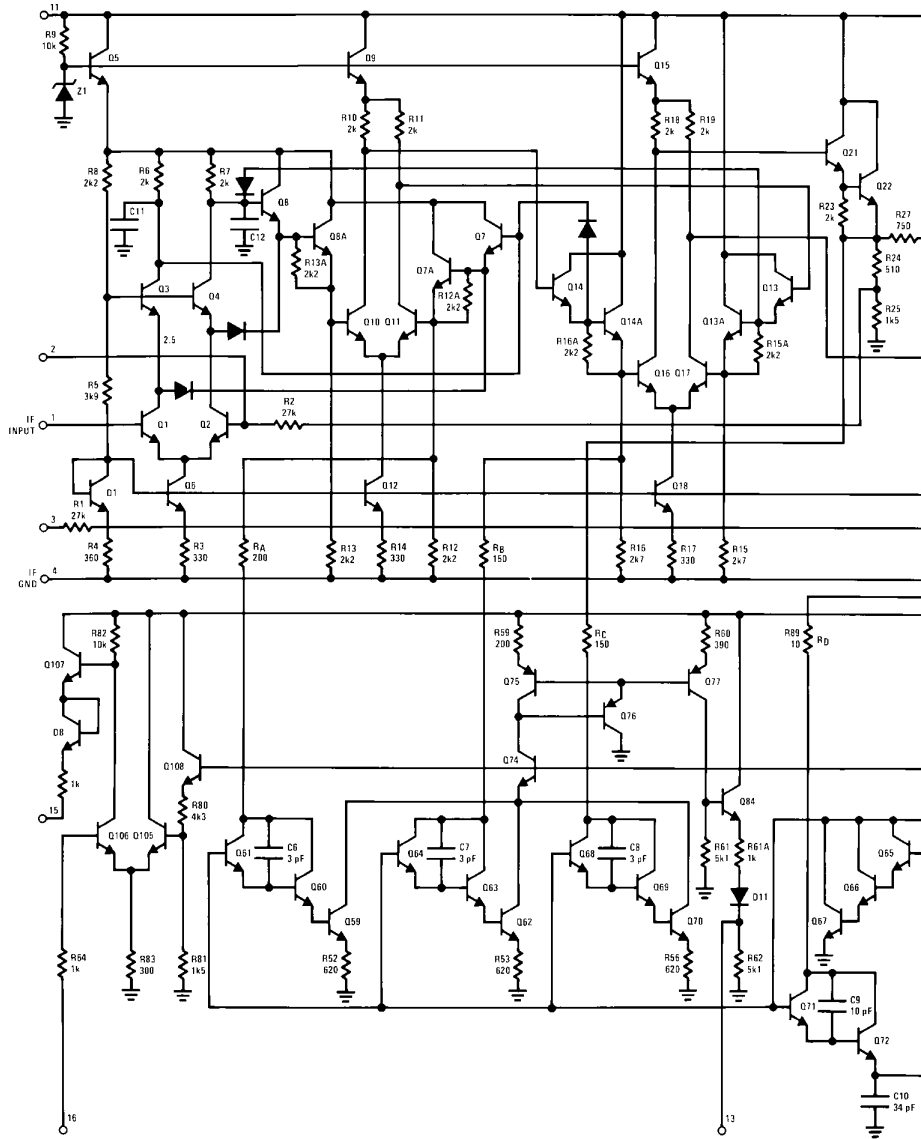


Typical Limiting and Noise Characteristics



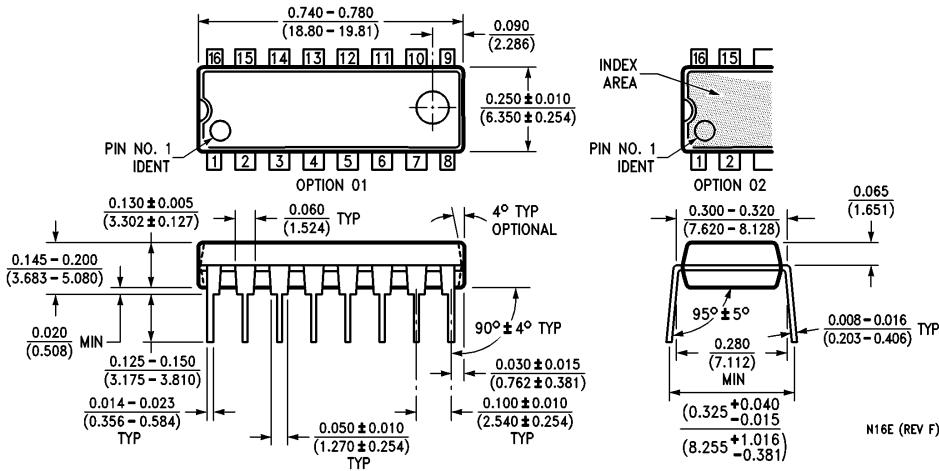
TL/H/7960-7

Schematic Diagram



TL/H/7960-8

Physical Dimensions inches (millimeters)



Dual-In-Line Package (N)
Order Number LM3189N
See NS Package Number N16E

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