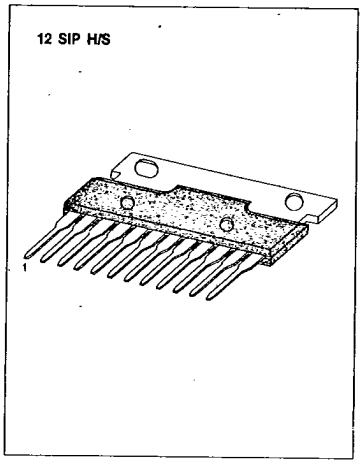
KA2211 LINEAR INTEGRATED CIRCUIT

5.8W DUAL POWER AMPLIFIER

The KA2211 is a dual audio power amplifier for consumer application. It is designed for high power, low dissipation and low noise.
It also contains various kind of protectors. It is suitable for car-audio power amplifier with high performance.



FEATURES

- Operating supply voltage range: V_{CC} = 10V ~ 18V
- High power (Dual)
  P_o = 5.8W (Typ) at V_{CC} = 13.2V, R_L = 4Ω, THD = 10%
- Low distortion (Dual)
  THD = 0.06% (Typ) at V_{CC} = 13.2V, R_L = 4Ω, P_o = 1W, A_V = 52dB
- Low noise (Dual)
  V_{NO} = 0.7mV (Typ) at V_{CC} = 13.2V, R_L = 4Ω, R_g = 10KΩ,
  A_V = 52dB, BW(−3dB) = 20Hz ~ 20KHz
- Protector; Thermal shut down
  Over voltage protection
  DC short protection

BLOCK DIAGRAM

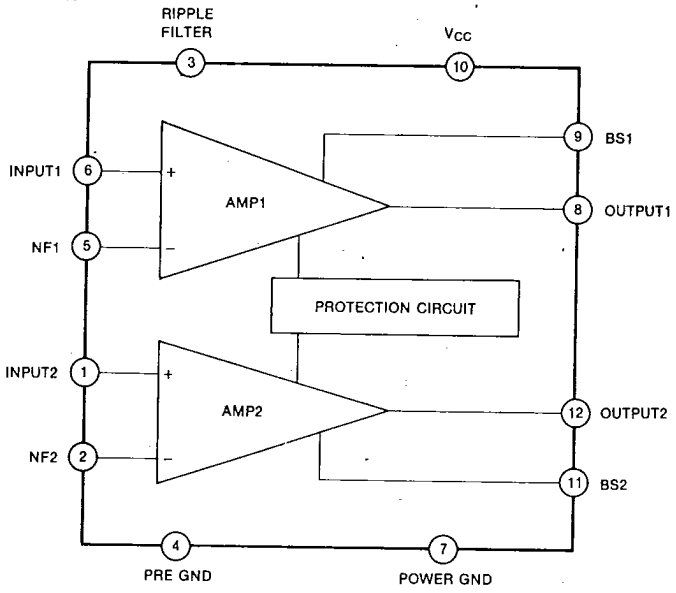


Fig. 1

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Condition	Value	Unit
Supply Voltage	V_{CC} (surge)	t = 0.2 sec	45	V
Maximum Supply Voltage	V_{CC} (max 1)	V_I = 0	25	V
Maximum Supply Voltage	V_{CC} (max 2)	with signal	18	V
Maximum Output Current	I_o (peak)		3.5	A
Power Dissipation	P_d		15	W
Operating Temperature	T_{opr}		− 20 ~ + 75	°C
Storage Temperature	T_{stg}		− 40 ~ + 150	°C

ELECTRICAL CHARACTERISTICS

(T_a = 25°C, V_{CC} = 13.2V, R_L = 4Ω, R_g = 600Ω, f = 1KHz, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Circuit Current	I_{CC}	V_I = 0		80	145	mA
Output Power	P_o	THD = 10%	5	5.8		W
Total Harmonic Distortion	THD	P_o = 1W		0.06	0.3	%
Voltage Gain	A_V	V_o = 0dBm	50	52	54	dB
Channel Balance	CB	V_o = 0dBm	− 1	0	1	dB
Output Noise Voltage	V_{NO}	R_g = 10KΩ, BW(− 3dB) = 20Hz ~ 20KHz		0.7	1.5	mV
Ripple Rejection Ratio	RR	f = 120Hz, V_r = 0dBm	40	52		dB
Cross Talk	CT	V_o = 0dBm		57		dB
Input Resistance	R_i	f = 1KHz		33		KΩ

TEST AND APPLICATION CIRCUIT

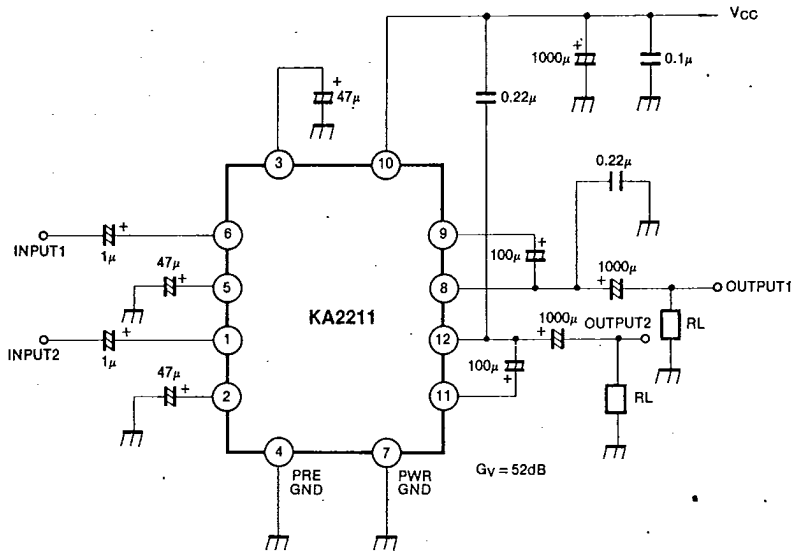
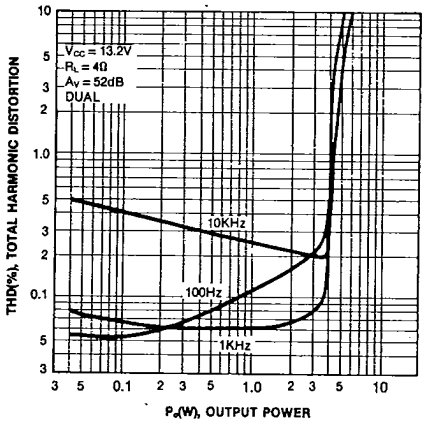
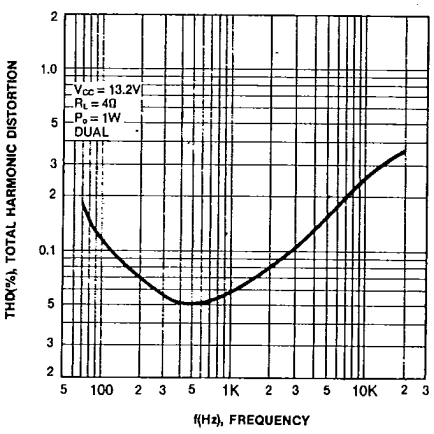


Fig. 2

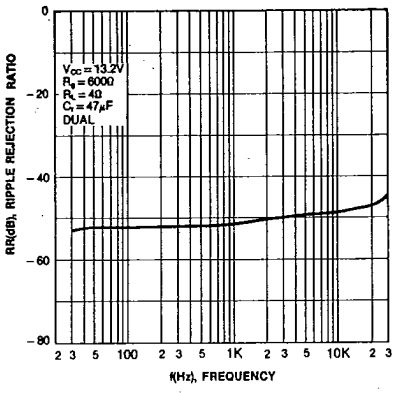
TOTAL HARMONIC DISTORTION-OUTPUT POWER



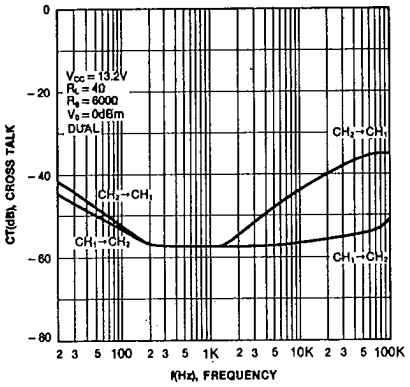
TOTAL HARMONIC DISTORTION-FREQUENCY



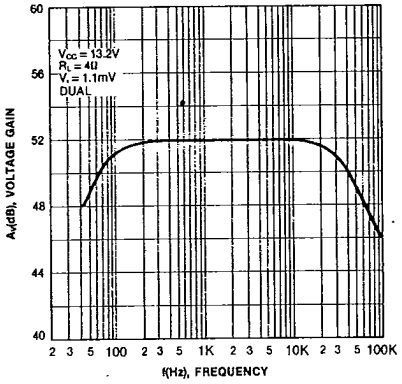
RIPPLE REJECTION-RATIO-FREQUENCY



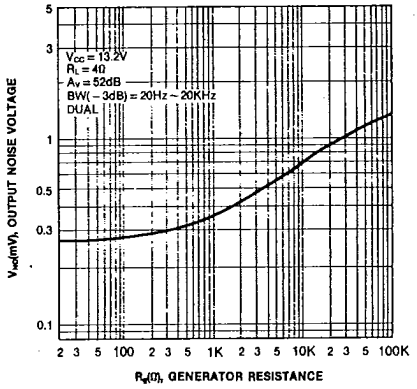
CROSS TALK-FREQUENCY



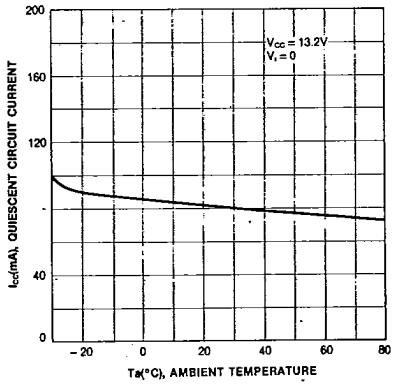
VOLTAGE GAIN-FREQUENCY



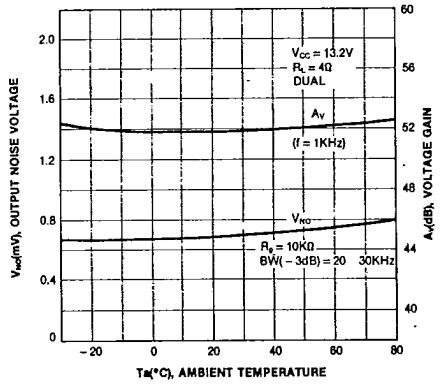
OUTPUT NOISE VOLTAGE-GENERATOR RESISTANCE



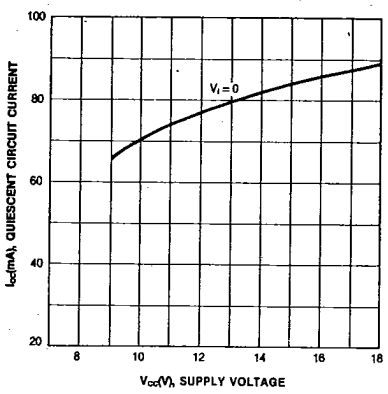
QUIESCENT CIRCUIT CURRENT-AMBIENT TEMPERATURE



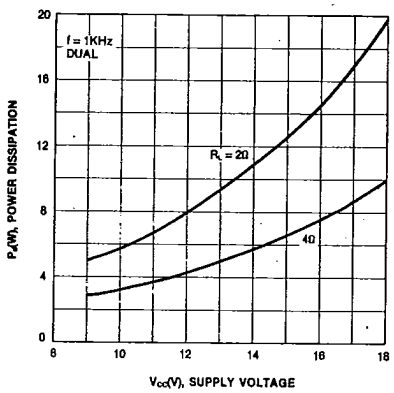
OUTPUT NOISE VOLTAGE, VOLTAGE GAIN-AMBIENT TEMPERATURE



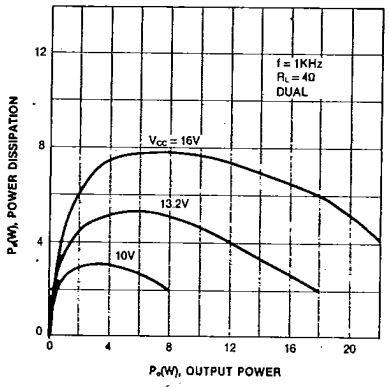
QUIESCENT CIRCUIT CURRENT-SUPPLY VOLTAGE



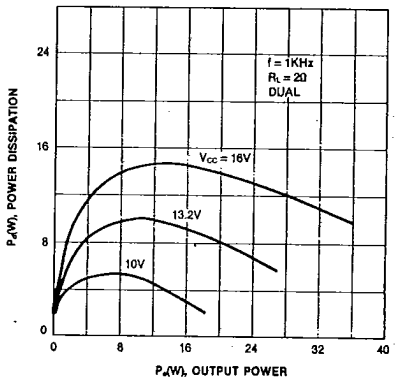
POWER DISSIPATION-SUPPLY VOLTAGE



POWER DISSIPATION-OUTPUT POWER



POWER DISSIPATION-OUTPUT POWER



OUTPUT POWER-SUPPLY VOLTAGE