

AN7163

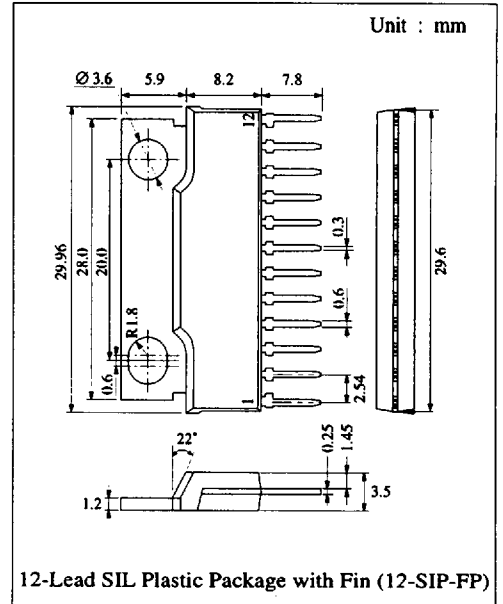
BTL 17W Audio Power Amplifier

■ Description

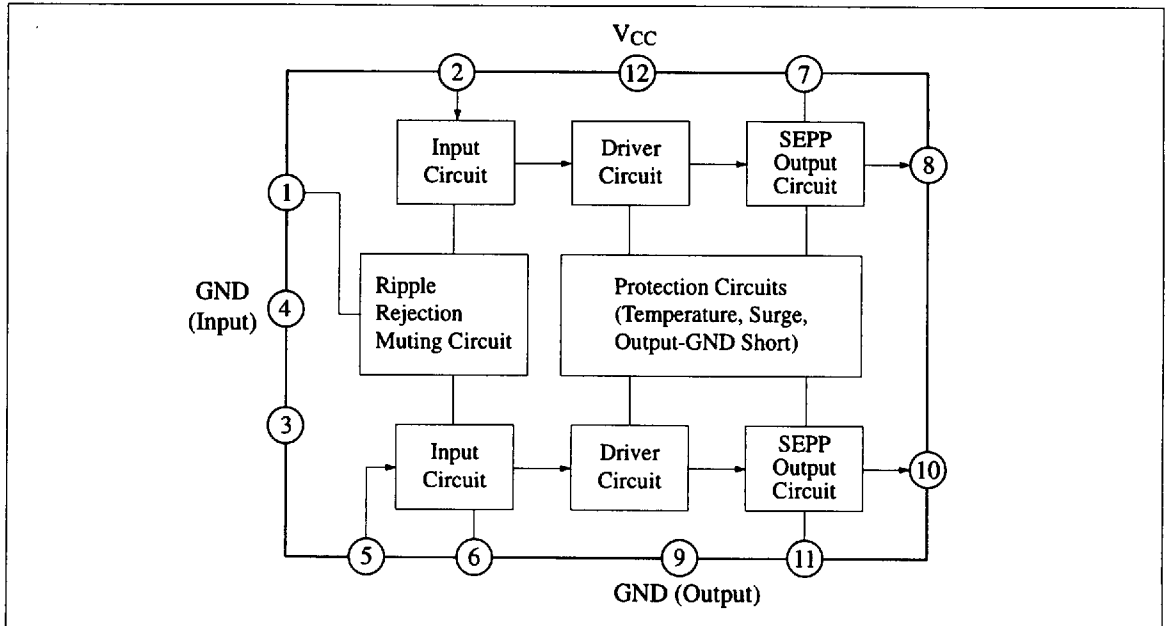
The AN7163 is a monolithic integrated circuit designed exclusively for BTL high power amplifiers in consumer applications. It is suitable for Hi-Fi and car stereo applications.

■ Features

- Built-in protection circuits include: overvoltage, overcurrent, thermal and output-GND short
- Small pop noise during ON/OFF
- High maximum output power (BTL): $P_O = 17W$ at $V_{CC} = 13.2V$, $R_L = 4\Omega$
- Few external components required
- Operating supply voltage: $V_{CC} = 7V \sim 18V$



■ Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	24	V
Supply Current	I _{CC}	4	A
Power Dissipation	P _D	41.7	W
Surge Supply Voltage	V _{CC(surge)}	50	V
Operating Ambient Temperature	T _{opr}	-30 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

Operating Supply Voltage Range: V_{CC} = 7.0V ~ 18.0V

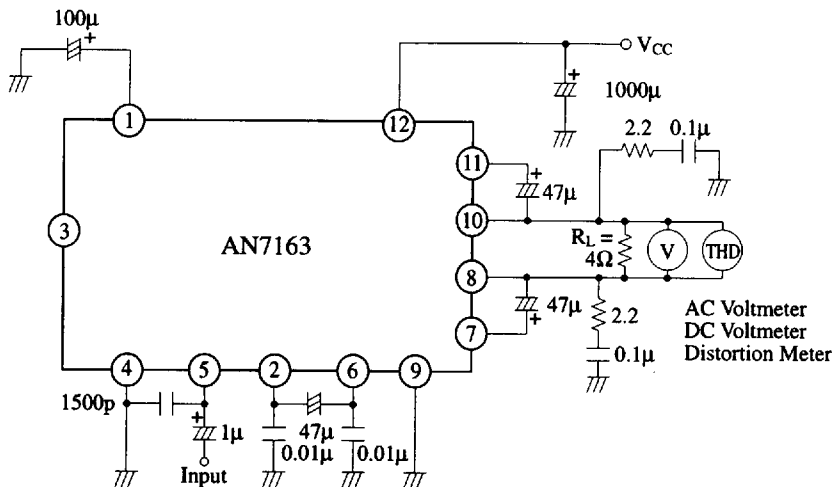
■ Electrical Characteristics (V_{CC}=13.2V, f=1kHz, R_L=4Ω, Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Quiescent Current	I _{CQ}	V _{in} = 0mV		40	80	mA
Output Noise Voltage	V _{no}	V _{in} = 0V, R _g = 10kΩ, f = 15Hz~30kHz, 12dB/OCT		0.7	1.2	mV
Output Offset Voltage	V _{O(offset)}	V _{in} = 0mV	-200		200	mV
Voltage gain	G _v	V _{in} = 5mV	49	51	53	dB
Total Harmonic Distortion	THD	V _{in} = 5mV		0.15	0.5	%
Output Power	P _O	THD = 10%	15	17		W
Ripple Rejection	RR	V _{in} = 0V, R _g = 0Ω, V _r = 300mV, f _r = 120Hz	35	45		dB

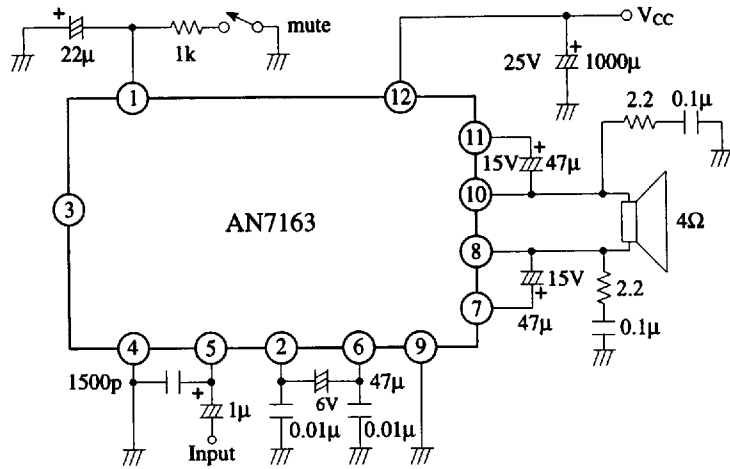
■ Pin

Pin No	Pin Name	Pin No	Pin Name
1	Ripple Filter	7	Bootstrap Ch.2
2	N.F.B. Ch.2	8	Output Ch.2
3	Centre Control	9	GND (Output)
4	GND (Input)	10	Output Ch.1
5	Input	11	Bootstrap Ch.1
6	N.F.B. Ch.1	12	V _{CC}

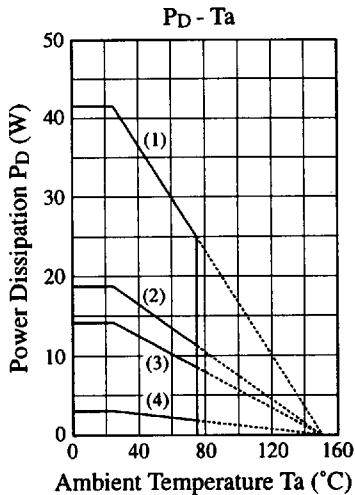
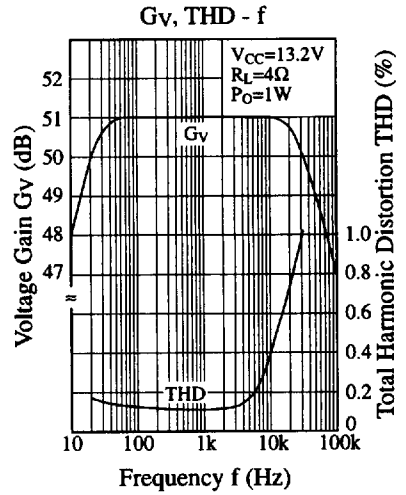
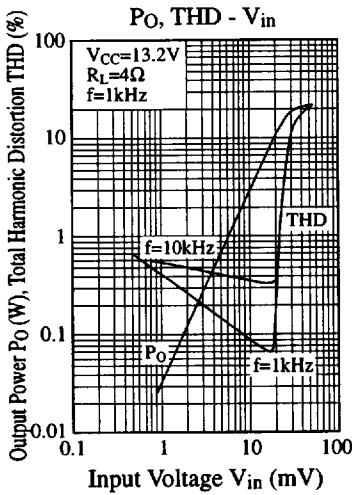
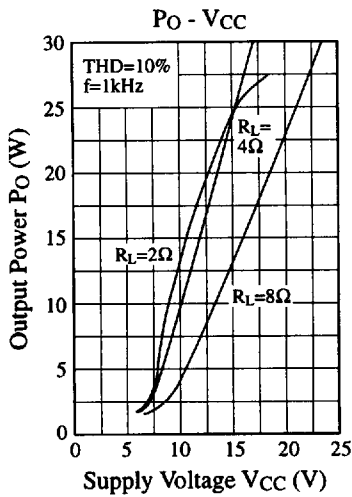
Test Circuit



■ Application Circuit



■ Characteristics Curve



- (1) $T_c = T_a$ ($\theta_{j-c} = 3^\circ\text{C/W}$)
- (2) With a $100\text{cm}^2 \times 3\text{mm}$ Al heat sink (black colour coated) or a $200\text{cm}^2 \times 2\text{mm}$ Al heat sink (not lacquered)
- (3) With a $100\text{cm}^2 \times 2\text{mm}$ Al heat sink (not lacquered)
- (4) Without heat sink