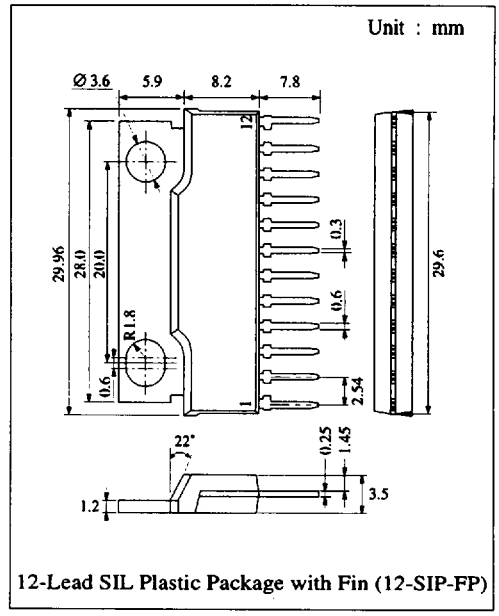
AN7163

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.

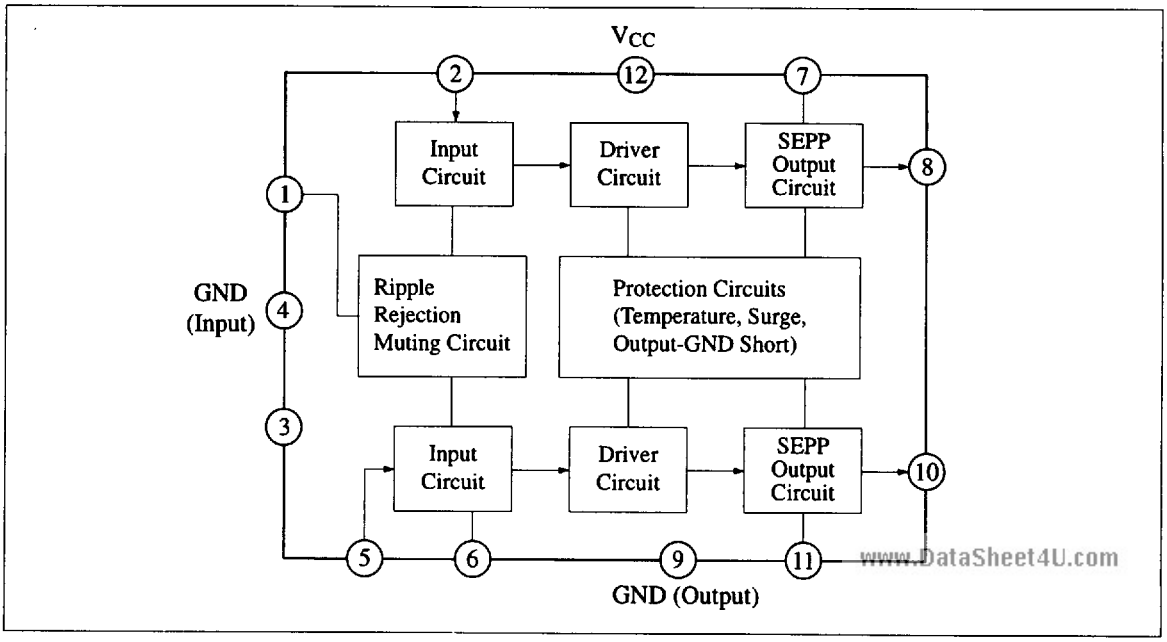


12-Lead SIL Plastic Package with Fin (12-SIP-FP)

■ 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 = 4Ω
- Few external components required
- Operating supply voltage: V_{CC} = 7V ~ 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	Topr	-30 ~ +75	°C
Storage Temperature	Tstg	-55 ~ +150	°C

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

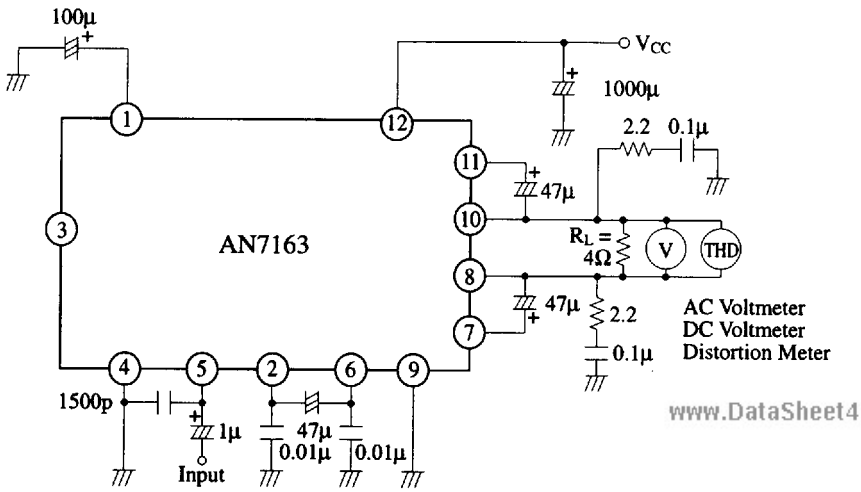
■ Electrical Characteristics (V_{CC}=13.2V, f=1kHz, R_L=4Ω, Ta=25°C)

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

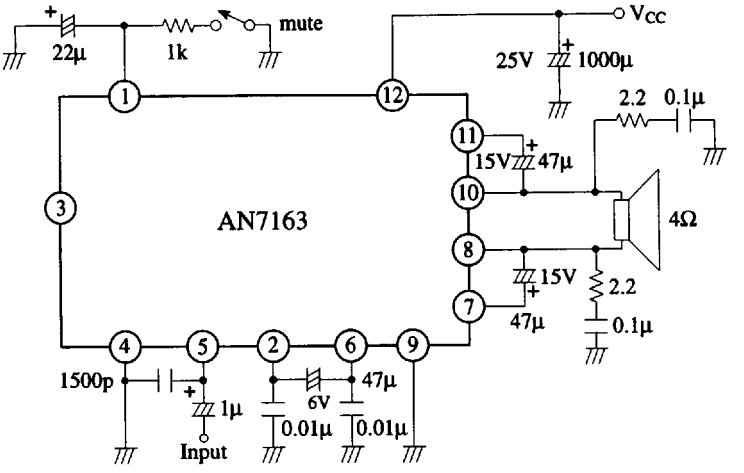
■ Pin

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}

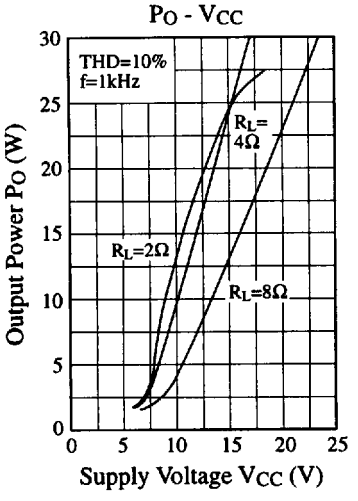
Test Circuit

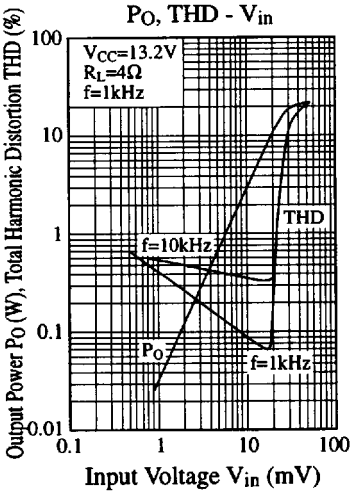


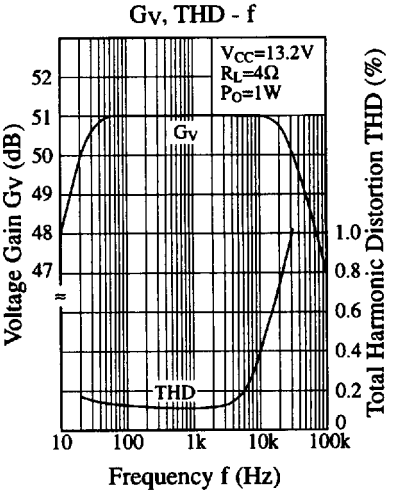
■ Application Circuit

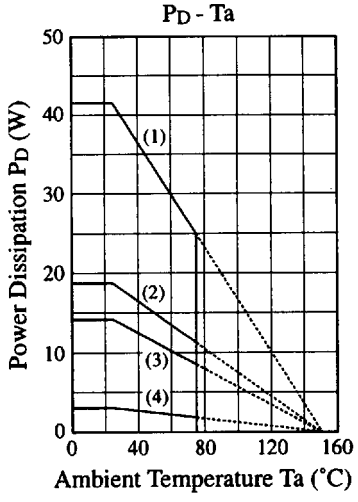


■ Characteristics Curve









(1) Tc=Ta (θ_{j-c}=3°C/W)
(2) With a 100cm^2 x 3mm Al heat sink (black colour coated) or a 200cm^2 x 2mm Al heat sink (not lacquered)
(3) With a 100cm^2 x 2mm Al heat sink (not lacquered)
(4) Without heat sink