

# LINEAR MONOLITHIC INTEGRATED CIRCUITS

## IC's For Radio, Audio

Type No.	Function	Maximum Ratings (Ta=25°C)	Electrical Characteristics (Ta=25°C)								
			Item	Symbol	Condition	min.	typ.	max.	Unit		
AN7146M	4.6W BTL/ 2.3W Dual Audio Power Amplifier	$V_{CC}(V_{1-9})=20V$ $I_{CC}=4A$ $P_D=20W(T_a=60^\circ C)$ $T_{opr}=-30\sim+75^\circ C$ $T_{stg}=-55\sim+150^\circ C$  Note: Typ. Value for reference only.	Quiescent Current	$I_{CQ}$	$V_{CC}=9V, V_i=0$	20	32	55	mA		
			(Dual Operation *** $V_{CC}=9V, R_L=4\Omega, f=1kHz$ )								
			Voltage Gain	$G_V$	$V_i=4mV$	42	44	46	dB		
			Total Harmonic Distortion	THD			0.3	1	%		
			Non-distortional Max. Output	$P_O$	THD=10%	2	2.3		W		
			Output Noise Voltage	$V_{no}$	$R_g=3.9k\Omega$		0.4	1	mV		
			Channel Balance	CB	$V_i=4mV$		0	1	dB		
			(BTL Operation *** $V_{CC}=9V, R_L=8\Omega, f=1kHz$ )								
			Voltage Gain	$G_V$	$V_i=4mV$	46	48	50	dB		
			Total Harmonic Distortion	THD			0.4	1	%		
			Non-distortional Max. Output	$P_O$	THD=10%	4.3	4.6		W		
Output Noise Voltage	$V_{no}$	$R_g=3.9k\Omega$		0.7	1.5	mV					
(Dual Operation *** $V_{CC}=9V, R_L=4\Omega, f=1kHz$ )											
(BTL Operation *** $V_{CC}=9V, R_L=8\Omega, f=1kHz$ )											
(Dual Operation *** $V_{CC}=9V, R_L=4\Omega, f=1kHz$ )											
AN7146H	15W BTL/ 4.5W Dual Audio Power Amplifier	$V_{CC}(V_{1-9})=24V^{*1}$ $V_{CC}(V_{1-9})=20V^{*2}$ $I_{CC}=4A$ $P_D=20W(T_a=60^\circ C)$ $T_{opr}=-30\sim+75^\circ C$ $T_{stg}=-55\sim+150^\circ C$  *1 Without signal *2 Operation  Note: Typ. Value for reference only.	Quiescent Current	$I_{CQ}$	$V_{CC}=16V, V_i=0$	25	40	65	mA		
			(Dual Operation *** $V_{CC}=9V, R_L=8\Omega, f=1kHz$ )								
			Voltage Gain	$G_V$	$V_i=4mV$	42.5	44.5	46.5	dB		
			Total Harmonic Distortion	THD			0.15	1	%		
			Non-distortional Max. Output	$P_O$	THD=10%	3.7	4.5		W		
			Output Noise Voltage	$V_{no}$	$R_g=10k\Omega, V_i=0$		0.6	1.5	mV		
			Channel Balance	CB	$V_i=4mV$		0	1	dB		
			(BTL Operation *** $V_{CC}=16V, R_L=8\Omega, f=1kHz$ )								
			Voltage Gain	$G_V$	$V_i=4mV$	46	48	50	dB		
			Total Harmonic Distortion	THD			0.4	1	%		
			Non-distortional Max. Output	$P_O$	THD=10%	12	15		W		
Output Noise Voltage	$V_{no}$	$R_g=10k\Omega, V_i=0$		0.7	2	mV					
(BTL Operation *** $V_{CC}=16V, R_L=8\Omega, f=1kHz$ )											
(Dual Operation *** $V_{CC}=16V, R_L=8\Omega, f=1kHz$ )											
AN7154 AN7155	5.5W Audio Power Amplifier	$V_{CC}=24V^{*1}$ $V_{CC}=20V^{*2}$ $I_{CC}=4A$ $P_D=25W$ $T_{opr}=-30\sim+75^\circ C$ $T_{stg}=-55\sim+150^\circ C$  *1 Without signal *2 Operation	(V <sub>CC</sub> =13.2V, R <sub>L</sub> =4Ω, f=1kHz)								
			Quiescent Current	$I_{CQ}$	$V_i=0$	20	30	75	mA		
			Voltage Gain	$G_V$	$V_i=4mV$	50	52	54	dB		
			Non-distortional Max. Output	$P_O$	THD=10%	4.8	5.5		W		
			Total Harmonic Distortion	THD	$V_i=4mV$		0.1	1	%		
			Output Noise Voltage	$V_{no}$	$R_g=10k\Omega$		1	3	mV		
			Input Resistance	$R_i$		20	30		kΩ		
			Note) AN7154/AN7155 symmetrical outline								
			(V <sub>CC</sub> =13.2V, R <sub>L</sub> =4Ω, f=1kHz)								
			(V <sub>CC</sub> =13.2V, R <sub>L</sub> =4Ω, f=1kHz)								
AN7156N	Dual 5.3W Audio Power Amplifier	$V_{CC}(V_{1-10})=24V^{*1}$ $V_{CC}(V_{1-10})=20V^{*2}$ $I_{CC}=4A$ $P_D=30W(T_a=45^\circ C)$ $T_{opr}=-30\sim+75^\circ C$ $T_{stg}=-55\sim+150^\circ C$  *1 Without signal *2 Operation	(V <sub>CC</sub> =13.2V, R <sub>L</sub> =4Ω, f=1kHz)								
			Quiescent Current	$I_{CQ}$	$V_i=0$	40	70	120	mA		
			Closed Loop Voltage Gain	$G_{VC}$	$V_i=3mV$	52	54	56	dB		
			Non-distortional Max. Output	$P_O$	THD=10%	4.8	5.5		W		
			Total Harmonic Distortion	THD	$V_i=3mV$		0.15	1	%		
			Output Noise Voltage	$V_{no}$	$R_g=10k\Omega$		1	3	mV		
			Channel Balance	CB	$V_i=3mV$		0	1	dB		
			Separation	Sep		45	50		dB		
			*3 $I_{CQ}$ typ. 35mA/channel								
			Note) Supply voltage range for assuring AC operation 8~16V.								

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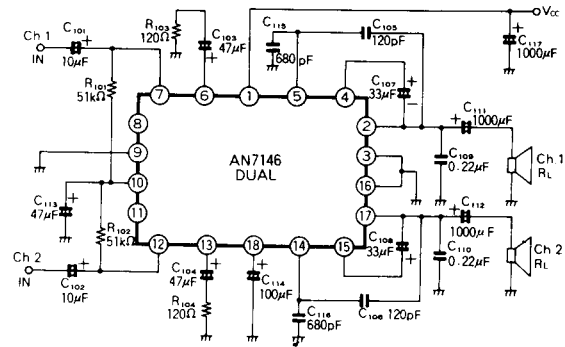
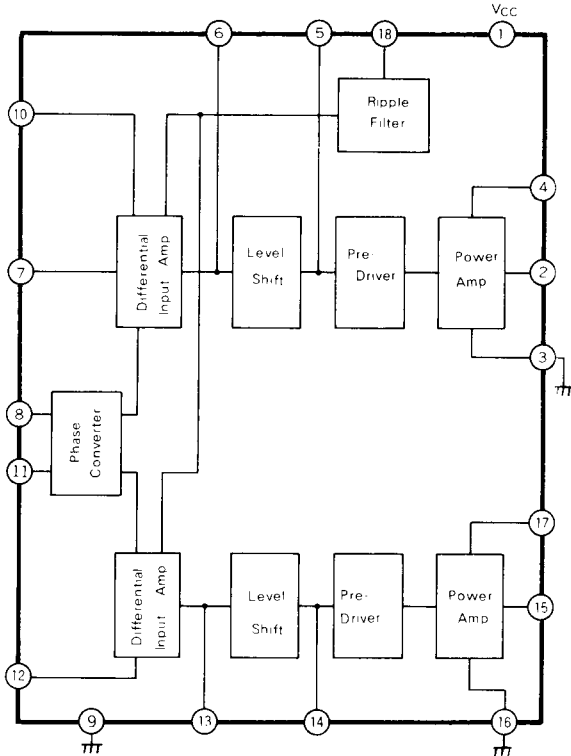
IC's For Radio, Audio

Circuit Diagram

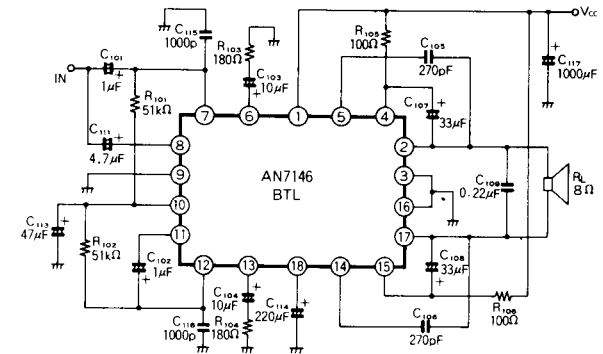
Application Circuit

**AN7146M, AN7146H**  
(Package I—27,18—Lead Plastic Power DIL)

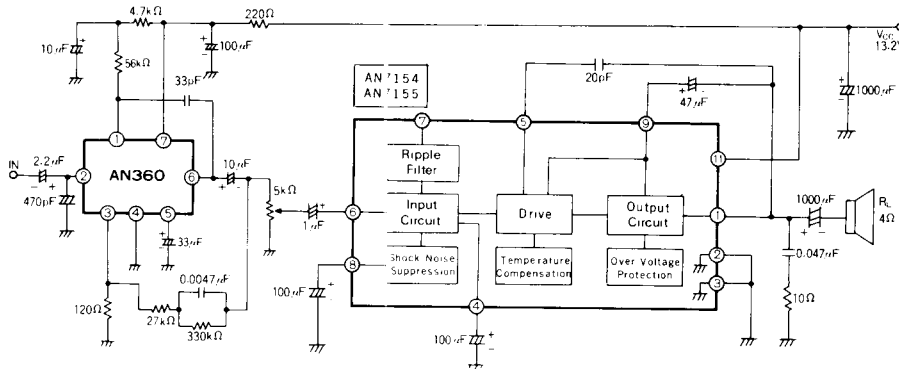
Dual Circuit



BTL Circuit



**AN7154/AN7155** (Package I—11,11—Lead Plastic Power SIL)



**AN7156N** (Package I—12,12—Lead Plastic Power SIL)

