

AN6553, AN6553S

Dual Operational Amplifiers

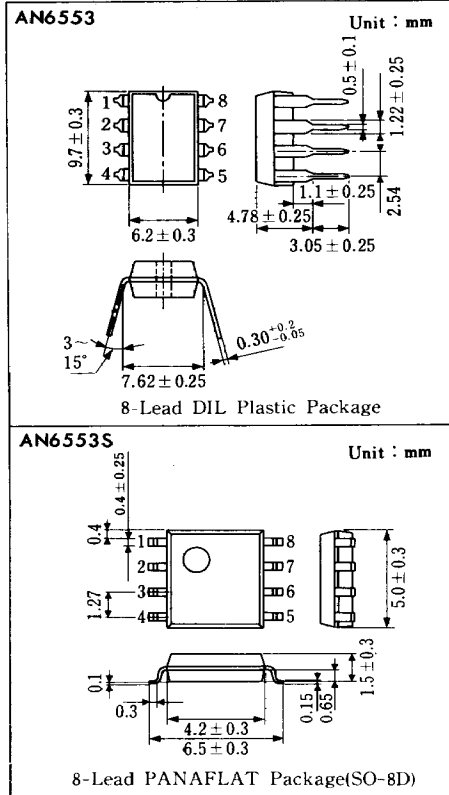
■ Outline

The AN6553 and the AN6553S are dual operational Amplifiers with phase compensation circuits built-in.

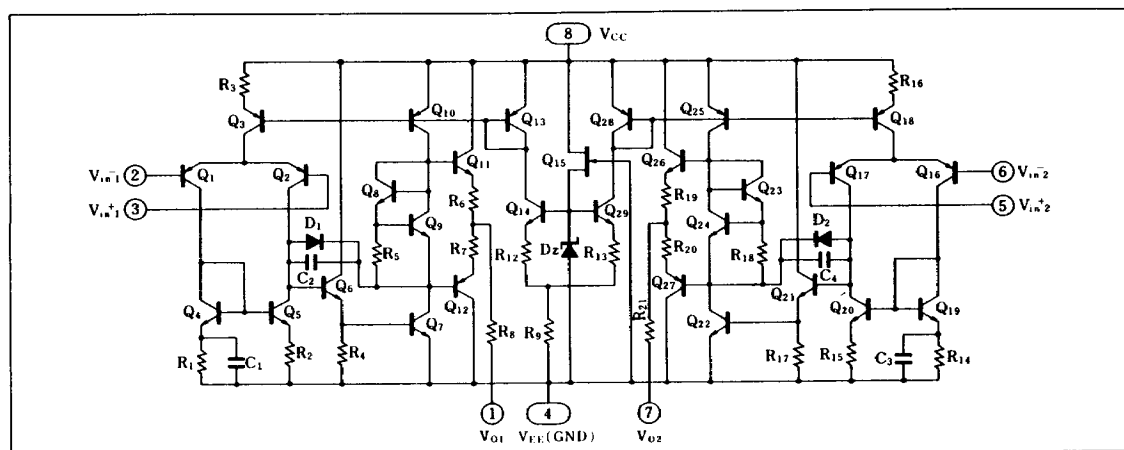
They are suited for application to various electronic circuits such as active filters audio preamplifiers.

■ Features

- Phase compensation circuit
- High gain, low noise
- Output short-circuit protection
- Slew rate : 2.0 V/ μ s typ.



■ Schematic Diagram



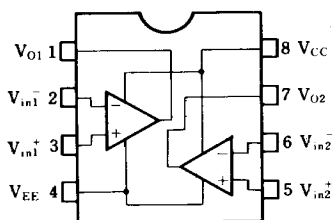
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item			Symbol	Rating	Unit
Voltage	Supply Voltage		V_{CC}	± 18	V
	Differential Input Voltage		V_{ID}	± 30	V
	Common-Mode Input Voltage		V_{ICM}	± 15	V
Power Dissipation	AN6553		P_D	500	mW
	AN6553S			360	
Temperature	Operating Ambient Temperature		T_{opr}	$-20 \sim +75$	$^{\circ}\text{C}$
	Storage Temperature	AN6553	T_{stg}	$-55 \sim +150$	$^{\circ}\text{C}$
		AN6553S		$-55 \sim +125$	

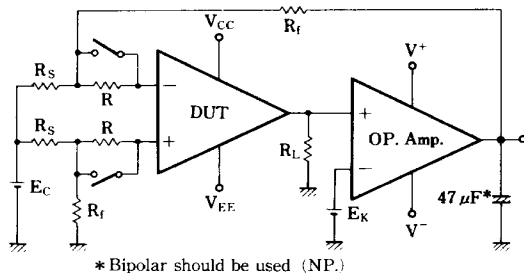
Electrical Characteristics ($V_{CC} = 15\text{V}$, $V_{EE} = -15\text{V}$, $T_a = 25^\circ\text{C}$)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Input Offset Voltage	$V_{I(offset)}$	1	$R_S \leq 10\text{k}\Omega$		0.5	6	mV
Input Offset Current	I_{IO}	1			5	200	nA
Input Bias Current	I_{Bias}	1				500	nA
Voltage Gain	G_V	1	$R_L \geq 2\text{k}\Omega$, $V_o = \pm 10\text{V}$	86	100		dB
Maximum Output Voltage	$V_{O(max.)}$	2	$R_L \geq 10\text{k}\Omega$	± 12	± 14		V
			$R_L \geq 2\text{k}\Omega$	± 10	± 13		V
Common-Mode Input Voltage Width	V_{CM}	3		± 12	± 14		V
Common-Mode Rejection Ratio	CMR	1		70	90		dB
Supply Voltage Rejection Ratio	SVR	1			30	150	$\mu\text{V/V}$
Power Consumption	P_C	4	$R_L = \infty$		90	170	mW
Slew Rate	SR	5	$R_L \geq 2\text{k}\Omega$		2.0		$\text{V}/\mu\text{s}$
Input Referred Noise Voltage	V_{ni}	6	$R_S = 1\text{k}\Omega$, $B = 10\text{Hz} \sim 30\text{kHz}$		2.5		μV_{rms}

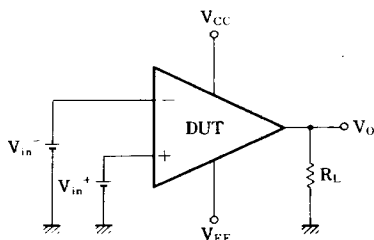
Pin Connection



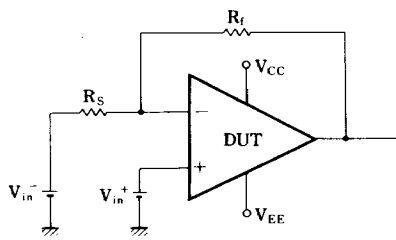
Test Circuit 1 ($V_{I(offset)}$, I_{IO} , I_{Bias} , G_V , CMR, SVR)



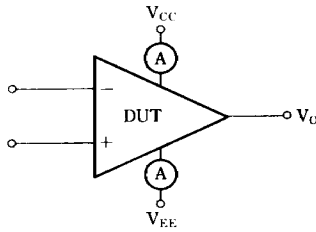
Test Circuit 2 ($V_{O(max.)}$)



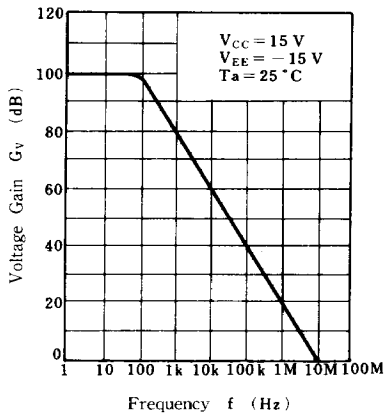
Test Circuit 3 (V_{CM})



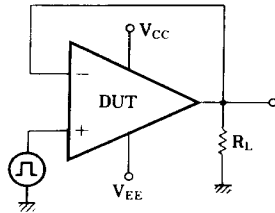
Test Circuit 4 (P_C)



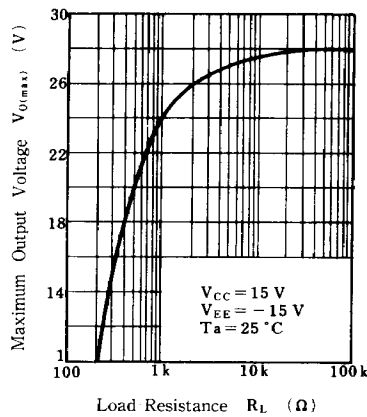
$G_V - f$



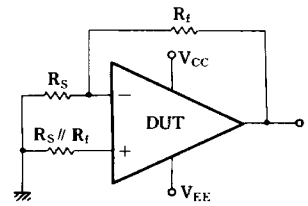
Test Circuit 5 (SR)



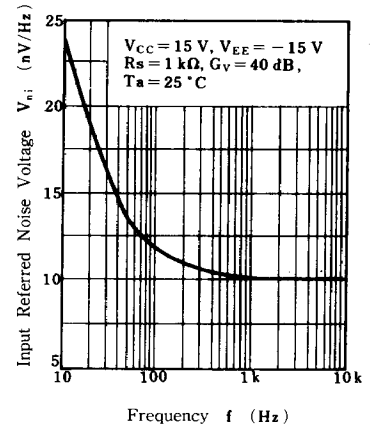
$V_{O(max)} - R_L$



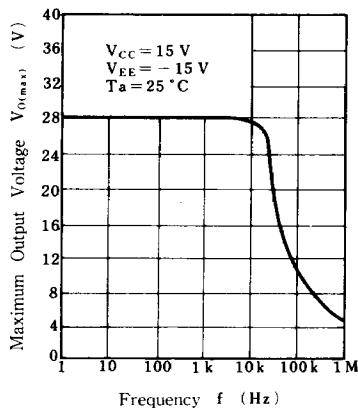
Test Circuit 6 (V_{ni})



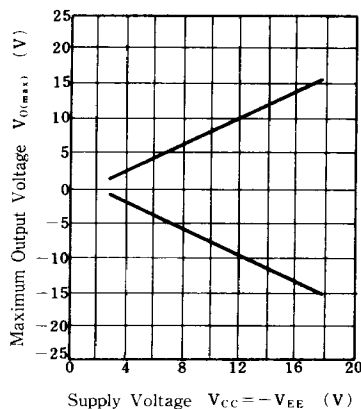
$V_{ni} - f$



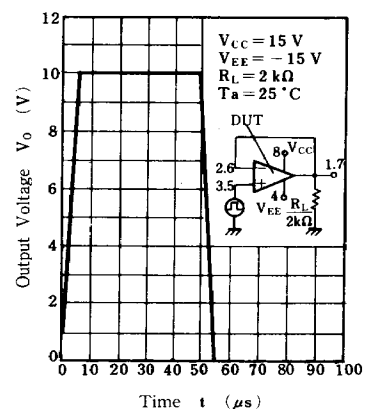
$V_{O(max)} - f$



$V_{O(max)} - V_{CC}, V_{EE}$

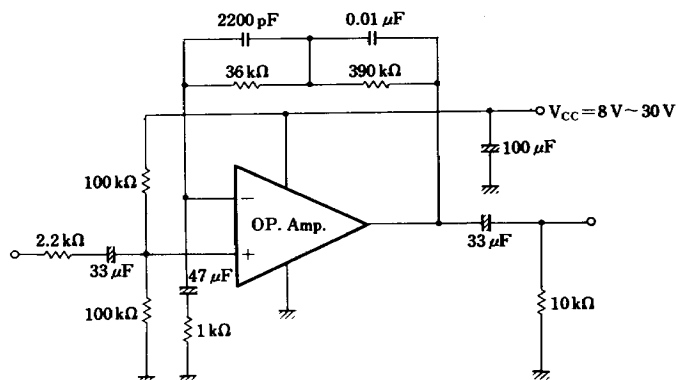


$V_O - t$



■ Application Circuit

RIAA Pre-Amp. (Single Voltage Operation)



■ Pin

Pin No.	Pin Name
1	Ch. 1 Output
2	Ch. 1 Invert Input
3	Ch. 1 Non Invert Input
4	V_{EE}
5	Ch. 2 Non Invert Input
6	Ch. 2 Invert Input
7	Ch. 2 Output
8	V_{CC}