

AN1081, AN1081S, AN6583

Single J-FET Input Operational Amplifiers

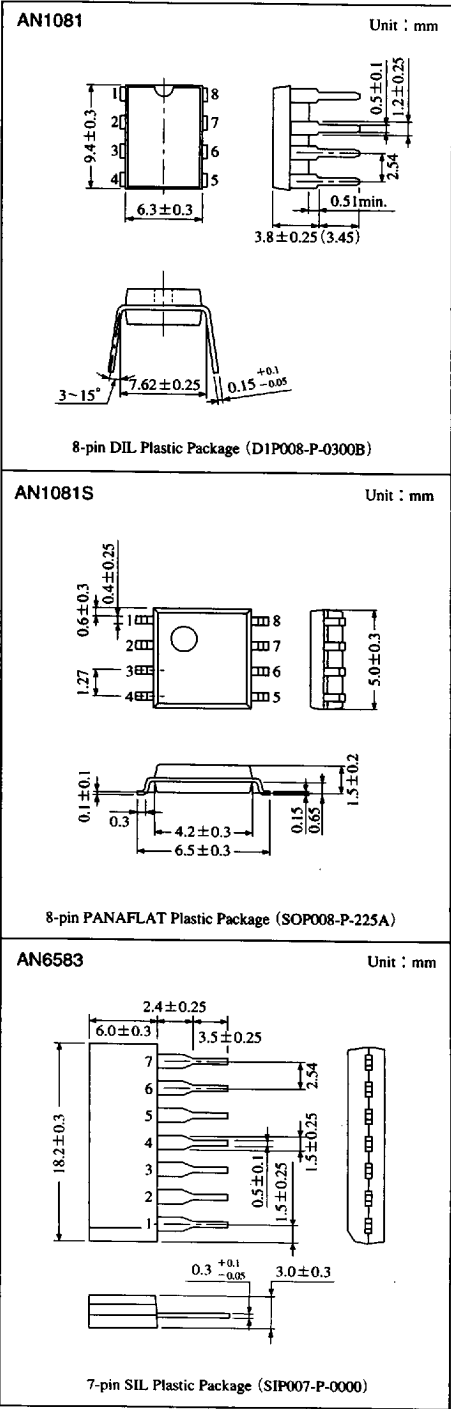
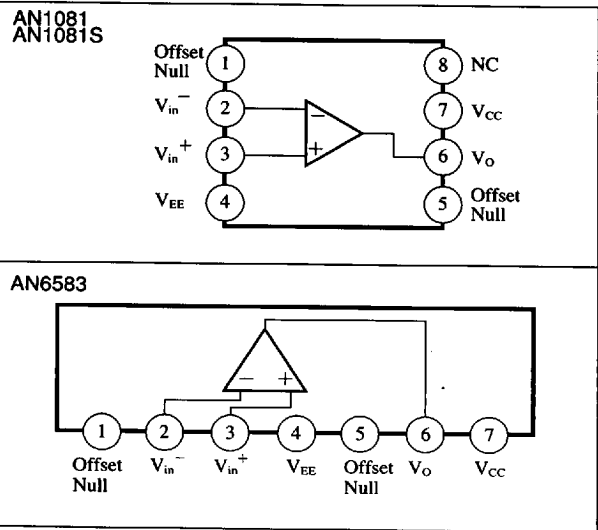
Overview

The AN1081, the AN1081S and the AN6583 are single operational amplifiers with input stages consisting of P-ch J-FET adopting the ion implantation process, realizing high speed response, high input impedance and low input bias current. Therefore, they can be applied widely to general control equipments and medical equipments such as integrators, sample & hold circuits and high input impedance buffers.

Features

- High slew rate : $SR = 11V/\mu s$ typ.
- Low input bias current : $I_{Bias} = 30pA$ typ.
- Low offset current : $I_{IO} = 5pA$ typ.
- High impedance : $10^{12}\Omega$
- High voltage gain : $G_V = 106dB$ typ.
- Wide range of supply voltage : $\pm 5V$ to $\pm 18V$
- Built-in phase compensation circuit
- Offset null

Block Diagrams



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Pin Descriptions

AN1081, AN1081S

Pin No.	Pin name
1	Offset null
2	Inverting input
3	Non inverting input
4	V _{EE}
5	Offset null
6	Output
7	V _{CC}
8	NC

AN6583

Pin No.	Pin name
1	Offset null
2	Inverting input
3	Non inverting input
4	V _{EE}
5	Offset null
6	Output
7	V _{CC}

Absolute Maximum Ratings (Ta=25°C)

Parameter		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	AN1081, AN6583	P _D	500	mW
	AN1081S		360	
Operating ambient temperature		T _{opr}	−20 to +75	°C
Storage temperature	AN1081, AN6583	T _{stg}	−55 to +150	°C
	AN1081S		−55 to +125	

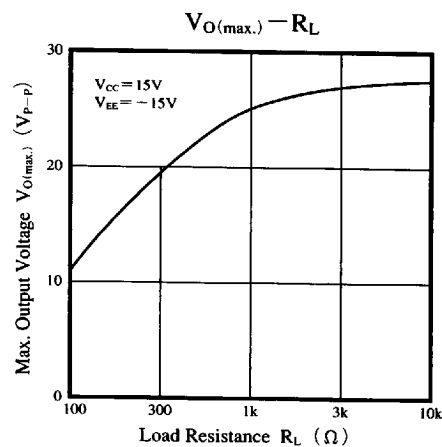
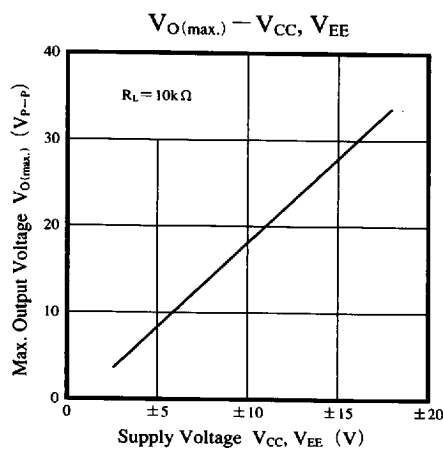
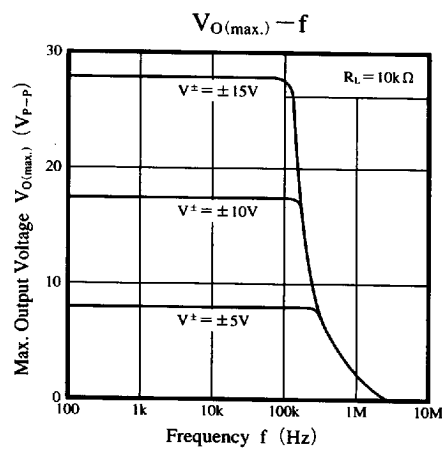
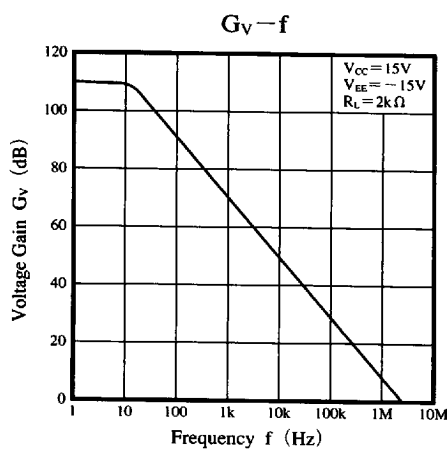
Electrical Characteristics (V_{CC}=15V, V_{EE}=−15V, Ta=25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Input offset voltage	V _{I(offset)}	R _S ≤50Ω	—	2	10	mV
Input offset current	I _{IO}		—	5	200	pA
Input bias current	I _{Bias}		—	30	400	pA
Voltage gain	G _V	R _L =2kΩ, V _O =±10V	88	106	—	dB
Maximum output voltage	V _{O(max.)}	R _L ≥10kΩ	±12	±14	—	V
Maximum output voltage	V _{O(max.)}	R _L ≥2kΩ	±10	±12.5	—	V
Common-mode input voltage range	V _{CM}		±10	—	—	V
Common-mode rejection ratio	CMR		70	76	—	dB
Supply voltage rejection ratio	SVR		70	76	—	dB
Power consumption	P _C	R _L =∞	—	60	84	mW
Slew rate	SR	R _L ≥2kΩ	—	11	—	V/μs
Zero-cross frequency	f _(T)	A _V =1	—	3	—	MHz
Equivalent input noise voltage	V _{ni}	R _S =100Ω, B=10Hz to 30kHz	—	4	—	μVrms

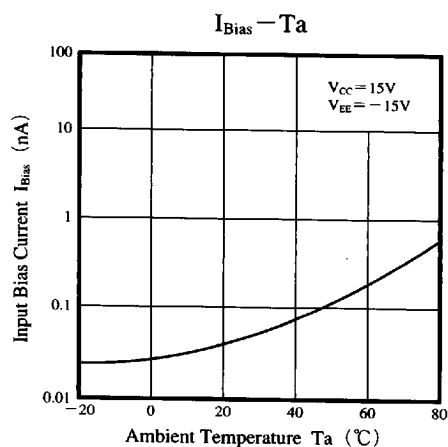
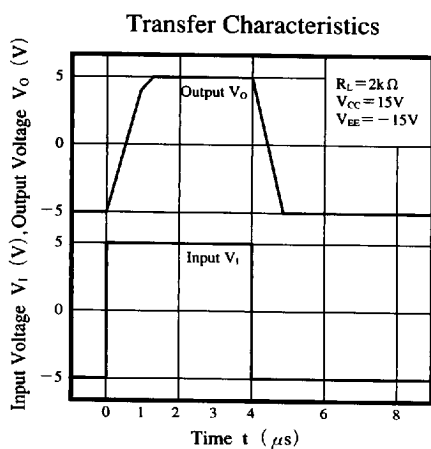
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■ Characteristics Curve

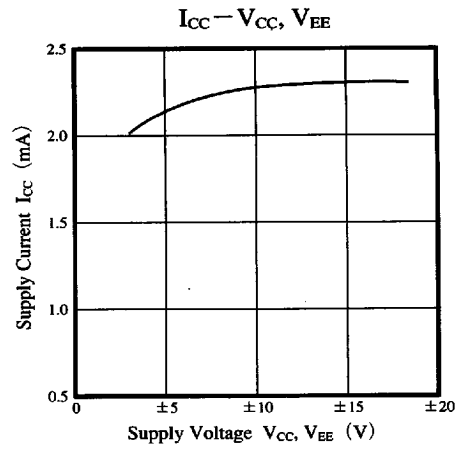
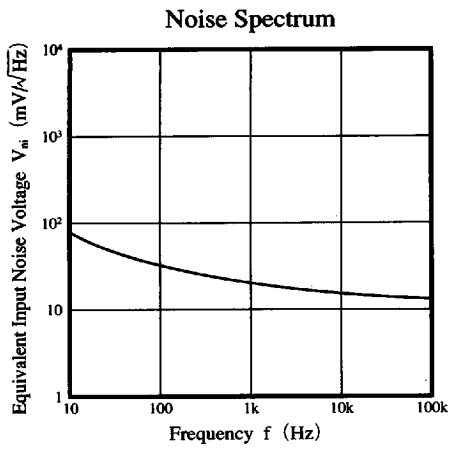


Operational
Amplifiers



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