QUAD Operational Amplifiers LM2902

FEATURES

- Wide range of supply voltages
- Low supply current drain independent of supply voltage
- Low input biasing current
- Low input offset voltage and offset current
- Input common-mode voltage range includes ground
- Differential input voltage range equal to the power supply voltage
- DC voltage gain 100V/mV Typ.
- Internally frequency compensation

SOP-14 Pin Configuration

SOP-14

ORDERING INFORMATION

Device	Package
LM2902GD	SOP-14

DESCRIPTION

The LM2902 consists of four independent, high gain, internally frequency compensated operational amplifiers which were designed specifically to operate from a single power supply over a wide range of voltages. Operation from split power supplies is also possible and the low power supply current drain is independent of the magnitude of the power supply voltage.

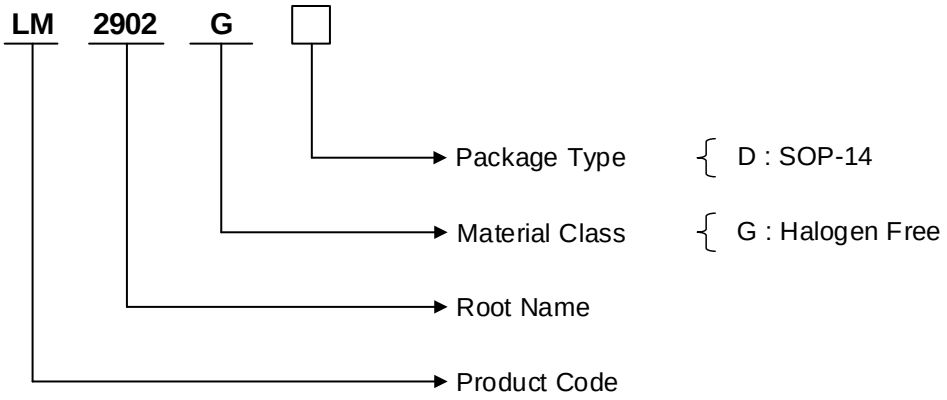
Application areas include transducer amplifiers, DC gain blocks and all the conventional op amp circuits.

ABSOLUTE MAXIMUM RATING

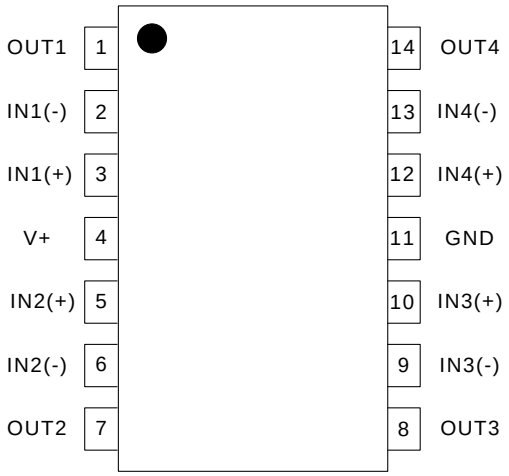
CHARACTERISTIC	SYMBOL	Value	UNIT
Supply Voltage	V_{CC}	40	V
Input Voltage	V_{IN}	-0.3 to +40	V
Operating Temperature Range	T_{OPR}	-40 to +125	℃

ORDERING INFORMATION

Package	Order No.	Description	Supply As	Status
SOP-14	LM2902GD	Quad Operational Amplifiers, Halogen-Free	Reel	Active



PIN CONFIGURATION



SOP-14

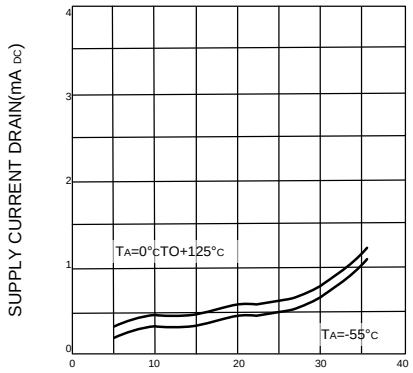
ELECTRICAL CHARACTERISTICS

At specified free-air temperature, V_{CC}=5V (unless otherwise noted)

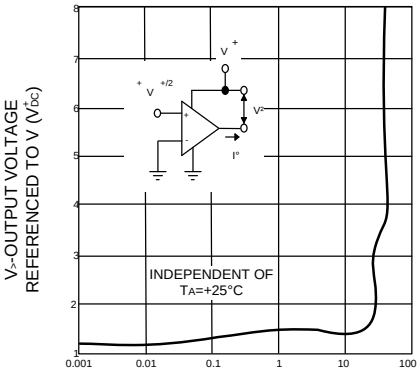
PARAMETER	TEST CONDITIONS*		MIN	TYP	MAX	UNIT
V_{IO} Input offset voltage	V_{CC}=5V to MAX, V_{IC}=V_{ICR} min, V_O=1.4V	25℃		3	7	mV
		Full range			9	
αV_{IO} Average temperature coefficient of input offset voltage		Full range		7		μV/℃
I_{IO} Input offset current	V_O=1.4V	25℃		2	50	nA
		Full range			150	
αI_{IO} Average temperature coefficient of input offset current		Full range		10		pA/℃
I_{IB} Input bias current	V_O=1.4V	25℃		-20	-250	nA
		Full range			-500	
V_{ICR} Common-mode input voltage range	V_{CC}=5V to MAX	25℃	0		VCC-1.5	V
		Full range	0		VCC-2.0	
V_{OH} High-level output voltage	R_L=2kΩ	25℃	VCC-1.5			V
	V_{CC}=MAX, R_L=2kΩ	Full range	26			
	V_{CC}=MAX, R_L=10kΩ	Full range	27	28		
V_{OL} Low-level output voltage	R_L≥10kΩ	Full range		5	20	mV
A_{VD} Large-signal differential voltage amplification	V_{CC}=15V V_O=1V to 11V R_L≥2kΩ	25℃	25	100		V/mV
		Full range	15			
CMRR Common-mode rejection ratio	Vcc = 5 V to MAX, V_{IC} = V_{ICR} min	25℃	65	80		dB
k_{SVR} Supply voltage rejection ratio ($\Delta V_{CC}/\Delta V_{IO}$)	Vcc = 5 V to MAX	25℃	65	100		dB
V_O1/V_O2 Crosstalk attenuation	f=1 kHz to 20 kHz	25℃		120		dB
I_O Output current	V_{CC}=15V, V_{ID}=1V, V_O=0V	25℃	-20	-30		mA
		Full range	-10			
	V_{CC}=15V, V_{ID}=-1V, V_O=15V	25℃	10	20		
		Full range	5			
	V_{ID}= -1 V, V_O= 200mV	25℃	12	30		μA
I_{OS} Short-circuit output current	Vcc at 5 V, GND at -5V,Vo=0	25℃		±40	±60	mA
I_{CC} Supply current (two amplifiers)	Vo-2.5V, No load	Full range		1.5	2.4	mA
	V_{CC} = MAX, Vo = 0.5Vcc, No load	Full range		1.1	3	

TYPICAL PERFORMANCE CHARACTERISTICS

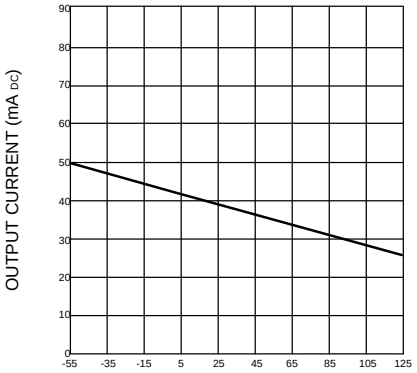
SUPPLY CURRENT



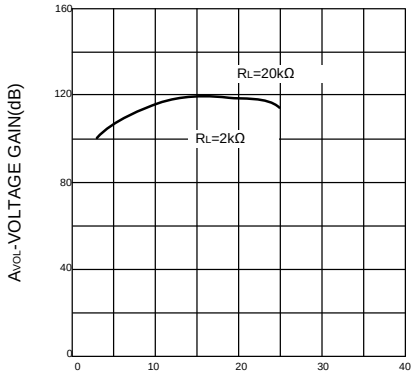
OUTPUT CHARACTERISTICS
CURRENT SOURCING



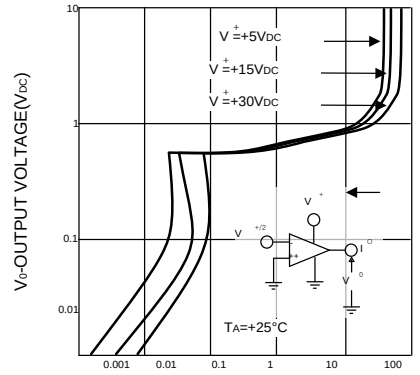
CURRENT LIMITING



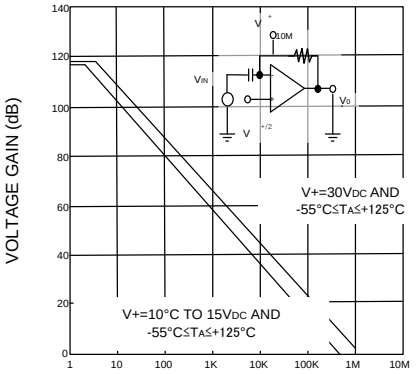
VOLTAGE GAIN



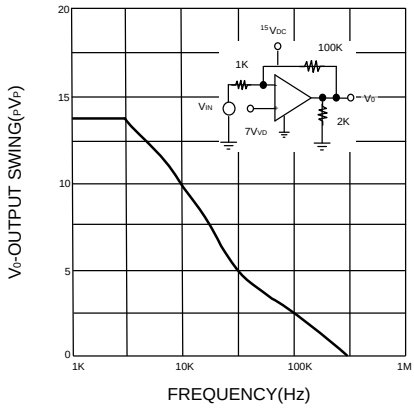
OUTPUT CHARACTERISTICS
CURRENT SINKING



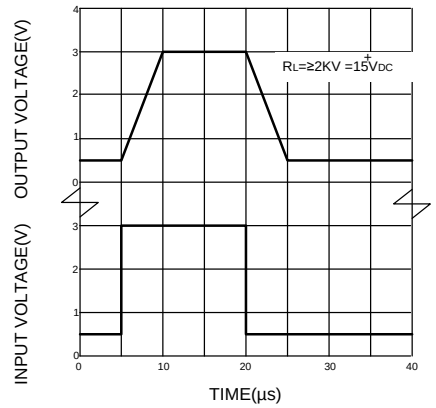
OPEN-LOOP FREQUENCY
RESPONSE



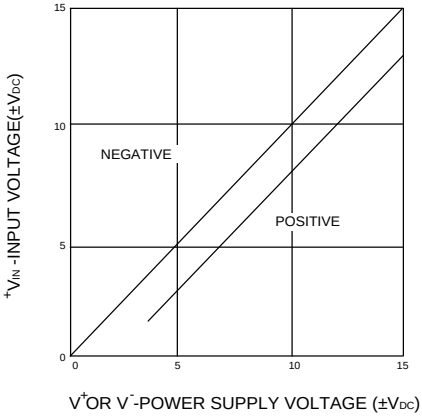
LARGE-SIGNAL FREQUENCY
RESPONSE



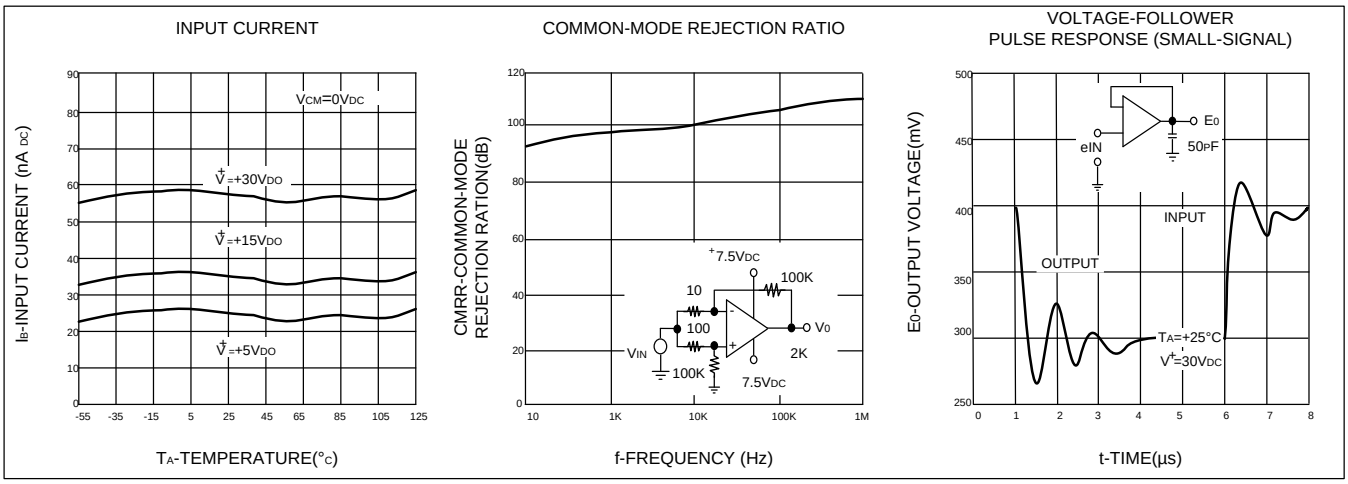
VOLTAGE-FOLLOWER PULSE
RESPONSE



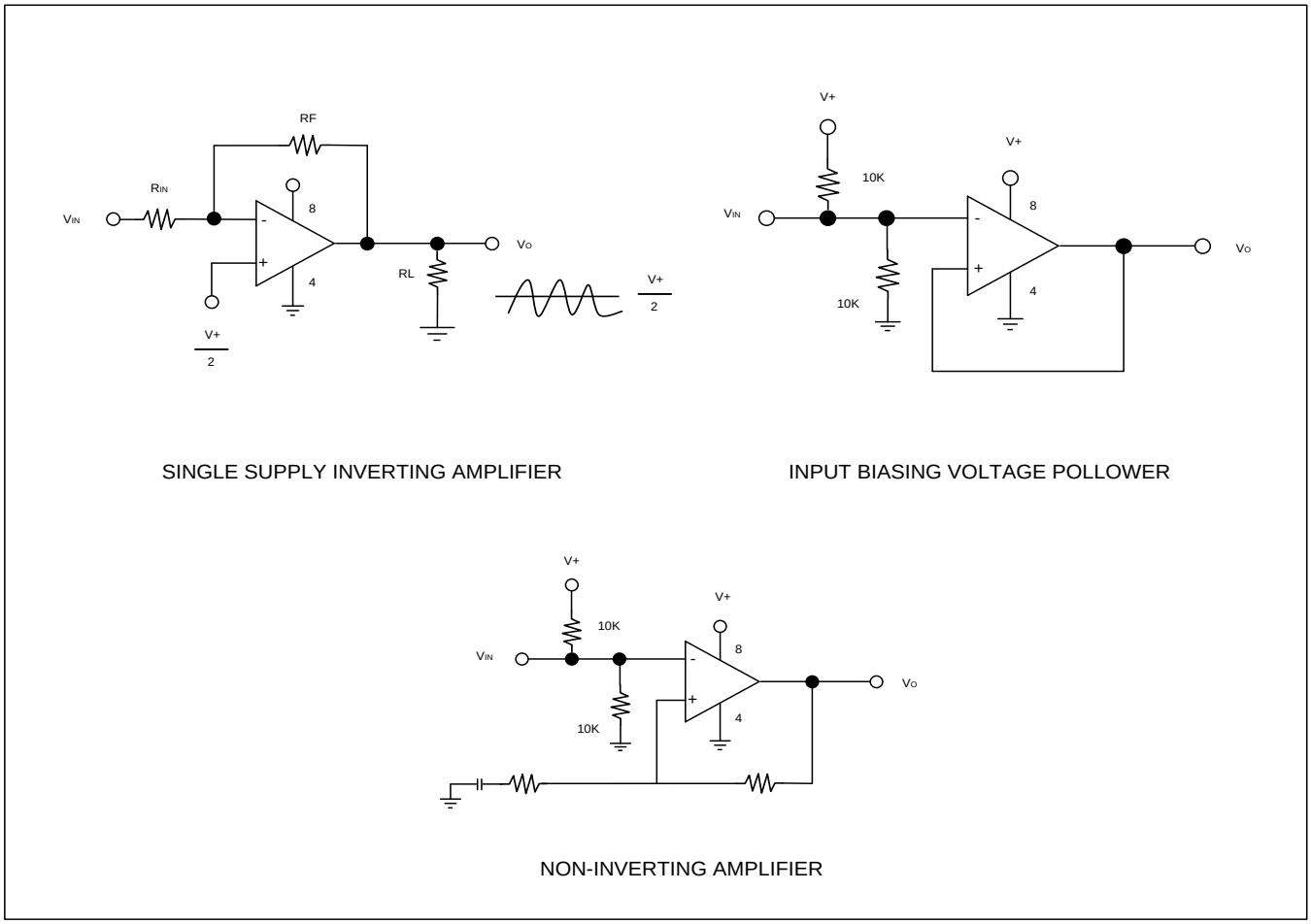
INPUT VOLTAGE RANGE



TYPICAL PERFORMANCE CHARACTERISTICS (CONTINUED)



TYPICAL APPLICATIONS



REVISION NOTICE

The description in this datasheet can be revised without any notice to describe its electrical characteristics properly.