SINGLE-SUPPLY DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM2143 is a single-supply operational amplifier in VSP8.Its input stage of Darlington PNP detects GND level.

There is no crossover distortion in single supply operation when the load is direct-coupled to ground.

■ PACKAGE OUTLINE

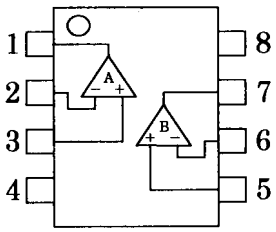

NJM2143R NJM2143RB1

■ FEATURES

- Single-Supply Operation
- Operating Voltage (+3~+20V)
- Low Operating Current (0.7mA typ.)
- Bipolar Technology
- Package Outline VSP8,TVSP8

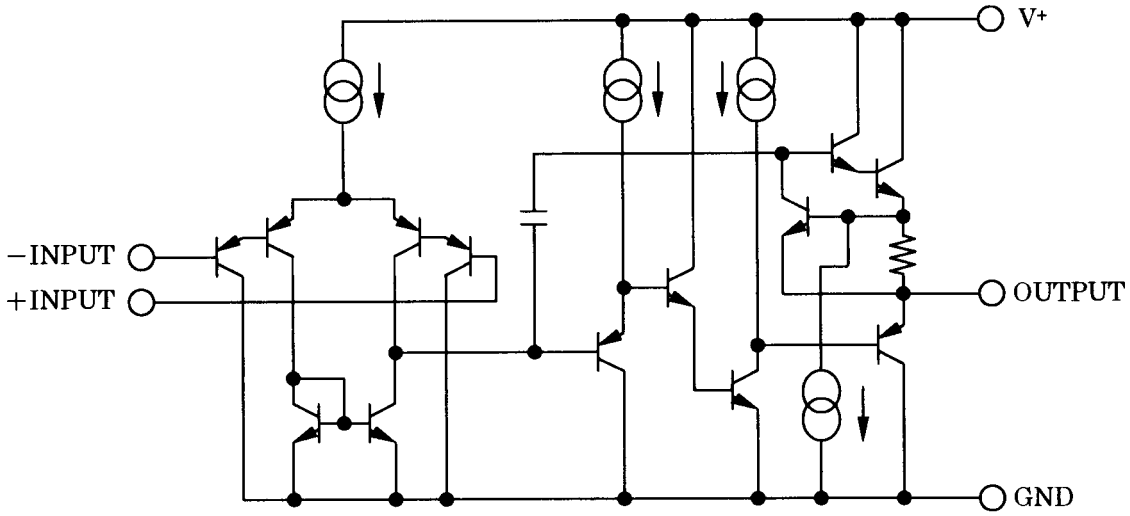
■ PIN CONFIGURATION

(Top View)



PIN FUNCTION
1.A OUTPUT
2.A –INPUT
3.A +INPUT
4.GND
5.B +INPUT
6.B –INPUT
7.B OUTPUT
8.V^+

■ EQUIVALENT CIRCUIT (1/2 Shown)



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25˚C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V^+(V^+/V^-)$	20 (± 10)	V
Differential Input Voltage	V_{ID}	20	V
Input Voltage	V_{IC}	-0.3~+20 (note1)	V
Power Dissipation	P_D	320	mW
Operating Temperature Range	T_{opr}	-40~+85	˚C
Storage Temperature Range	T_{stg}	-50~+125	˚C

(note1) When input voltage is less than +20V, the absolute maximum control voltage is equal to the input voltage.

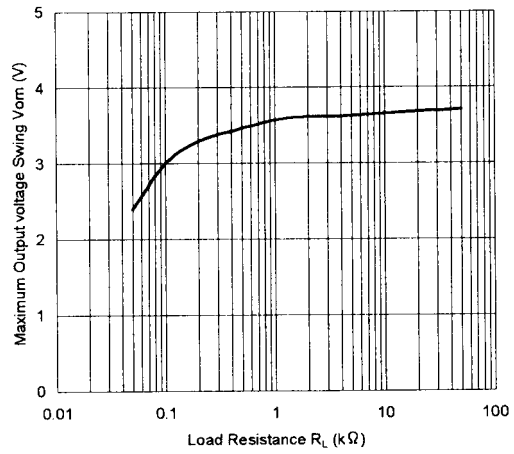
■ ELECTRICAL CHARACTERISTICS

(V^+=5.0V,Ta=25˚C)

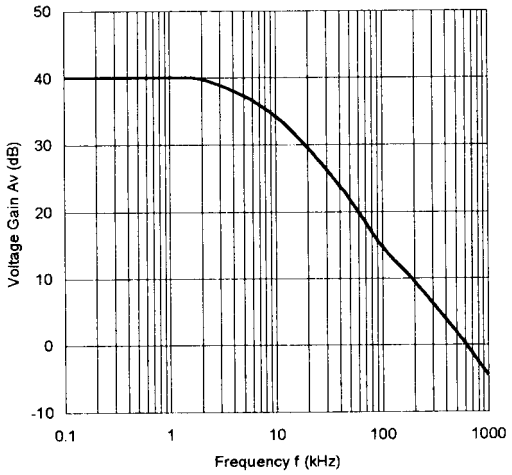
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	R_S=0Ω	-	2	7	mV
Input Offset Current	I_{IO}		-	5	50	nA
Input Bias Current	I_B		-	25	250	nA
Large Signal Voltage Gain	A_V	R_L≥2kΩ	-	100	-	dB
Maximum Output Voltage Swings	V_{OM1}	R_L=2kΩ	3.5	-	-	V_{P-P}
Input Common Mode Voltage Range	V_{ICM}		0~3.5	-	-	V
Common Mode Rejection Ratio	CMRR		-	85	-	dB
Supply Voltage Rejection Ratio	PSRR		-	100	-	dB
Output Source Current	I_{SOURCE}	V_{IN}^+=1V,V_{IN}^-=0V	20	30	-	mA
Output Sink Current	I_{SINK}	V_{IN}^+=0V,V_{IN}^-=1V	8	20	-	mA
Channel Separation	CS		-	120	-	dB
Operating Current	I_{CC}		-	0.7	1.2	mA
Slew Rate	SR		-	0.5	-	V/μs
Gain Bandwidth Product	GB		-	0.6	-	MHz

■ TYPICAL CHARACTERISTICS

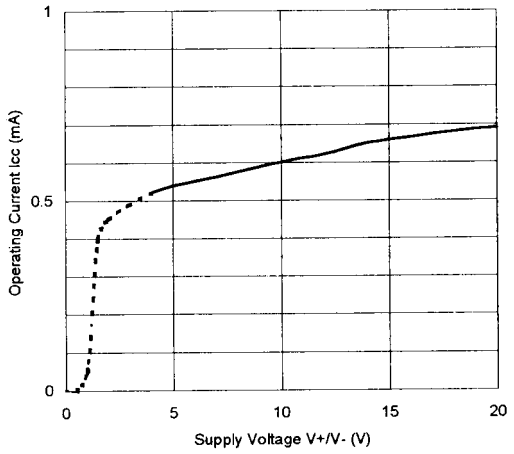
Maximum Output Voltage Swing vs. Load Resistance
(V+=5V, Ta=25°C)



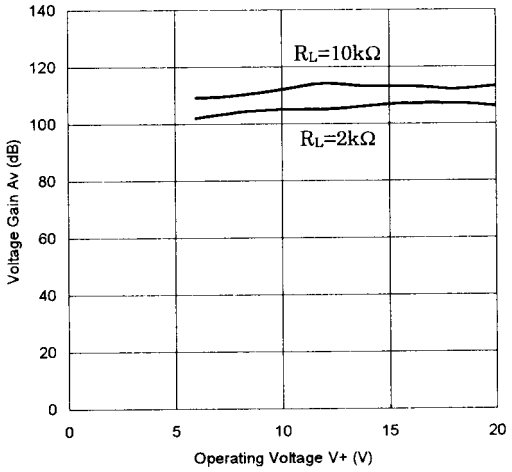
Voltage Gain vs. Frequency



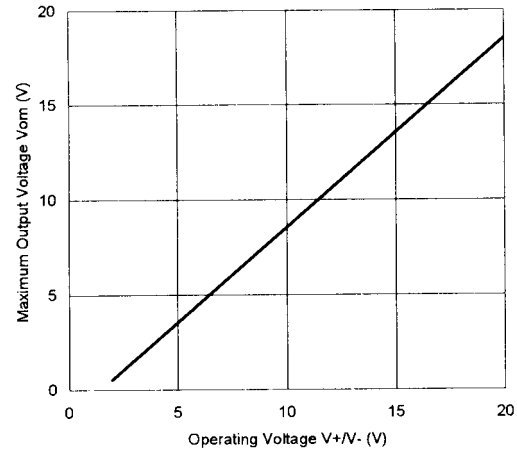
Operating Current vs. Operating Voltage
(Ta=25°C)



Voltage Gain vs. Operating Voltage

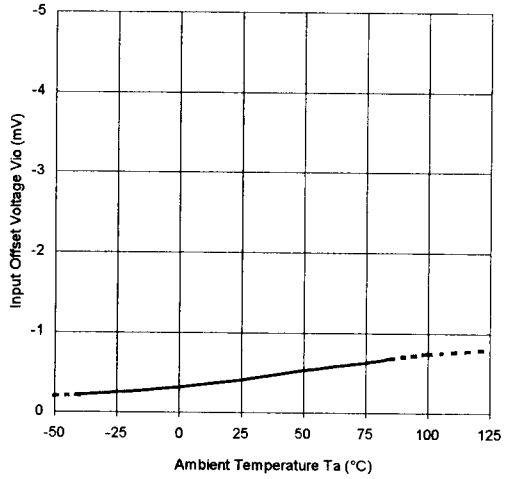


Maximum Output Voltage vs. Operating Voltage
(R_L=2kΩ,Ta=25°C)

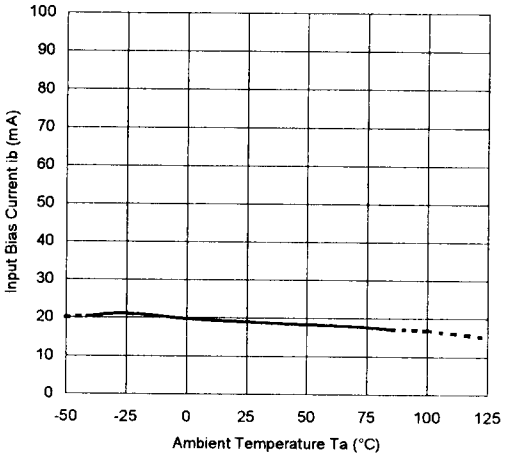


■ TYPICAL CHARACTERISTICS

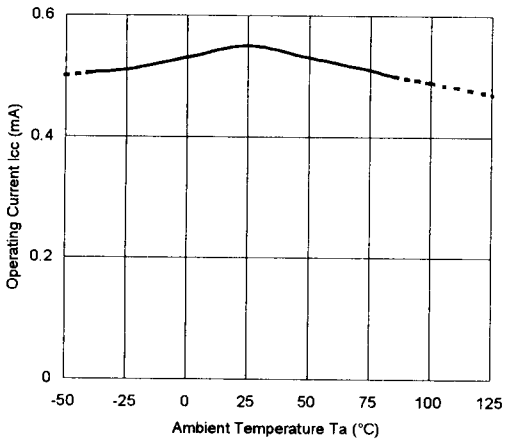
Input Offset Voltage vs. Temperature
(V+=5V)



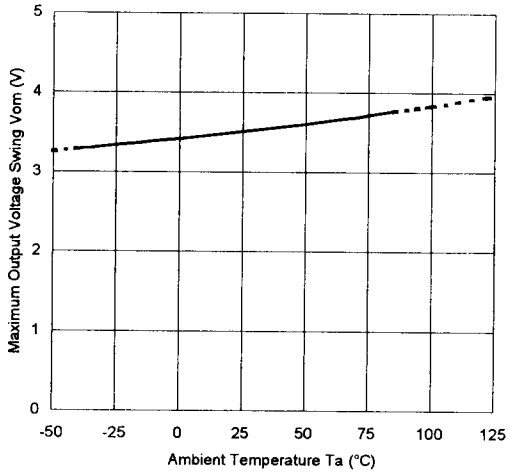
Input Bias Current vs. Temperature
(V+=5V)



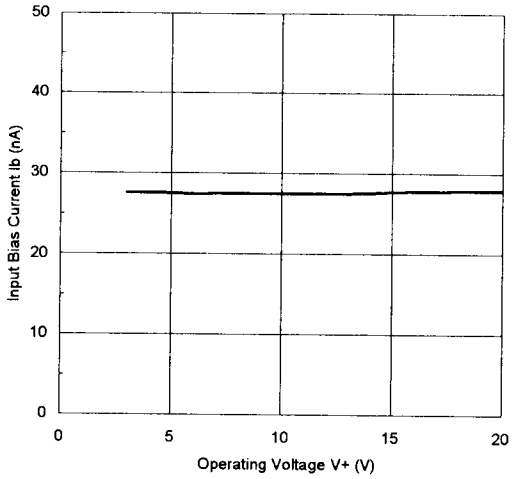
Operating Currnt vs. Temperature
(V+=5V)



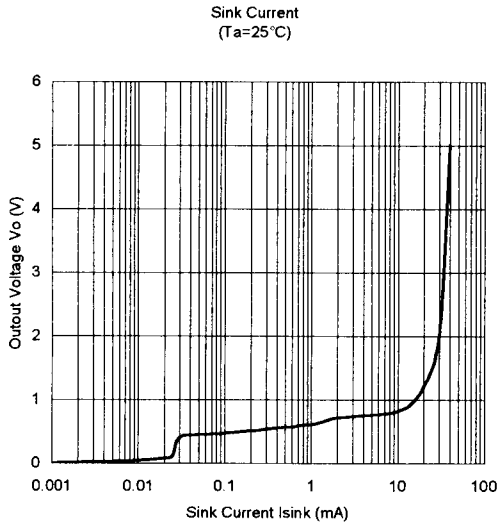
Maximum Output Voltage Swing vs. Temperature
(V+=5V, R_L=2kΩ)

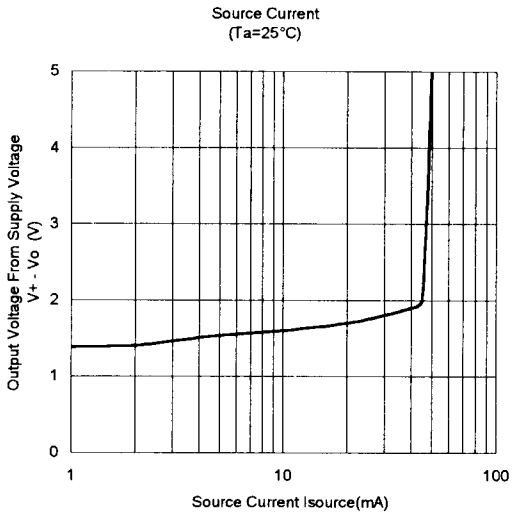


Input Bias Current vs. Operating Voltage
(Ta=25°C)



■ TYPICAL CHARACTERISTICS





[CAUTION]
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