

Single Supply, Rail-to-Rail Output Dual Operational Amplifier

■ FEATURES

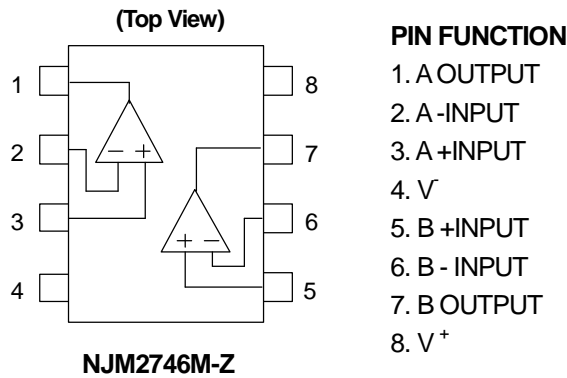
- Operating Temperature -40°C to 125°C
- Operating Voltage 2.5V to 14V
- Rail-to-Rail Output $V_{\text{OH}}=4.9\text{V Typ.}$ (at $V^+=5\text{V}$, $R_L=5\text{k}\Omega$)
 $V_{\text{OL}}=0.1\text{V Typ.}$ (at $V^+=5\text{V}$, $R_L=5\text{k}\Omega$)
- Offset Voltage 1mV Typ.
- Slew Rate $3.5\text{V}/\mu\text{s Typ.}$
- Low Distortion $0.001\% \text{ Typ.}$ (at $V^+=5\text{V}$, $f=1\text{kHz}$)
- Low Input Voltage Noise $10\text{nV}/\sqrt{\text{Hz Typ.}}$ (at $f=1\text{kHz}$)
- Bipolar Technology
- Package Outline DMP8

■ PACKAGE INFORMATION



NJM2746M-Z (DMP8)

■ PIN CONFIGURATION



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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATING		UNIT
Supply Voltage	$V^+ - V^-$	15		V
Common Mode Input Voltage Range	V_{ICM}	0 to 15	(Note1)	V
Differential Input Voltage Range	V_{ID}	±15	(Note1)	V
Power Dissipation	P_D	DMP8	460 (Note2)	mW
Operating Temperature Range	T_{opr}	-40 to +115		°C
Storage Temperature Range	T_{stg}	-40 to +150		°C

(Note1) For supply voltage less than 15V, the absolute maximum input voltage is equal to the supply voltage.

(Note2) Mounted on the EIA/JEDEC standard board (76.2×114.3×1.6mm, 2 layer, FR-4).

■ ELECTRICAL CHARACTERISTICS

●DC CHARACTERISTICS ($V^+=5V$, $V^-=0V$, Ta=25°C, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I_{CC}	$R_L=\infty$, $V_{IN}=2.5V$, No signal	-	4	5	mA
		$R_L=\infty$, $V_{IN}=2.5V$, No signal, Ta = -40 to 125 °C	-	-	5.5	
Input Offset Voltage	V_{IO}	$R_S \leq 10k\Omega$	-	1	6	mV
		$R_S \leq 10k\Omega$, Ta = -40 to 125 °C	-	-	12	
Input Bias Current	I_B		-	100	350	nA
		Ta = -40 to 125 °C	-	-	430	
Input Offset Current	I_{IO}		-	5	100	nA
		Ta = -40 to 105 °C	-	-	110	
Voltage Gain	A_v	$R_L \geq 10k\Omega$ to 2.5V, $V_o=0.5V$ to 4.5V	65	85	-	dB
		$R_L \geq 10k\Omega$ to 2.5V, $V_o=0.5V$ to 4.5V, Ta = -40 to 125 °C	65	-	-	
Common Mode Rejection Ratio	CMR	$0V \leq V_{ICM} \leq 4V$	60	75	-	dB
		$0V \leq V_{ICM} \leq 3.5V$, Ta = -40 to 125 °C	60	-	-	
Supply Voltage Rejection Ratio	SVR	$V^+ = 2.5V$ to 14V	60	80	-	dB
		$V^+ = 2.5V$ to 14V, Ta = -40 to 125 °C	60	-	-	
Maximum Output Voltage1	V_{OH1}	$R_L \geq 5k\Omega$ to 2.5V	4.75	4.9	-	V
		$R_L \geq 5k\Omega$ to 2.5V, Ta = -40 to 125 °C	4.7	-	-	
	V_{OL1}	$R_L \geq 5k\Omega$ to 2.5V	-	0.1	0.25	V
		$R_L \geq 5k\Omega$ to 2.5V, Ta = -40 to 125 °C	-	-	0.3	
Maximum Output Voltage2	V_{OH2}	$R_L \geq 5k\Omega$ to 0V	4.75	4.9	-	V
		$R_L \geq 5k\Omega$ to 0V, Ta = -40 to 125 °C	4.7	-	-	
	V_{OL2}	$R_L \geq 5k\Omega$ to 0V	-	0.1	0.25	V
		$R_L \geq 5k\Omega$ to 0V, Ta = -40 to 105 °C	-	-	0.3	
Common Mode Input Voltage Range	V_{ICM}	CMR ≥ 60dB	0	-	4	V
		CMR ≥ 60dB, Ta = -40 to 125 °C	0	-	3.5	

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●AC CHARACTERISTICS ($V^+=5V$, $V^-=0V$, $T_a=25^\circ C$, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gain Bandwidth Product	GB	$f=1MHz$	-	10	-	MHz
Phase Margin	Φ_M	$R_L=10k\Omega$, $C_L=10pF$	-	75	-	deg
Equivalent Input Noise Voltage	V_{NI}	$f=1kHz$, $V_{CM}=2.5V$	-	10	-	nV/ \sqrt{Hz}
Total Harmonic Distortion	THD	$f=1kHz$, $A_V=+2$, $R_L=10k\Omega$ to $2.5V$, $V_o=1.5V_{rms}$	-	0.001	-	%
Channel Separation	CS	$f=1kHz$, $R_L=10k\Omega$ to $2.5V$, $V_o=1.5V_{rms}$	-	120	-	dB

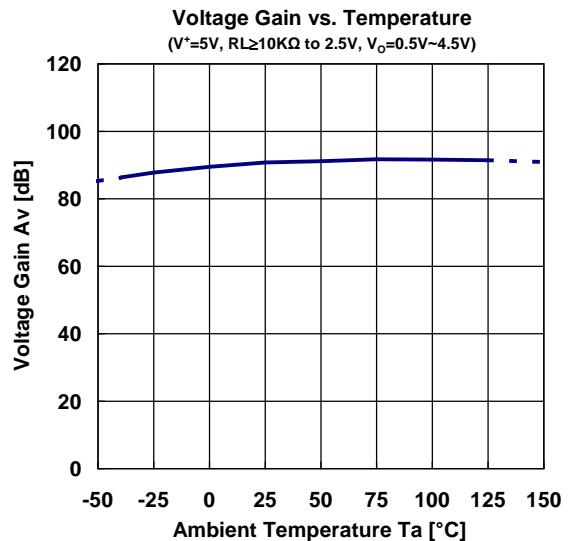
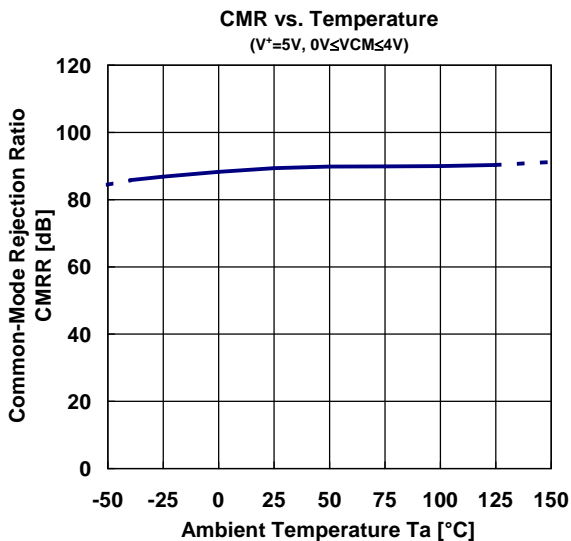
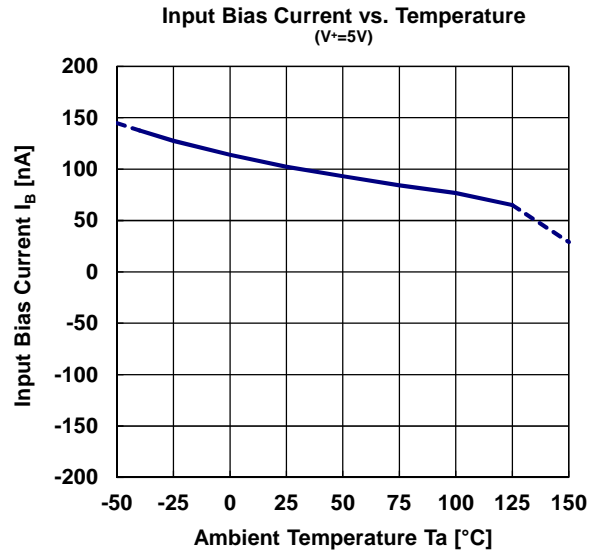
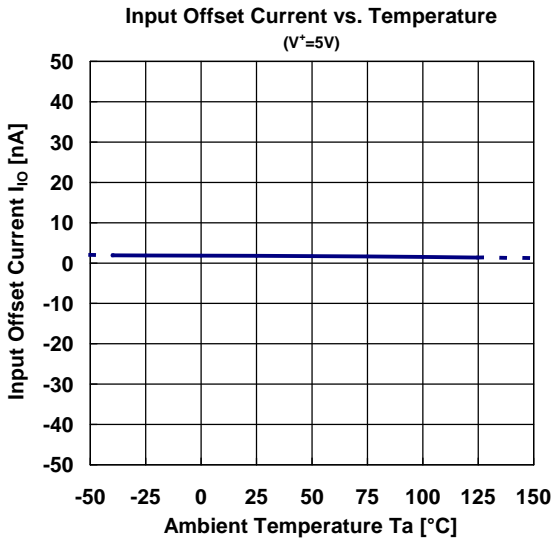
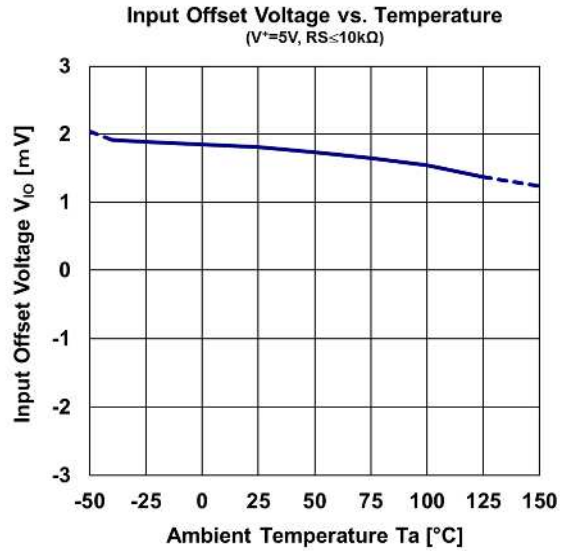
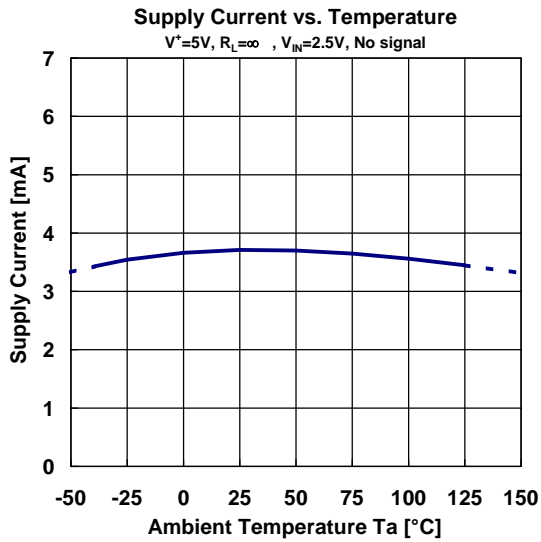
●AC CHARACTERISTICS ($V^+=5V$, $V^-=0V$, $T_a=25^\circ C$, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate (Note3)	SR	$A_V=1$, $V_{IN}=2V_{pp}$, $R_L=10k\Omega$ to $2.5V$, $C_L=10pF$ to $2.5V$	-	3.5	-	V/ μs

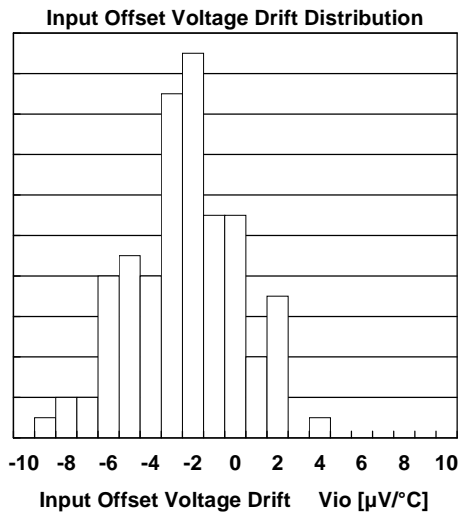
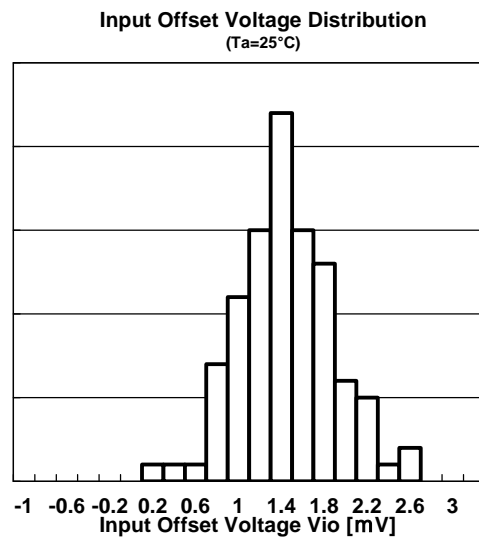
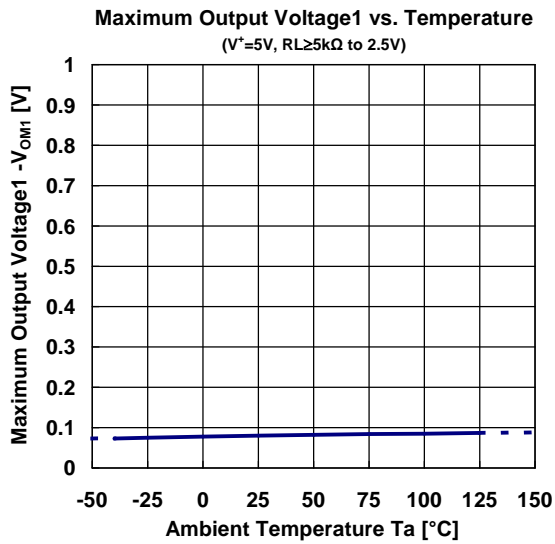
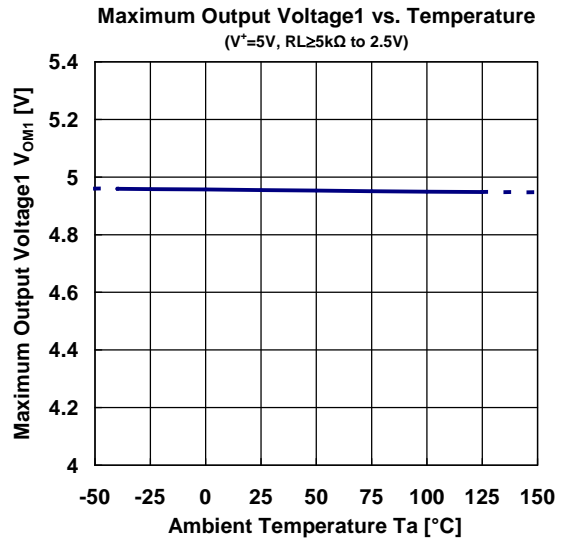
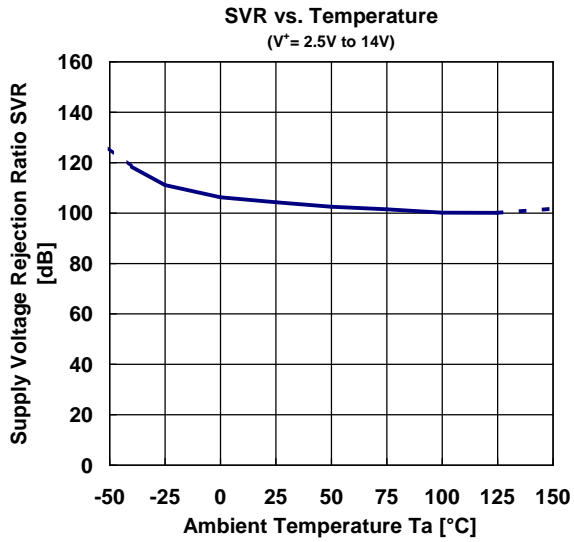
(Note3) Number specified is the slower of the positive and negative slew rates.

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■ TYPICAL CHARACTERISTICS

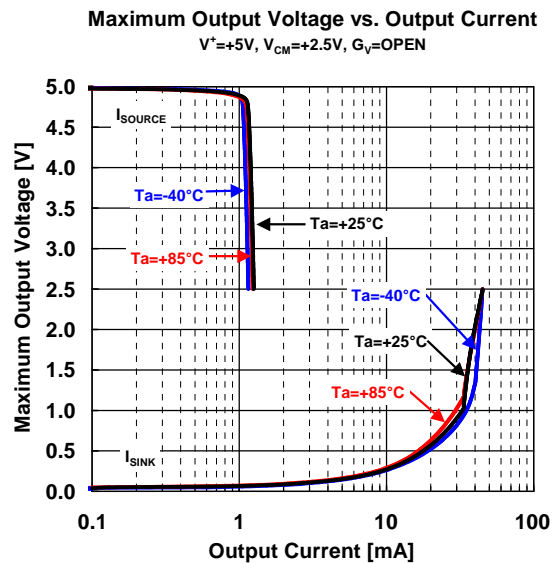
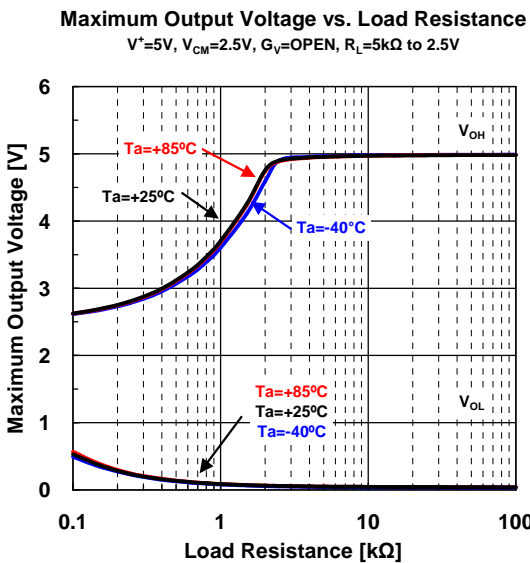
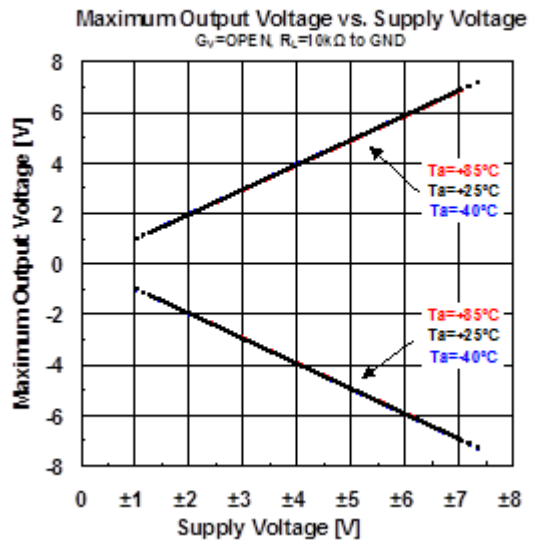
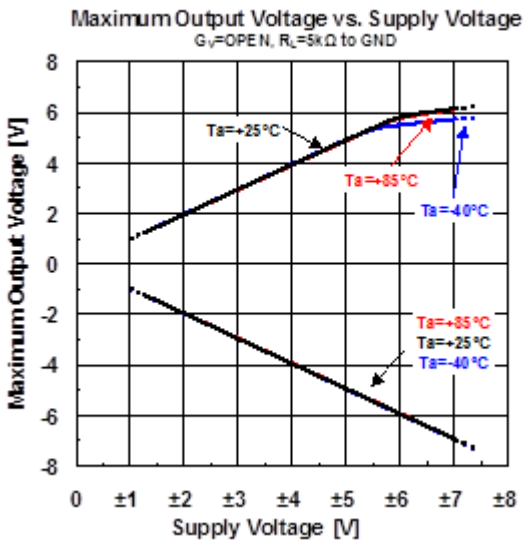
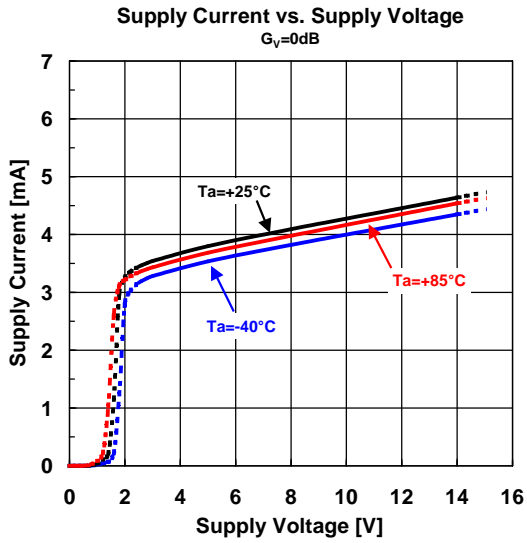


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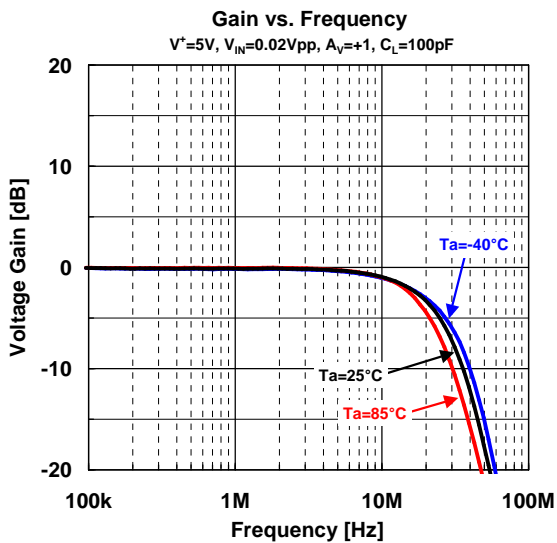
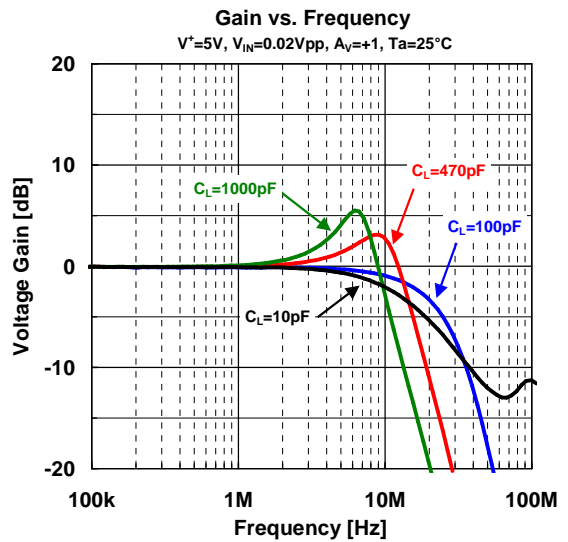
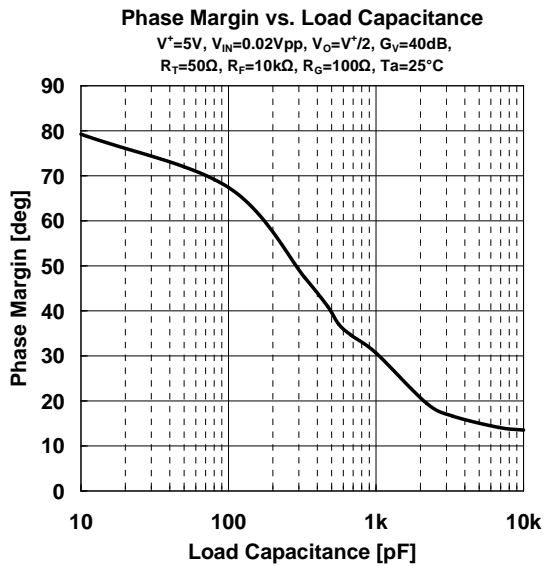
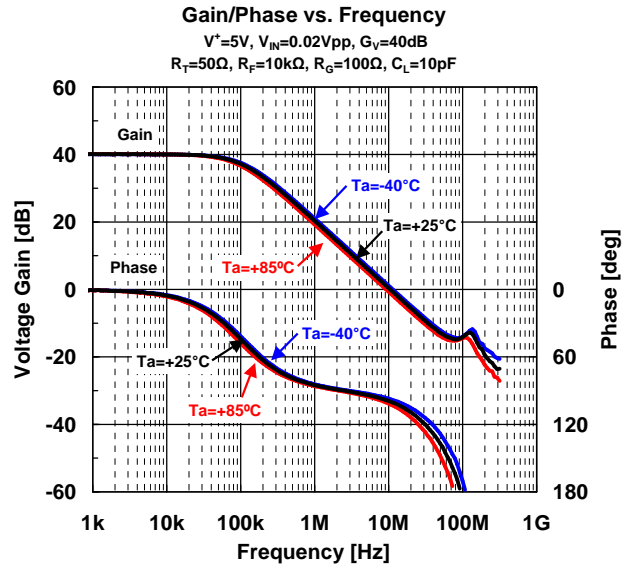
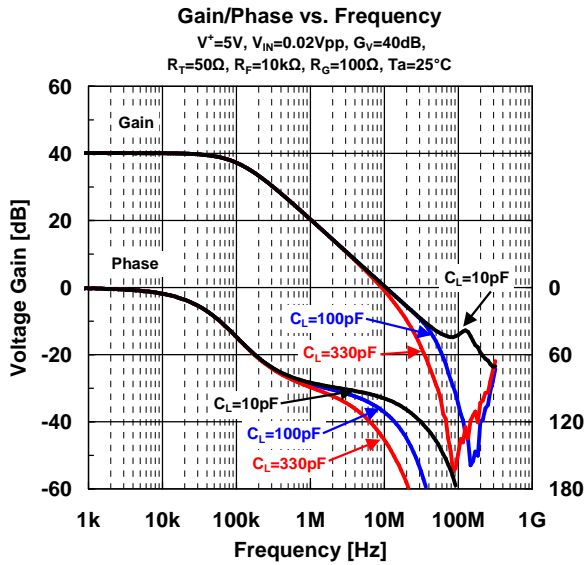


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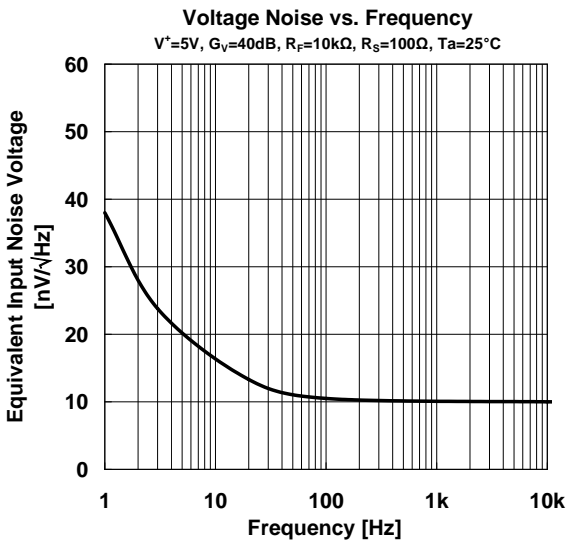
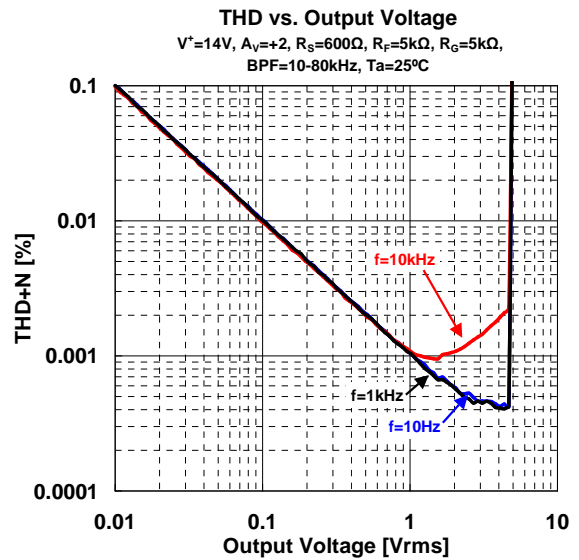
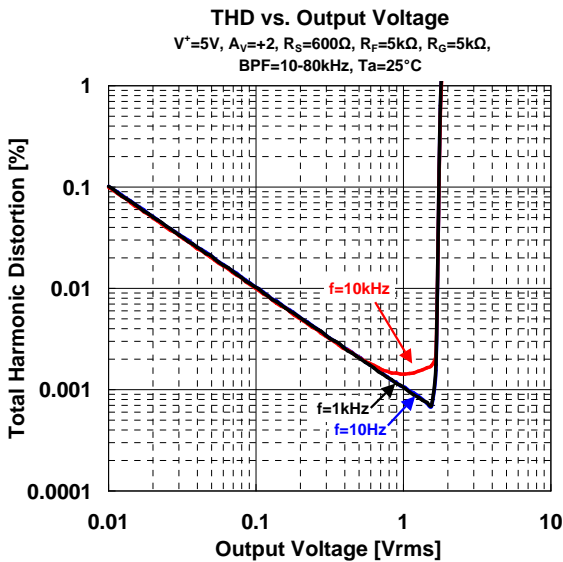
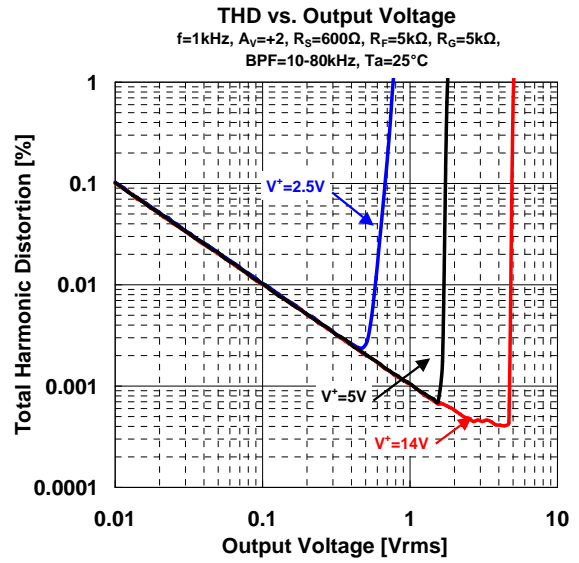
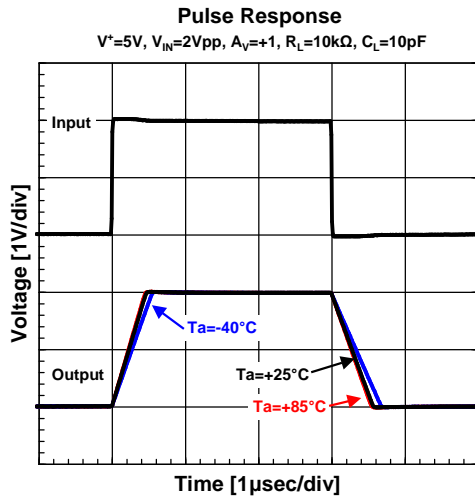


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