

Single-Supply High Output Current Single Operational Amplifier

■ GENERAL DESCRIPTION

The NJM2743 is a high gain, high output current single operational amplifier capable of driving 70mA.

It is suitable for audio section of portable sets, PCs, DVCs, DSCs and any General-purpose use.

■ PACKAGE OUTLINE

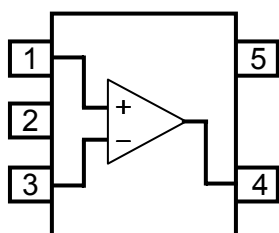


NJM2743F

■ FEATURES

- Operating Voltage : 3V to 15V
- High Output Current : $V_{OH} \geq 3.2V$ Typ. (at $V^+ = 5V$, $I_{SOURCE} = 70mA$)
: $V_{OL} \leq 1V$ Typ. (at $V^+ = 5V$, $I_{SINK} = 70mA$)
- Offset Voltage : 2mV Typ
- Slew Rate : $0.8V/\mu s$ Typ. (at $V^+ = 5V$, $R_L = 2k\Omega$)
- Low THD : 0.0015% Typ. (at $V^+ = 5V$, $R_L = 2k\Omega$, $f = 1kHz$)
- Bipolar Technology
- Package Outline : MTP5

■ PIN CONFIGURATION



NJM2743F
(Top View)

PIN FUNCTION

1. +INPUT
2. GND
3. -INPUT
4. OUTPUT
5. V^+

NJM2743

■ ABSOLUTE MAXIMUM RATINGS

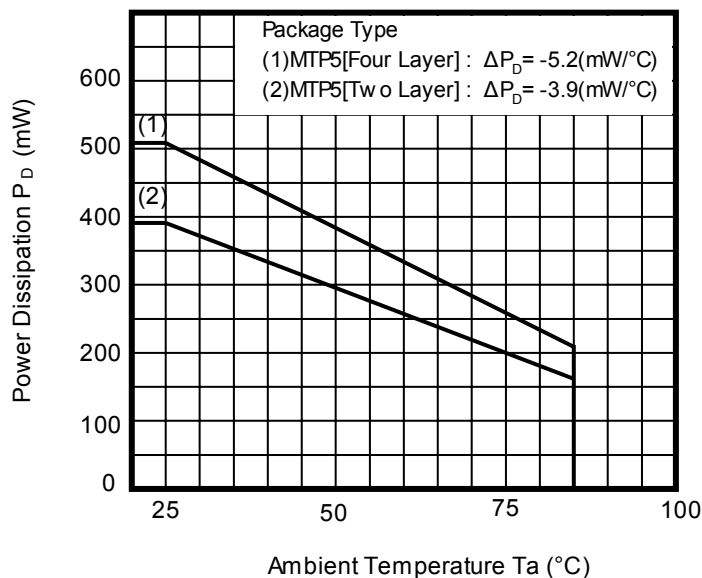
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	18(or ± 9)	V
Common Mode Input Voltage Range	V_{ICM}	-0.3 to +18 (Note 1)	V
Differential Input Voltage Range	V_{ID}	± 18	V
Power Dissipation	P_D	200 [MTP5] 390 [MTP5] (Note 2) 390 [MTP5] (Note 3)	mW
Output Current	I_O	± 75 [MTP5]	mA
Operating Temperature Range	T_{opr}	-40 to +85	$^{\circ}C$
Storage Temperature Range	T_{stg}	-40 to +125	$^{\circ}C$

(Note 1) For supply voltage less than 18V, the absolute maximum input voltage is equal to the supply voltage.

(Note 2) On the PCB " EIA/JEDEC (76.2x11.43x1.6mm, two layers, FR-4) "

(Note 3) On the PCB " EIA/JEDEC (76.2x11.43x1.6mm, four layers, FR-4) "

Power Dissipation vs. Ambient Temperature



(Note 4)

Please do not exceed "Power Dissipation (P_D)" the power dissipation in IC is absolutely indicated to be in the maximum rating.

See the figure "Power Dissipation vs. Ambient Temperature" for information on temperature derating of this device.

■ OPERATING VOLTAGE ($T_a=25^{\circ}C$)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	3 to 15	V

■ ELECTRICAL CHARACTERISTICS

●DC CHARACTERISTICS

($V^+=5V, T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I_{CC}	$R_L=\infty, V_{IN}=2.5V,$ No Signal Apply	-	2	2.8	mA
Input Offset Voltage	V_{IO}	$R_S=0\Omega$	-	2	5	mV
Input Bias Current	I_B		-	100	500	nA
Input Offset Current	I_{IO}		-	5	100	nA
Large Signal Voltage Gain	A_V	$R_L \geq 2k\Omega$ to 2.5V $V_O=1.5V$ to 3.5V	88	100	-	dB
Common Mode Rejection Ratio	CMR	$0V \leq V_{cm} \leq 3V$	80	90	-	dB
Supply Voltage Rejection Ratio	SVR	$V^+=3V$ to 15V	80	90	-	dB
Output Voltage1	V_{OH1}	$R_L \geq 2k\Omega$ to 2.5V	3.5	4.3	-	V
	V_{OL1}	$R_L \geq 2k\Omega$ to 2.5V	-	0.65	0.9	V
Output Voltage2	V_{OH2}	$I_{SOURCE}=70mA$	3.2	4.2	-	V
	V_{OL2}	$I_{SINK}=70mA$	-	0.85	1	V
Input Common Mode Voltage Range	V_{ICM}	CMR $\geq 80dB$	0	-	3	V

●AC CHARACTERISTICS

($V^+=5V, T_a=25^\circ C$)

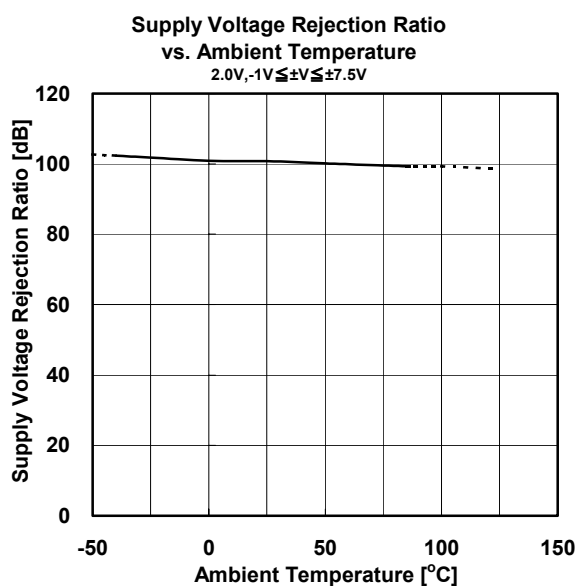
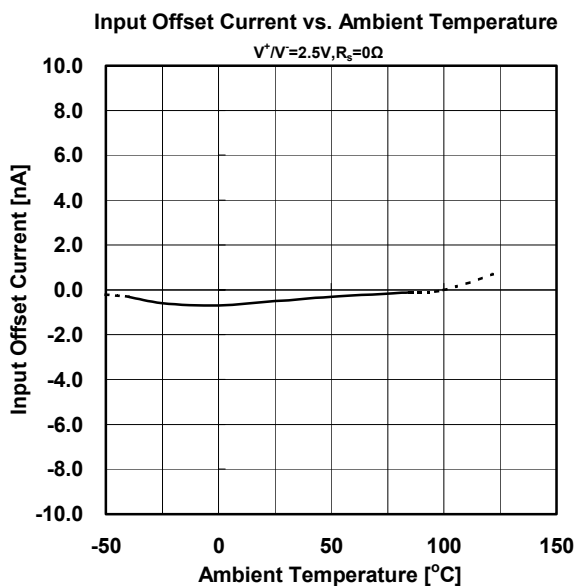
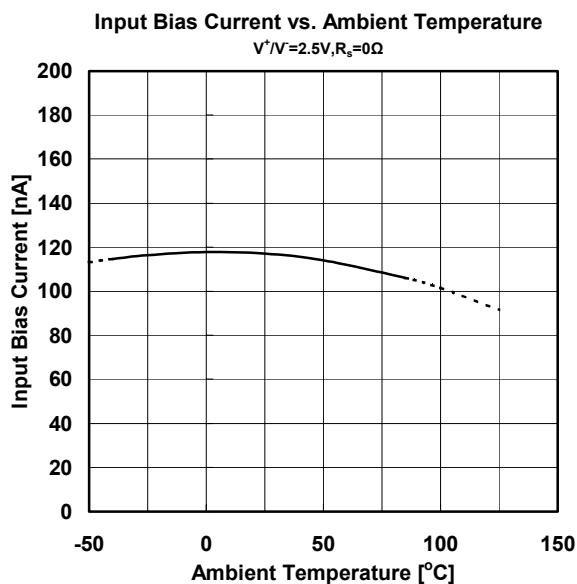
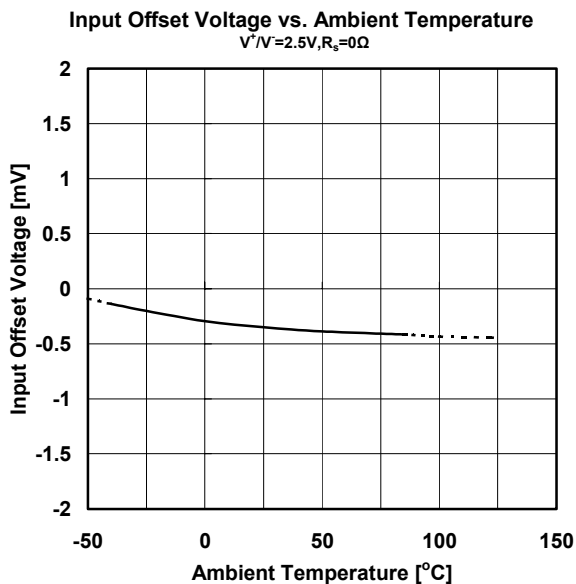
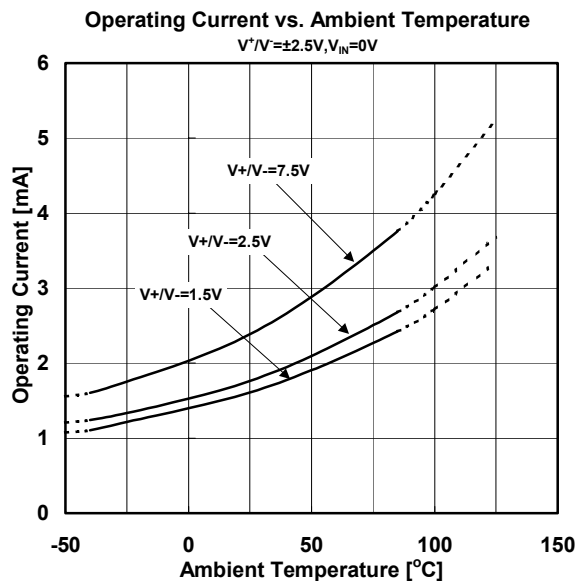
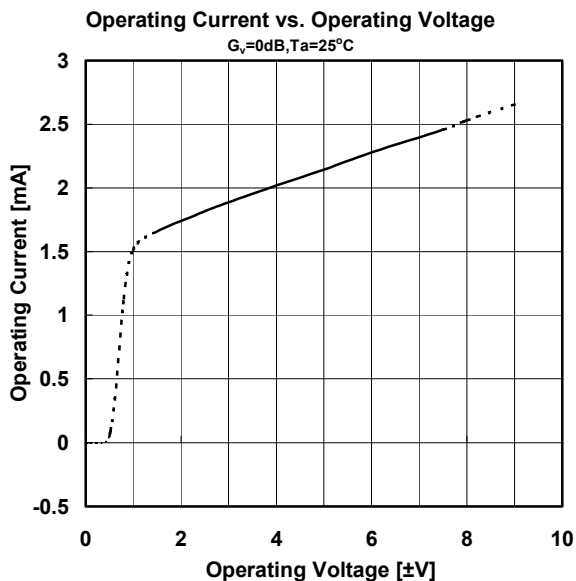
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Unity Gain Bandwidth	GB	$R_L=2k\Omega$ to 2.5V	-	0.8	-	MHz
Phase Margin	Φ_M	$R_L=2k\Omega$ to 2.5V, $C_L=10pF$	-	60	-	Deg
Equivalent Input Noise Voltage	V_{NI}	$f=1kHz, V_{CM}=2.5V$	-	22	-	nV/ \sqrt{Hz}
Total Harmonic Distortion	THD	$f=1kHz, A_V=+1$ $R_L=2k\Omega$ to 2.5V, $V_O=0.35V_{rms}$	-	0.0015	-	%

●AC CHARACTERISTICS

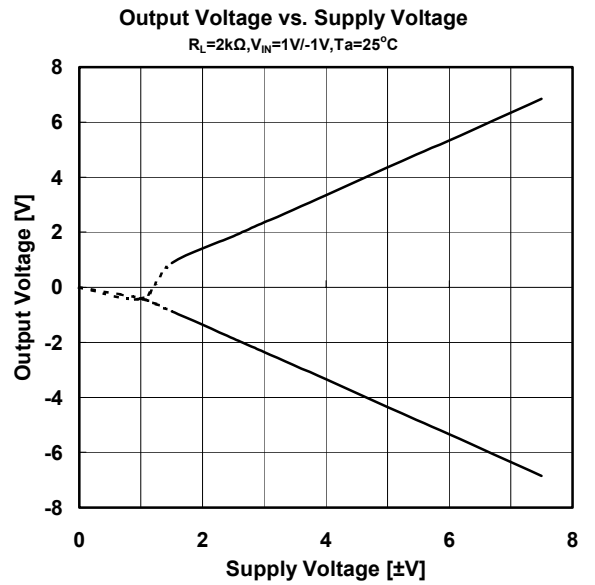
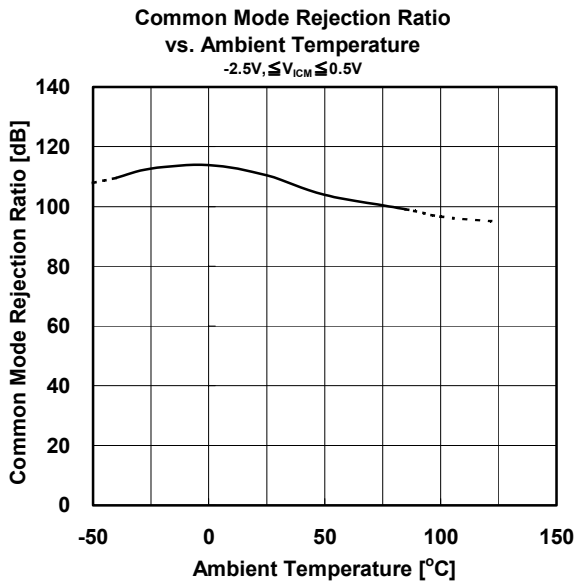
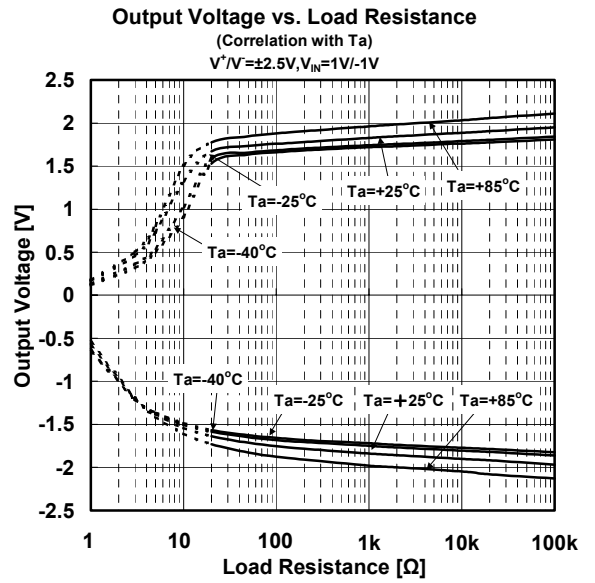
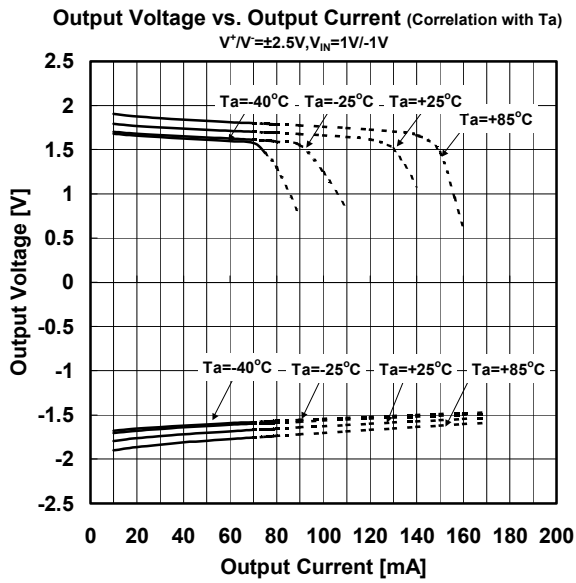
($V^+=5V, T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate	SR	$A_V=1, V_{IN}=1V_{pp}$ $R_L=2k\Omega$ to 2.5V $C_L=10pF$	-	0.85	-	V/ μs

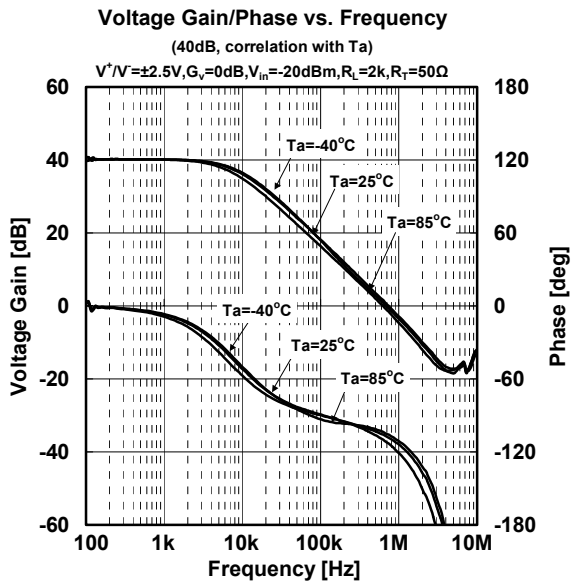
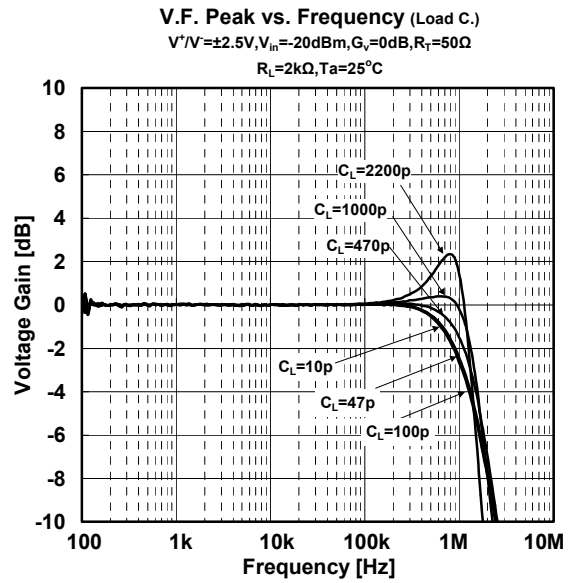
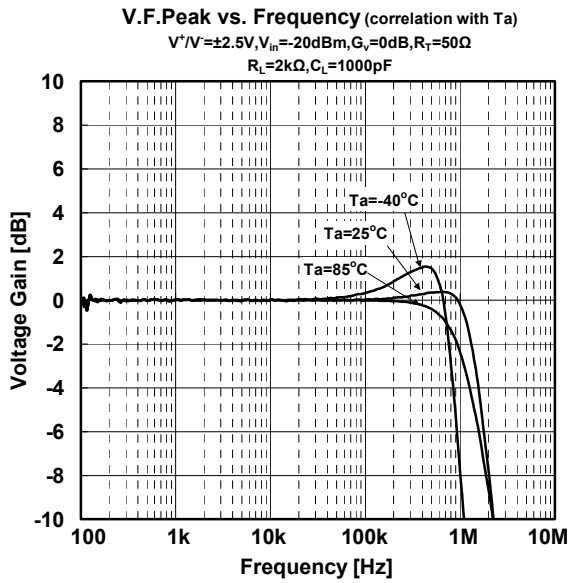
■ Typical Characteristics



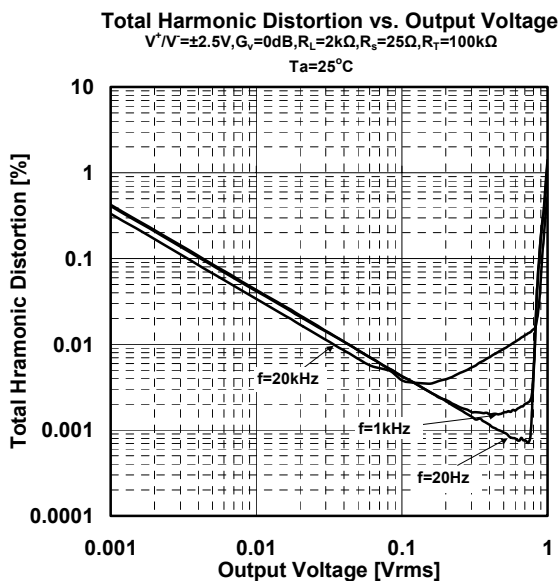
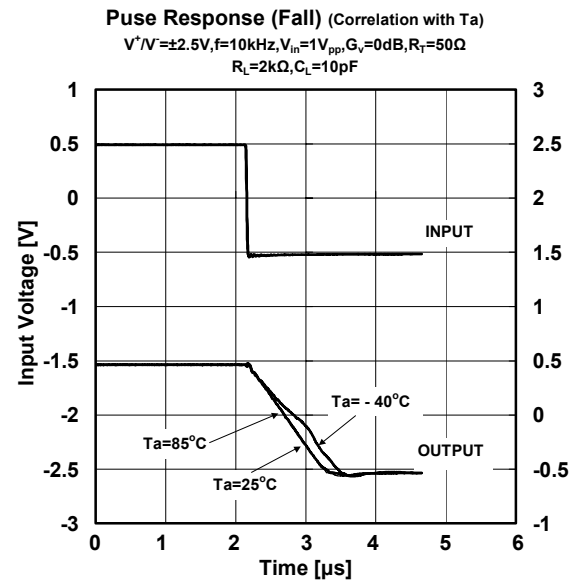
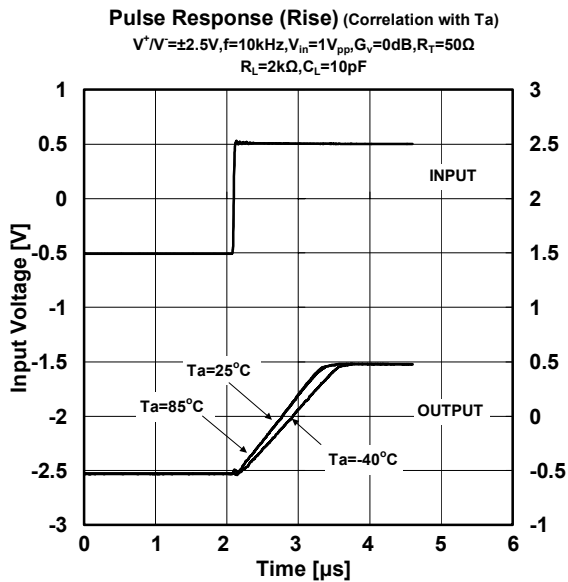
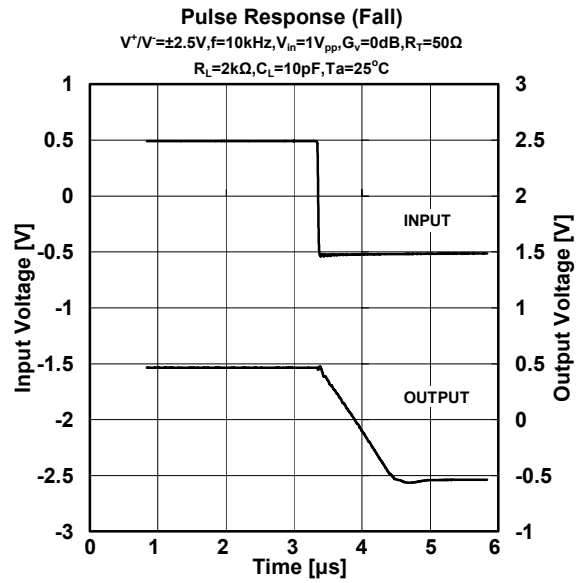
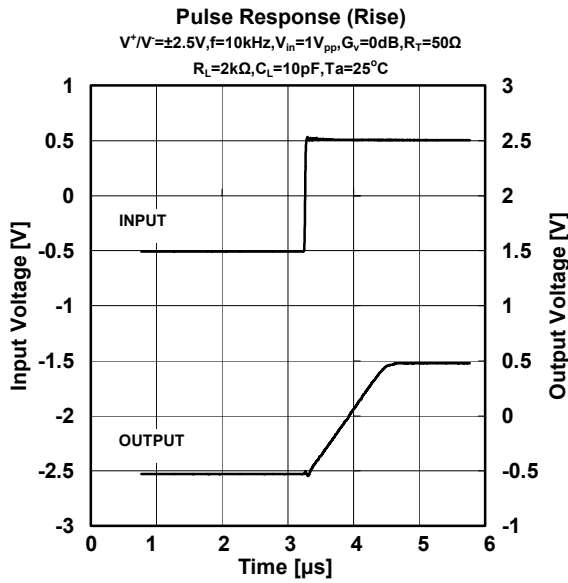
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