

Quad Boost Amplifier

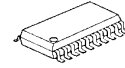
■ GENERAL DESCRIPTION

The **NJM2792** is a quad boost amplifier designed for car audio system. It expands the frequency characteristics by high slew rate.

It can swing 14V peak-to-peak output voltage at 9V. It consists of four channel non-inverting amplifier with the gain of 8dB.

It is suitable for car audio system and other boost amplifier system.

■ PACKAGE OUTLINE

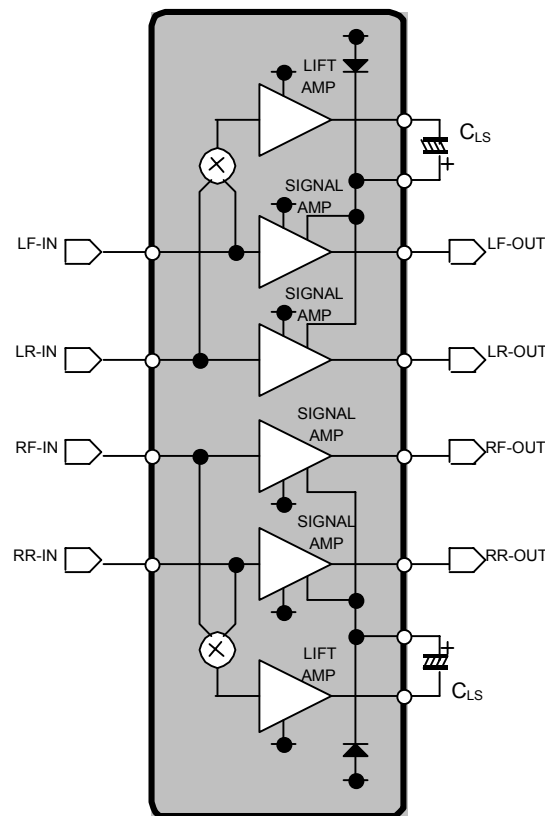


NJM2792V

■ FEATURES

- Operating Voltage (6 to 11V)
- Operating Current (12mA typ.)
- Boost output Function ($V_o=14V_{pp}:@V^+=9V$)
- Maximum Output Voltage (4.5Vrms typ., @ f=100kHz)
- Supply Voltage Rejection Ratio (50dB typ.)
- Total Harmonic Distortion (0.003% typ.)
- Noise Output Voltage (5 μ Vrms typ.)
- Bipolar Technology
- Package Outline SSOP20

■ BLOCK DIAGRAM



■PIN CONFIGURATION

1	L-GND	L-CIN	20
2	L-COUT	RL-OUT	19
3	FL-OUT	RL-FB	18
4	FL-FB	RL-IN	17
5	FL-IN	V+	16
6	REF	RR-IN	15
7	FR-IN	RR-FB	14
8	FR-FB	RR-OUT	13
9	FR-OUT	R-CIN	12
10	R-COUT	R-GND	11

No.	Symbol	Function	No.	Symbol	Function
1	L-GND	Ground for Left Channel	11	R-GND	Ground for Right Channel
2	L-COUT	Capacitor for - Level Shift Left Channel	12	R-CIN	Capacitor for + Level Shift Right Channel
3	FL-OUT	Output for Front Left Channel	13	RR-OUT	Output for Rear Right Channel
4	FL-FB	- Input for Front Left Channel	14	RR-FB	- Input for Rear Right Channel
5	FL-IN	+ Input for Front Left Channel	15	RR-IN	+ Input for Rear Right Channel
6	REF	Reference Voltage	16	V+	Power Supply
7	FR-IN	+ Input for Front Right Channel	17	RL-IN	+ Input for Rear Left Channel
8	FR-FB	- Input for Front Right Channel	18	RL-FB	- Input for Rear Left Channel
9	FR-OUT	Output for Front Right Channel	19	RL-OUT	Output for Rear Left Channel
10	R-COUT	Capacitor for - Level Shift Right Channel	20	L-CIN	Capacitor for + Level Shift Left Channel

■ ABSOLUTE MAXIMUM RANGES (Ta=25°C)

PARAMETER	SYMBOL	RANGE	UNIT
Supply Voltage	V ⁺	+15	V
Power Dissipation	P _D	550 NOTE: EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 2layer, FR-4) mounting	mW
Operating Temperature	Topr	-40 to +85	°C
Storage Temperature	Tstg	-40 to +125	°C

■ ELECTRICAL CHARACTERISTIC (V⁺=9V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
DC CHARACTERISTIC						
Operating Voltage	V ⁺		6.0	9.0	11.0	V
Operating Current	I _{CC}	No Signal	-	12.0	18.0	mA
Output Voltage	V _{ODC}		-	7.8	-	V
AC CHARACTERISTIC (f=1kHz, V_O=1Vrms, R_L=10kΩ)						
Voltage Gain	A _v		7.5	8.0	8.5	dB
Channel Separation 1	CS1	R _S =600Ω, V _O =1Vrms, f = 1kHz, Front channel vs. Rear channel	70	80	-	dB
Channel Separation 2	CS2	R _S =600Ω, V _O =1Vrms, f = 1kHz, L channel vs. R channel	-	100	-	dB
Channel Balance	BAL		-	-	0.5	dB
Roll-off Low Frequency	f _{RL}	-1dB	-	5	-	Hz
Roll-off High Frequency	f _{RH}	-1dB	100	-	-	kHz
Input Resistance	R _{IN}		44	60	76	kΩ
Output Resistance	R _{OUT}		-	2	-	Ω
Maximum Output Voltage 1	V _{OM1}	THD=0.1%, f = 1kHz	5.0	5.2	-	Vrms
Maximum Output Voltage 2	V _{OM2}	THD=1%, f = 100kHz	-	4.5	-	Vrms
Noise Output Voltage	V _{NO}	R _S =0Ω, A-Weighting	-	5	10	μVrms
Total Harmonic Distortion	THD1	f=1kHz, V _O =3Vrms, A-Weighting	-	0.003	0.01	%
	THD2	f=17Hz to 20kHz, V _O =3Vrms, A-Weighting	-	0.01	-	%
Supply Voltage Rejection Ratio	SVR1	R _S =0Ω, f=1kHz, V _{RP} =100mVrms	55	-	-	dB
	SVR2	R _S =0Ω, f=20Hz to 20kHz, V _{RP} =100mVrms	-	50	-	dB

■ TERMINAL DESCRIPTION

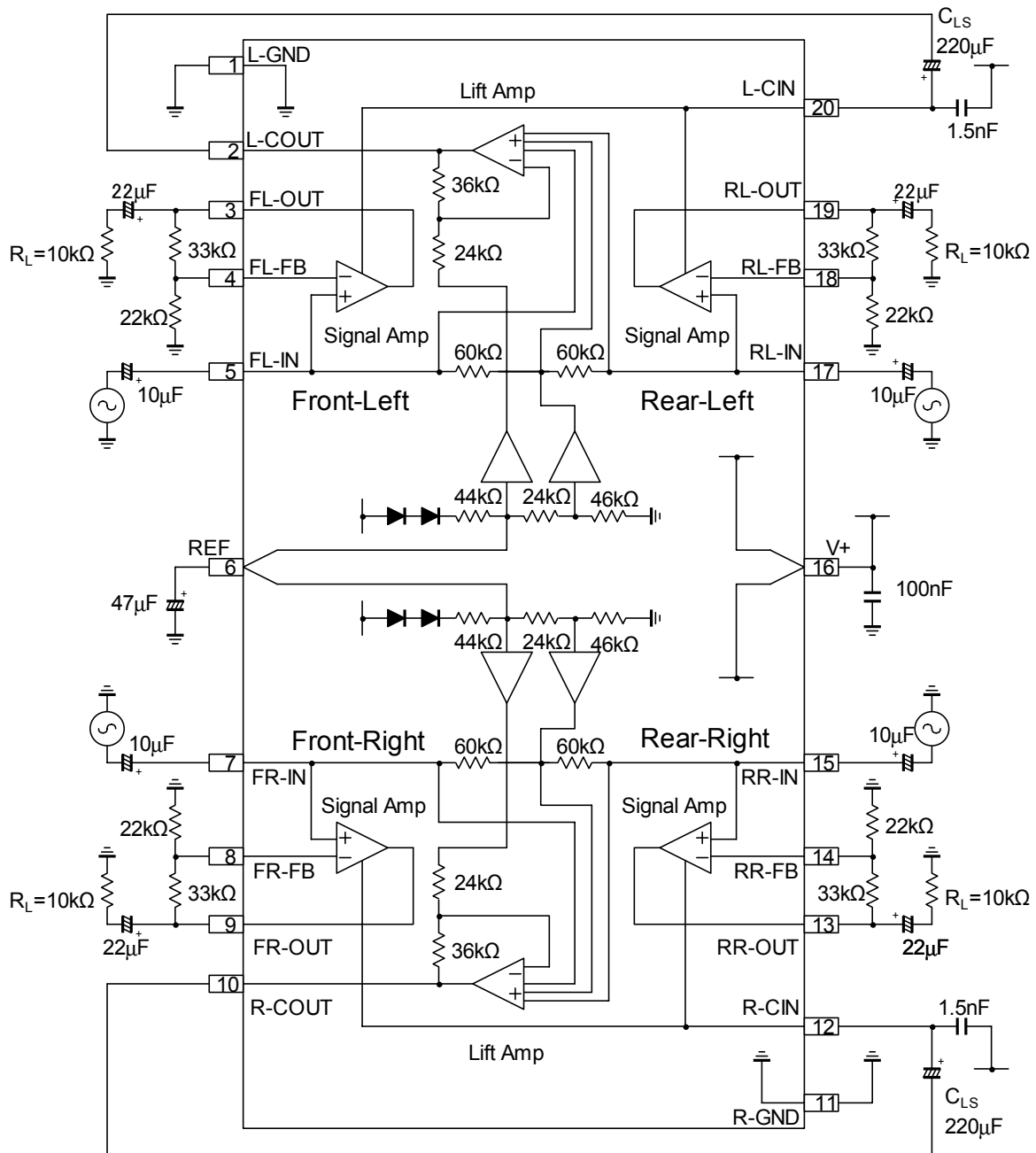
PIN NO.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	TERMINAL DC VOLTAGE
2 10	L-COUT R-COUT	Capacitor for - Level Shift Left Channel Capacitor for - Level Shift Right Channel		$(V^+ - 1.4) \times 0.09$ [V]
12 20 3 9 13 19	R-CIN L-CIN FL-OUT FR-OUT RR-OUT RL-OUT	Capacitor for + Level Shift Right Channel Capacitor for + Level Shift Left Channel Output for Front Left Channel Output for Front Right Channel Output for Rear Right Channel Output for Rear Left Channel		$V^+ - 0.7$ [V] (12,20PIN) $V^+ - 1.4$ [V] (3,9,13,19PIN)
4 8 14 18 5 7 15 17	FL-FB FR-FB RR-FB RL-FB FL-IN FR-IN RR-IN RL-IN	- Input for Front Left Channel - Input for Front Right Channel - Input for Rear Right Channel - Input for Rear Left Channel + Input for Front Left Channel + Input for Front Right Channel + Input for Rear Right Channel + Input for Rear Left Channel		$(V^+ - 1.4) \times 0.4$ [V]

■ TERMINAL DESCRIPTION

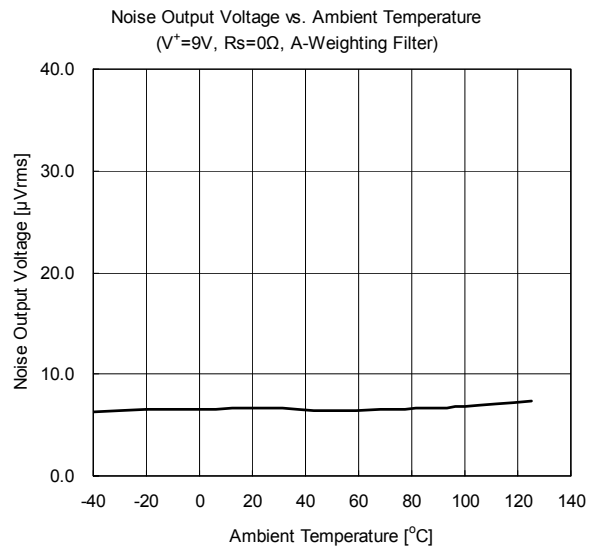
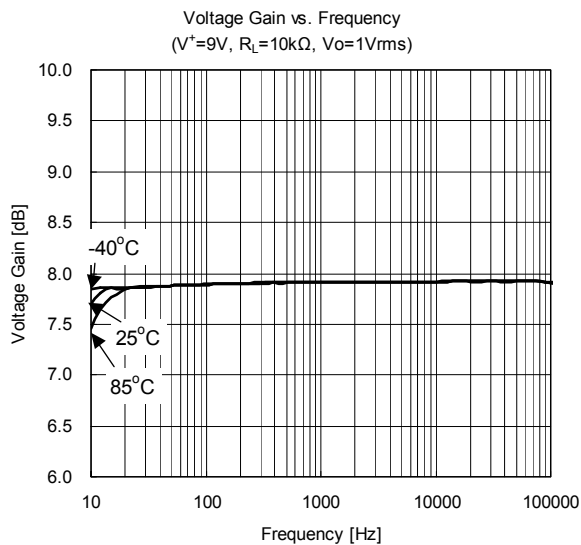
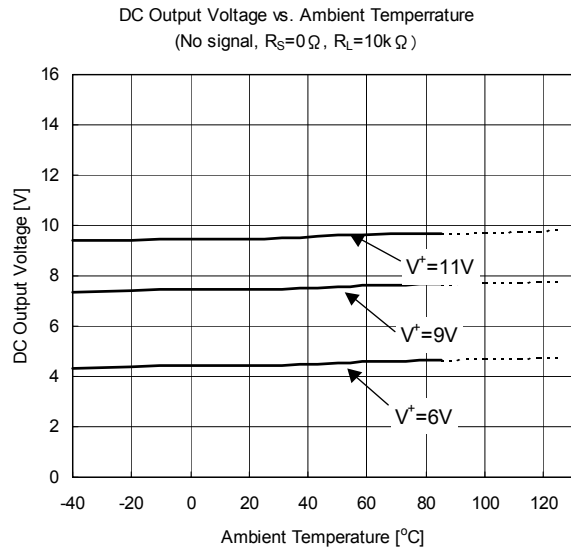
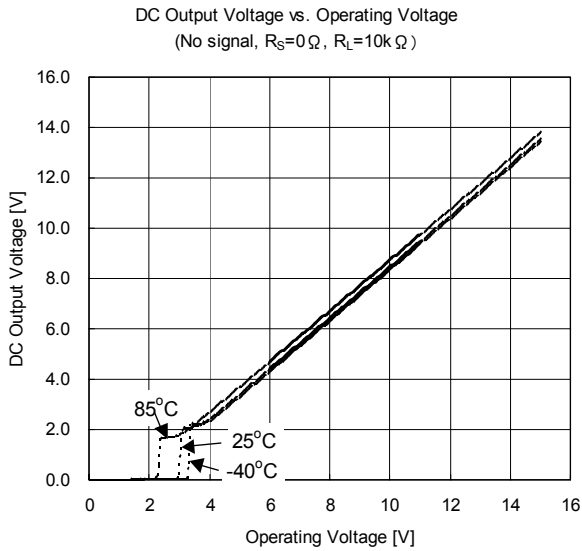
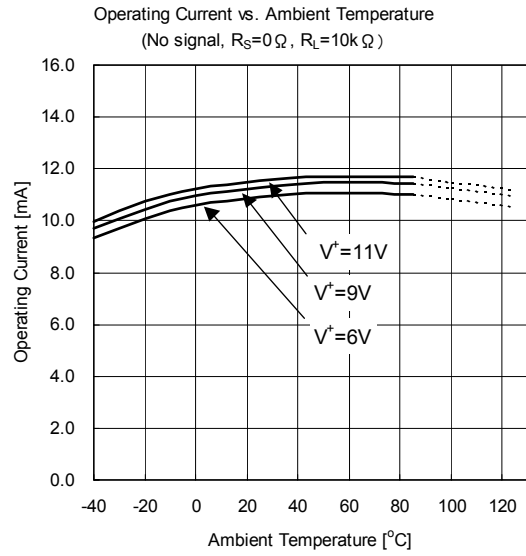
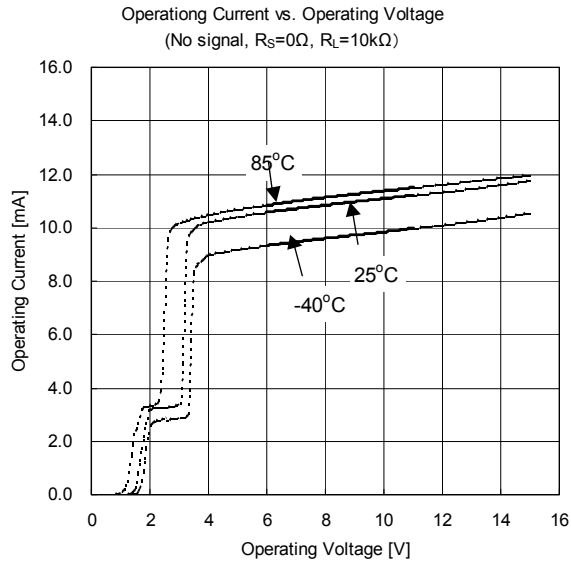
PIN NO.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	TERMINAL DC VOLTAGE
6	REF	Reference Voltage		$(V^+ - 1.4) \times 0.6$ [V]

NJM2792

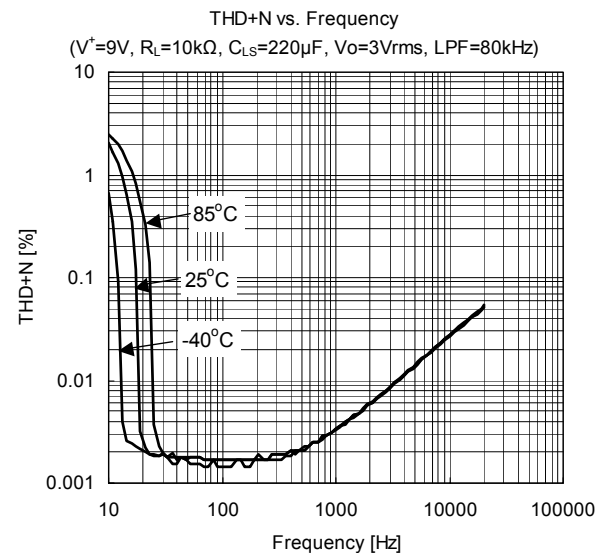
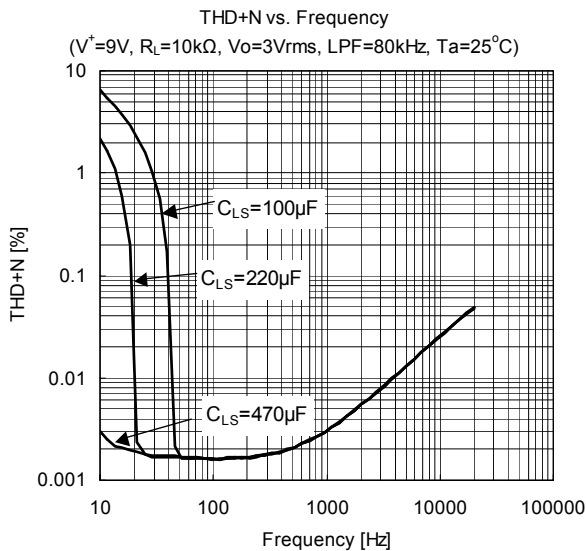
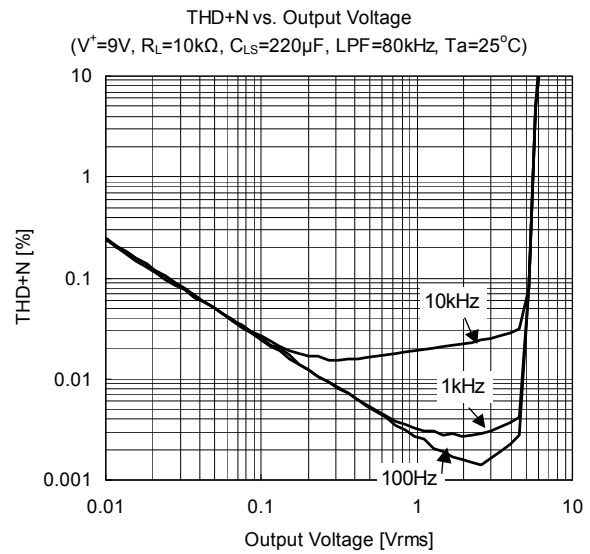
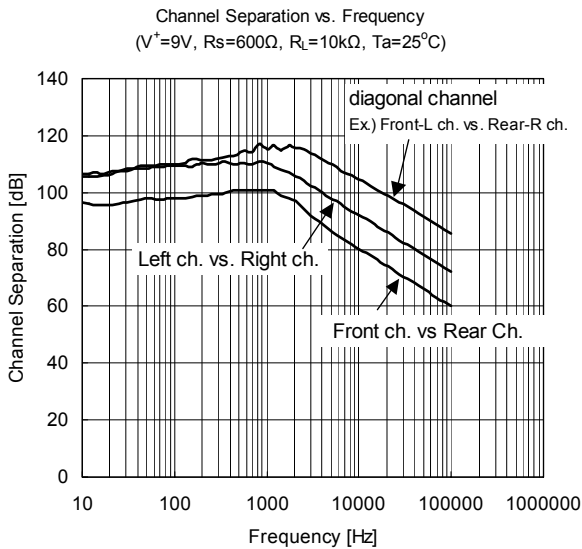
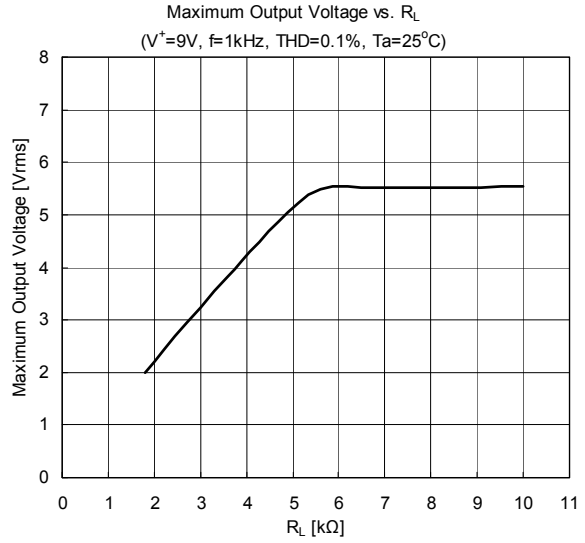
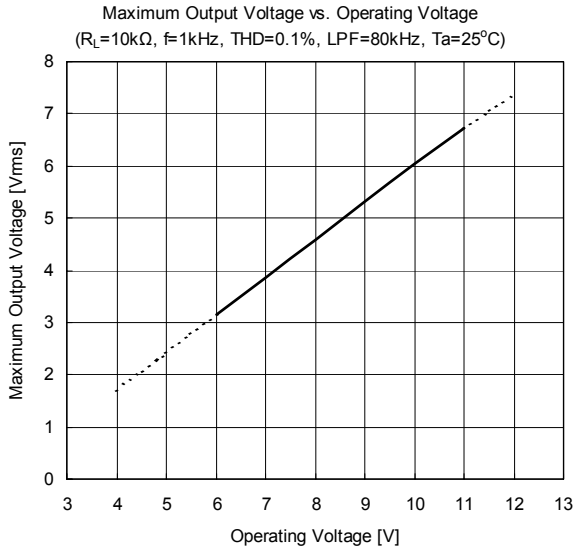
APPLICATION CIRCUIT



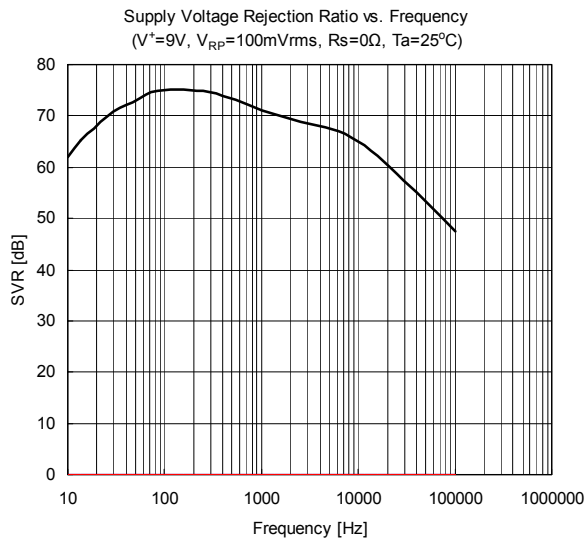
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



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