

4-Input / 1-Output Stereo Audio Selector

■ GENERAL DESCRIPTION

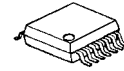
The **NJM2755** is 4 Input / 1 Output Stereo Audio Selector.

The **NJM2755** consists of switches and buffer operational amplifiers.

Based on the internal switch op-amp technology, the **NJM2755** features lower output noise, lower distortion and higher channel separation than the general Multiplexers or Analogue Switches.

The **NJM2755** contains compatibility with NJM2752(2in-1out SW), NJM2753(3in-1out SW).

■ PACKAGE OUTLINE



NJM2755V

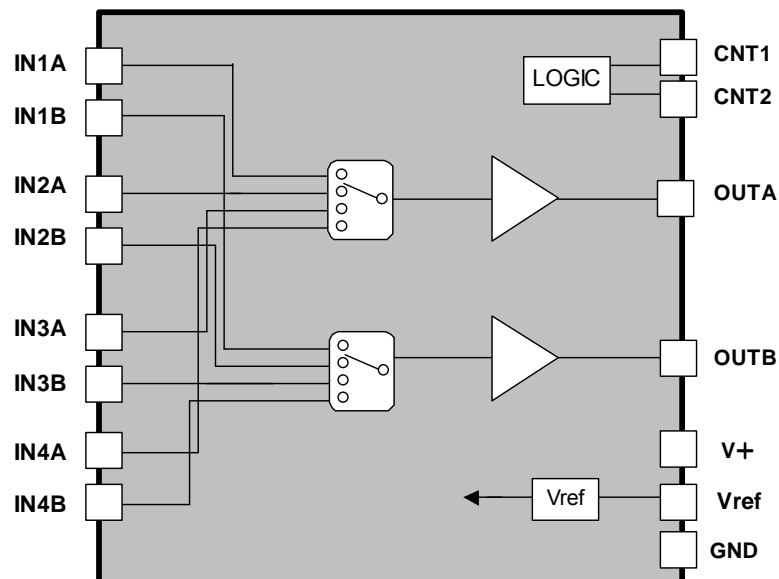
■ APPLICATIONS

- LCD-TV/PDP-TV
- Car Stereo
- Any Audio System

■ FEATURES

- Operating Voltage 4.7 to 10V
- 4 Input / 1 Output Stereo Audio Selectors
- Low Output Noise -114dBV typ.
- Low Distortion 0.0009% typ.
- Bipolar Technology
- Package Outline SSOP16

■ BLOCK DIAGRAM

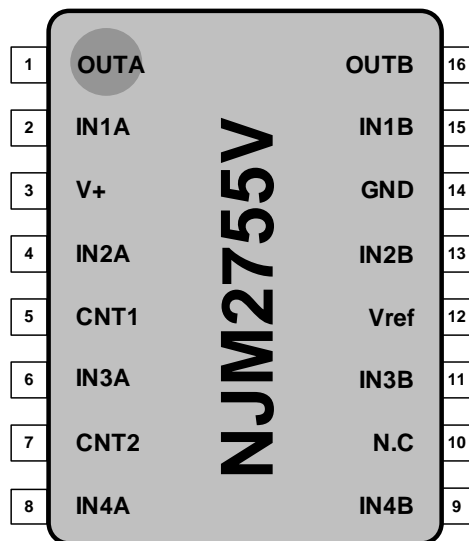


NJM2755

■ PIN CONFIGURATIONS

NJM2755 SSOP16

SSOP16

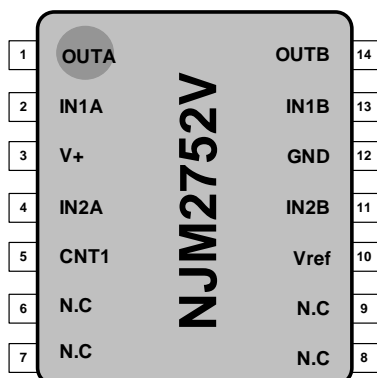


| PIN.No. | SYMBOL | FUNCTION | PIN.No. | SYMBOL | FUNCTION |
|---------|--------|--------------------------|---------|--------|---------------------|
| 1 | OUTA | Ach Output Terminal | 9 | IN4B | Bch Input Terminal4 |
| 2 | IN1A | Ach Input Terminal1 | 10 | N.C | No Connection |
| 3 | V+ | Power Supply Terminal | 11 | IN3B | Bch Input Terminal3 |
| 4 | IN2A | Ach Input Terminal2 | 12 | Vref | Reference Terminal |
| 5 | CNT1 | Control Switch Terminal1 | 13 | IN2B | Bch Input Terminal2 |
| 6 | IN3A | Ach Input Terminal3 | 14 | GND | GND Terminal |
| 7 | CNT2 | Control Switch Terminal2 | 15 | IN1B | Bch Input Terminal1 |
| 8 | IN4A | Ach Input Terminal4 | 16 | OUTB | Bch Output Terminal |

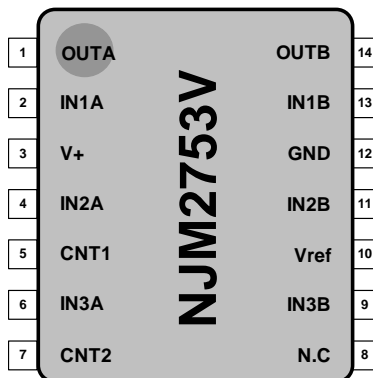
[Reference]

The NJM2755 contains compatibility with NJM2752 (2in-1out SW), NJM2753 (3in-1out SW).

NJM2752



NJM2753



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---|------|
| Supply Voltage | V ⁺ | 12 | V |
| Power Dissipation | P _D | SSOP16 490 ¹⁾ 630 ²⁾ <small>NOTE 1): EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 2layer, FR-4) mounting 2): EIA/JEDEC STANDARD Test board (76.2x114.3x1.6mm, 4layer, FR-4) mounting</small> | mW |
| Operating Temperature Range | T _{OPR} | -40 to +85 | °C |
| Storage Temperature Range | T _{STR} | -40 to +150 | °C |

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

| PARAMETER | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------|------------------|----------------------------------|------------|-------------|--------------|----------------|
| Operating Voltage | V ⁺ | | 4.7 | 9.0 | 10 | V |
| Supply Current | I _{CC} | No Signal | - | 10 | 15 | mA |
| Reference Voltage | V _{REF} | | - | 4.5 | - | V |
| Voltage Gain | G _V | Vin=1Vrms, f=1kHz | -1 | 0 | 1 | dB |
| Total Harmonic Distortion | THD+N | Vin=1Vrms, f=1kHz | - | 0.0009 | 0.03 | % |
| Output Noise Voltage | V _{NO} | A-Weighted | - | -114 (2) | -100 (10) | dBV (μVrms) |
| Maximum Output Voltage | V _{OM} | f=1kHz, THD=1% | 6 (2.0) | 8 (2.5) | - | dBV (Vrms) |
| Cross Talk | CT | Vin=1Vrms, f=1kHz, A-Weighted | 85 | 100 | - | dB |
| Channel Separation | CS | Vin=1Vrms, f=1kHz, A-Weighted | 90 | 110 | - | dB |
| Switch-ON Voltage Level | V _{CH} | | 2.4 | - | - | V |
| Switch-OFF Voltage Level | V _{CL} | | - | - | 0.5 | V |
| Input Impedance | R _{IN} | | - | 100 | - | kΩ |
| Output Impedance | R _{OUT} | | - | 45 | - | Ω |

■ SWITCH CONTROL LOGIC

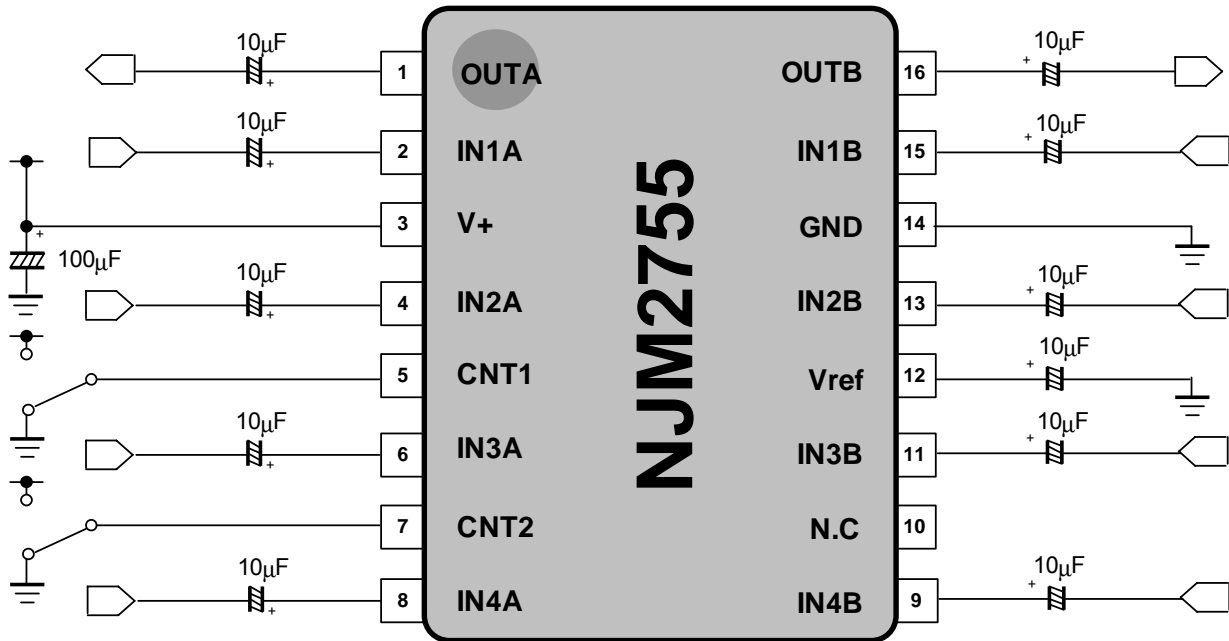
| CNT2 | CNT1 | INPUT SELECTOR Ach / Bch |
|------|------|--------------------------|
| L | L | 1 |
| L | H | 2 |
| H | L | 3 |
| H | H | 4 |

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■ TERMINAL DESCRIPTION

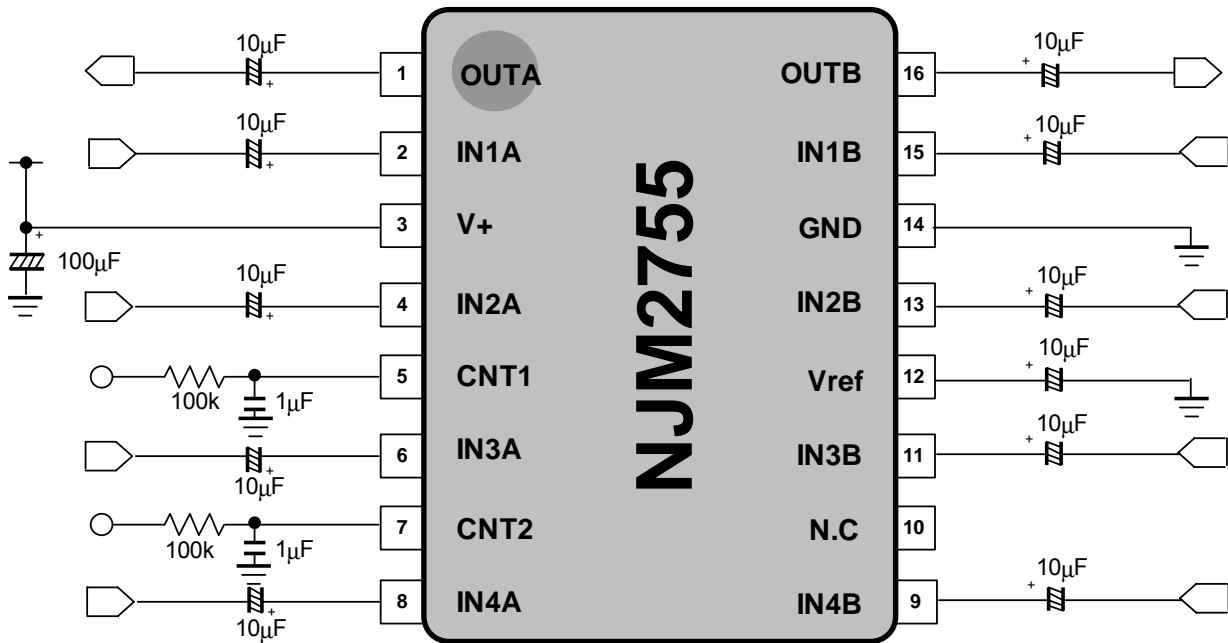
| PIN No. | SYMBOL | FUNCTION | EQUIVALENT CIRCUIT | TERMINAL VOLTAGE |
|---|--|--|--------------------|------------------|
| 2 4 6 8 9 11 13 15 | IN1A IN2A IN3A IN4A IN4B IN3B IN2B IN1B | Ach Input Terminal1 Ach Input Terminal2 Ach Input Terminal3 Ach Input Terminal4 Bch Input Terminal4 Bch Input Terminal3 Bch Input Terminal2 Bch Input Terminal1 | | V+/2 |
| 5 7 | CNT1 CNT2 | Control Switch Terminal1 Control Switch Terminal2 | | 0V (GND) |
| 1 16 | OUTA OUTB | Ach Output Terminal Bch Output Terminal | | V+/2 |
| 12 | Vref | Reference Terminal | | V+/2 |
| 3 14 | V+ GND | Power Supply Terminal GND Terminal | | V+ 0V |

MEASUREMENT CIRCUIT



NJM2755

APPLICATION CIRCUIT

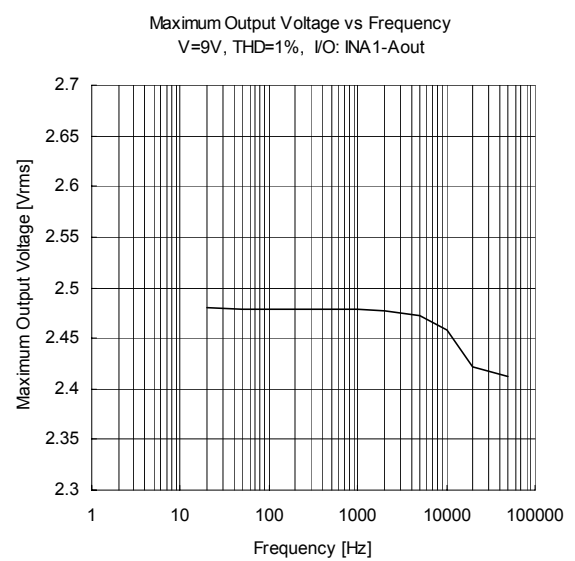
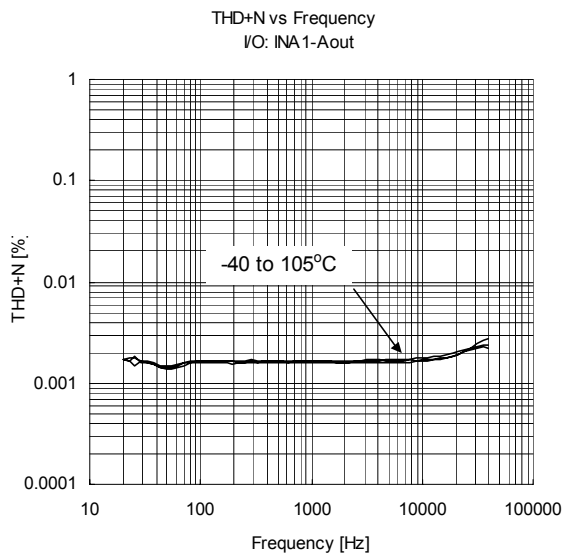
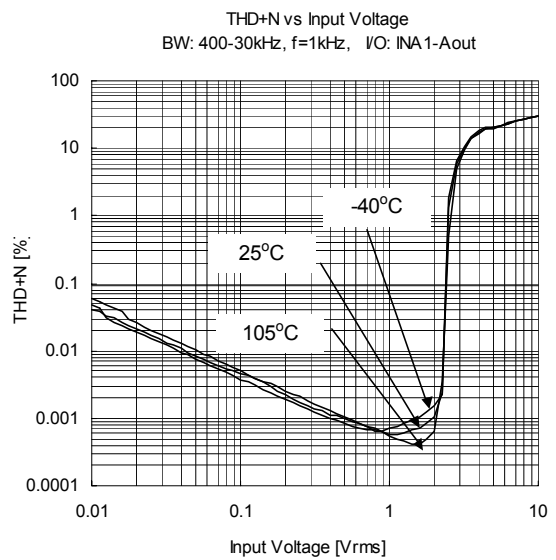
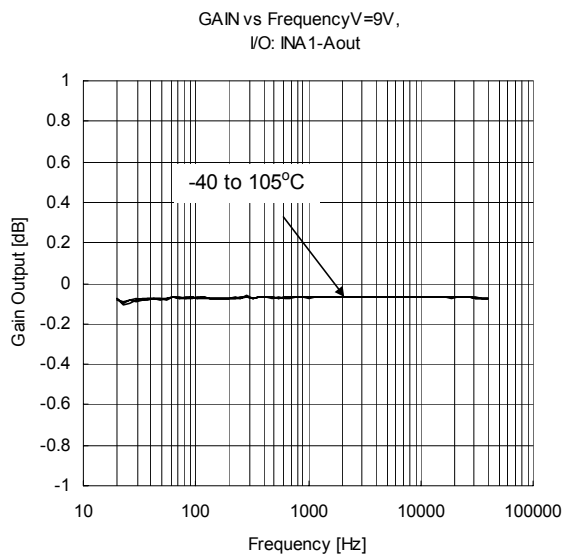
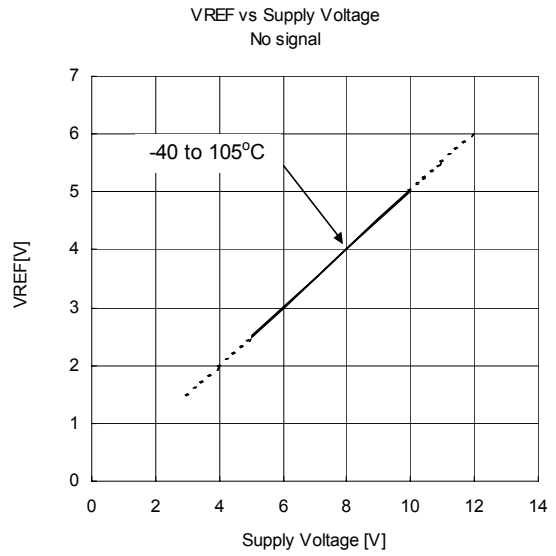
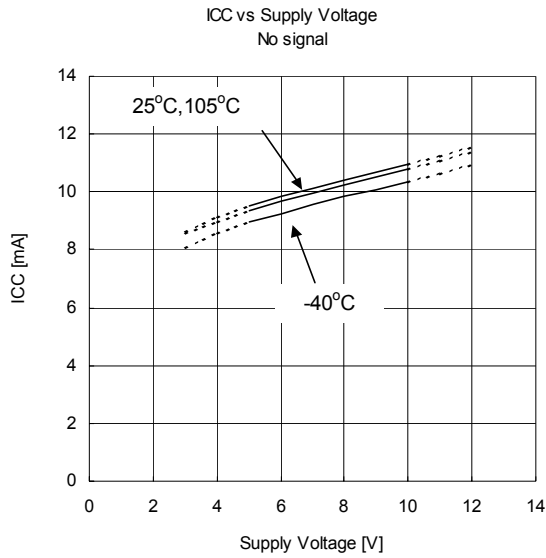


Application note:

Resistor(100k) and capacitor(1µF) connected to CNT1 are added to reduce pop-noise.

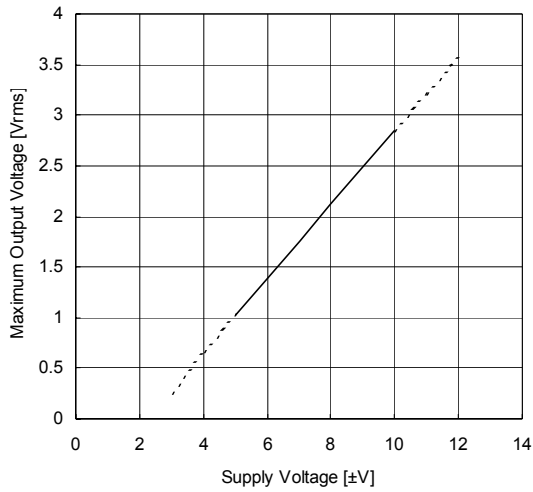
The value of input capacitor connected to IN1A and IN2A depends on cut-off frequency(calculated by $f_c = 1/2\pi RC$) you need. R(input impedance)=100kΩ.

TYPICAL CHARACTERISTICS

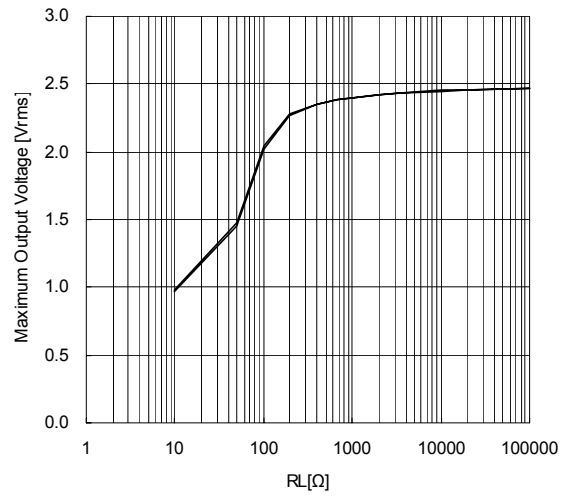


TYPICAL CHARACTERISTICS

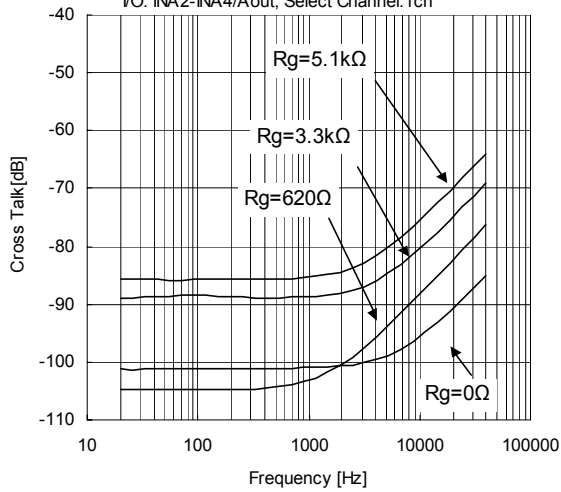
Maximum Output Voltage vs Supply Voltage
THD=1%, I/O: INA1-1Aout



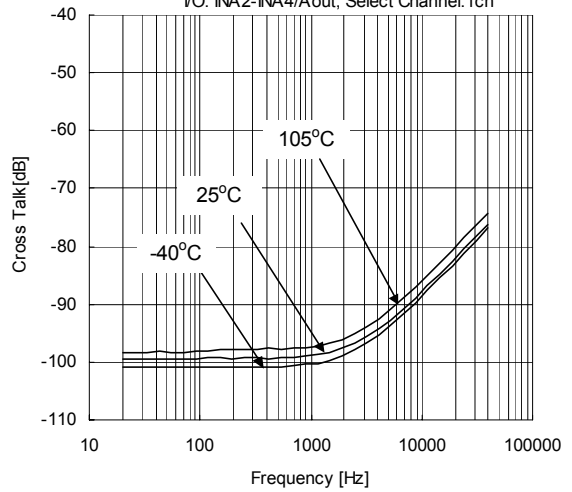
Maximum Output Voltage vs Load Resistance
V=9V, THD=1%, f=1kHz, I/O: INA1-Aout / INB1-Bout



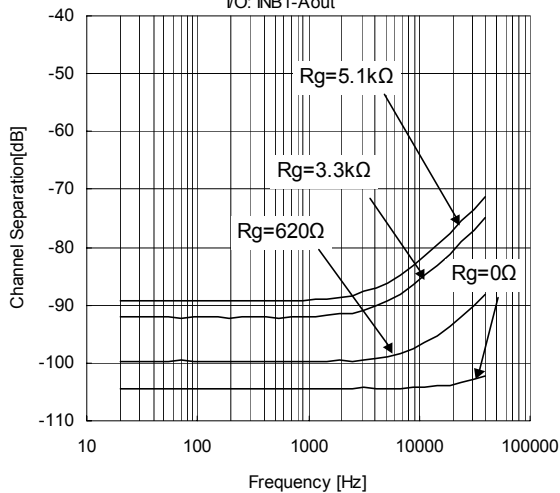
Cross Talk vs Frequency
V=9V, Vin=1Vrms, BW:10-80kHz,
I/O: INA2-INA4/Aout, Select Channel:1ch



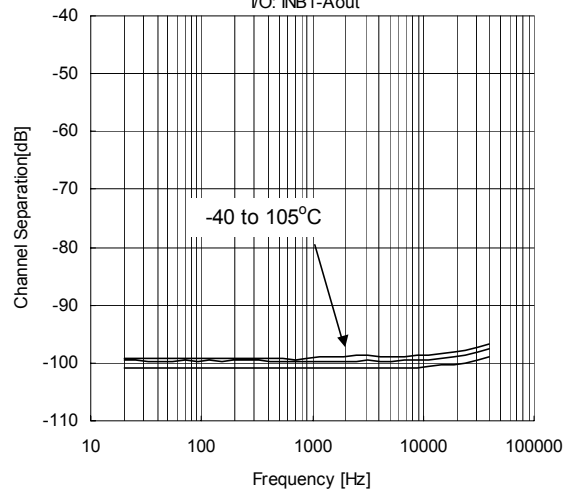
Cross Talk vs Frequency
V=9V, Vin=1Vrms, BW:10-80kHz,
I/O: INA2-INA4/Aout, Select Channel:1ch



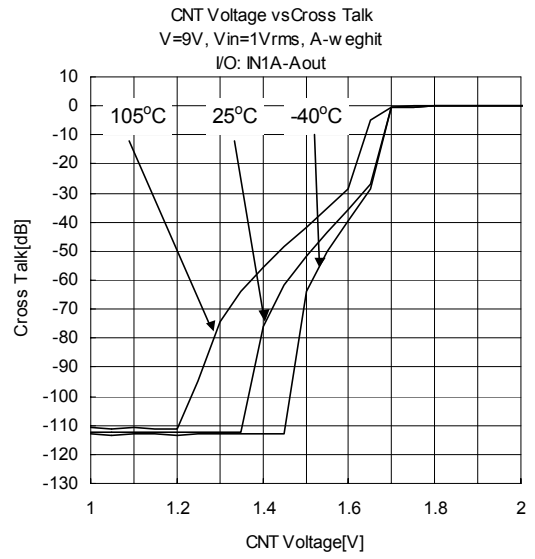
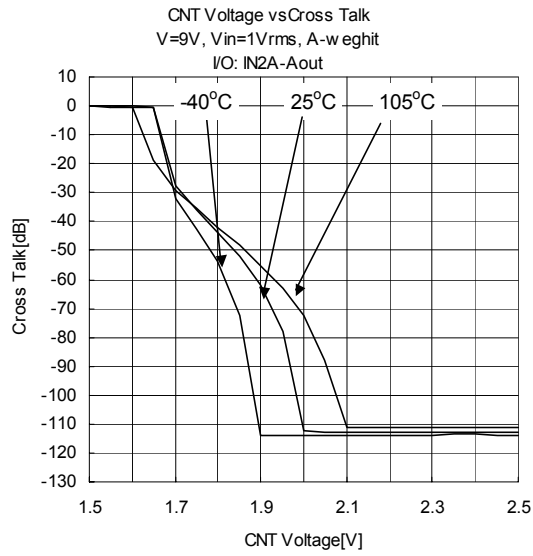
Channel Separation vs Frequency
V=9V, Vin=1Vrms, BW:10-80kHz,
I/O: INB1-Aout



Channel Separation vs Frequency
V=9V, Vin=1Vrms, BW:10-80kHz,
I/O: INB1-Aout



TYPICAL CHARACTERISTICS



[CAUTION]

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