

## 3-Input / 1-Output Stereo Audio Selector

### ■ GENERAL DESCRIPTION

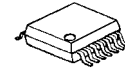
The **NJM2753** is 3-Input / 1-Output Stereo Audio Selector.

The **NJM2753** consists of switches and buffer operational amplifiers.

Based on the internal switch op-amp technology, the **NJM2753** features lower output noise, lower distortion and higher channel separation than the general Multiplexers or Analogue Switches.

The **NJM2753** contains compatibility with NJM2752(2in-1out SW), NJM2755(4in-1out SW).

### ■ PACKAGE OUTLINE



**NJM2753V**

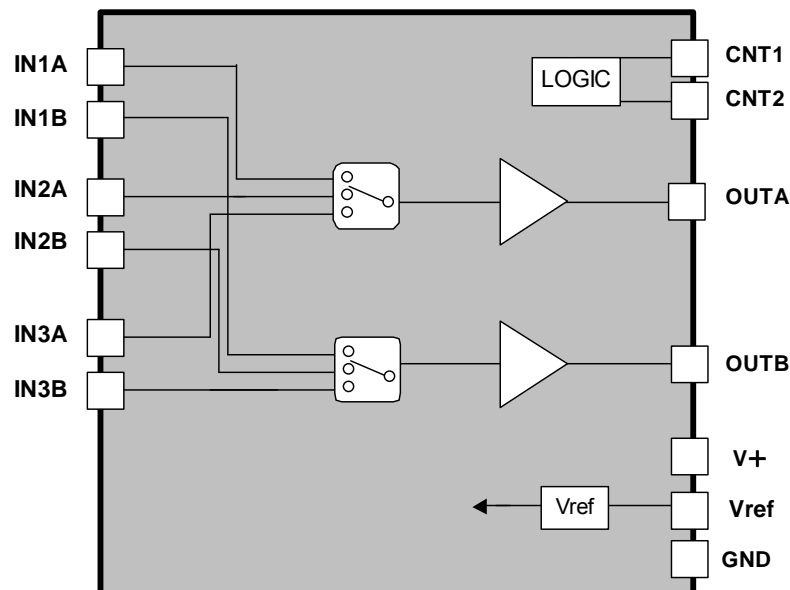
### ■ APPLICATIONS

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

### ■ FEATURES

- Operating Voltage 4.7 to 10V
- 3-Input / 1-Output Stereo Audio Selector
- Low Output Noise -114dBV typ.
- Low Distortion 0.0009% typ.
- Bipolar Technology
- Package Outline SSOP14

### ■ BLOCK DIAGRAM



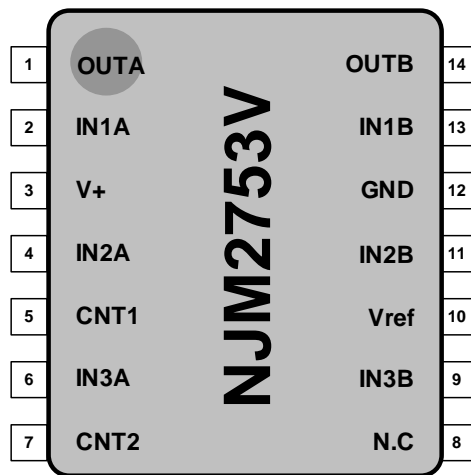
# NJM2753

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## ■ PIN CONFIGURATIONS

NJM2753 SSOP14

### SSOP14

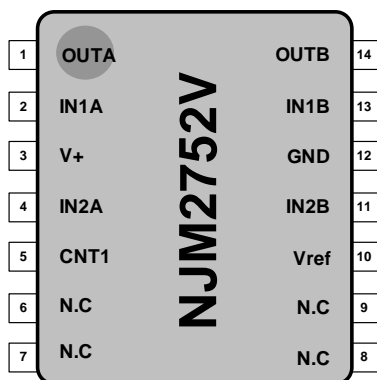


PIN.No.	SYMBOL	FUNCTION	PIN.No.	SYMBOL	FUNCTION
1	OUTA	Ach Output Terminal	8	N.C	No Connection
2	IN1A	Ach Input Terminal1	9	IN3B	Bch Input Terminal3
3	V+	Power Supply Terminal	10	Vref	Reference Terminal
4	IN2A	Ach Input Terminal2	11	IN2B	Bch Input Terminal2
5	CNT1	Control Switch Terminal1	12	GND	GND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

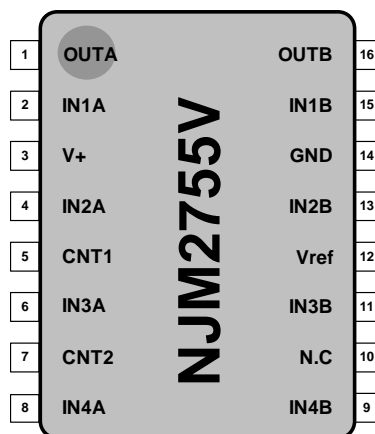
### [Reference]

The NJM2753 contains compatibility with NJM2752 (2in-1out SW), NJM2755 (4in-1out SW).

#### NJM2752



#### NJM2755



### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V <sup>+</sup>	12	V
Power Dissipation	P <sub>D</sub>	SSOP14 450 <sup>1)</sup> 570 <sup>2)</sup> <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 <sub>OPR</sub>	-40 to +85	°C
Storage Temperature Range	T <sub>STR</sub>	-40 to +150	°C

### ■ ELECTRICAL CHARACTERISTICS ( Ta=25°C, V<sup>+</sup>=9V)

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

### ■ SWITCH CONTROL LOGIC

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

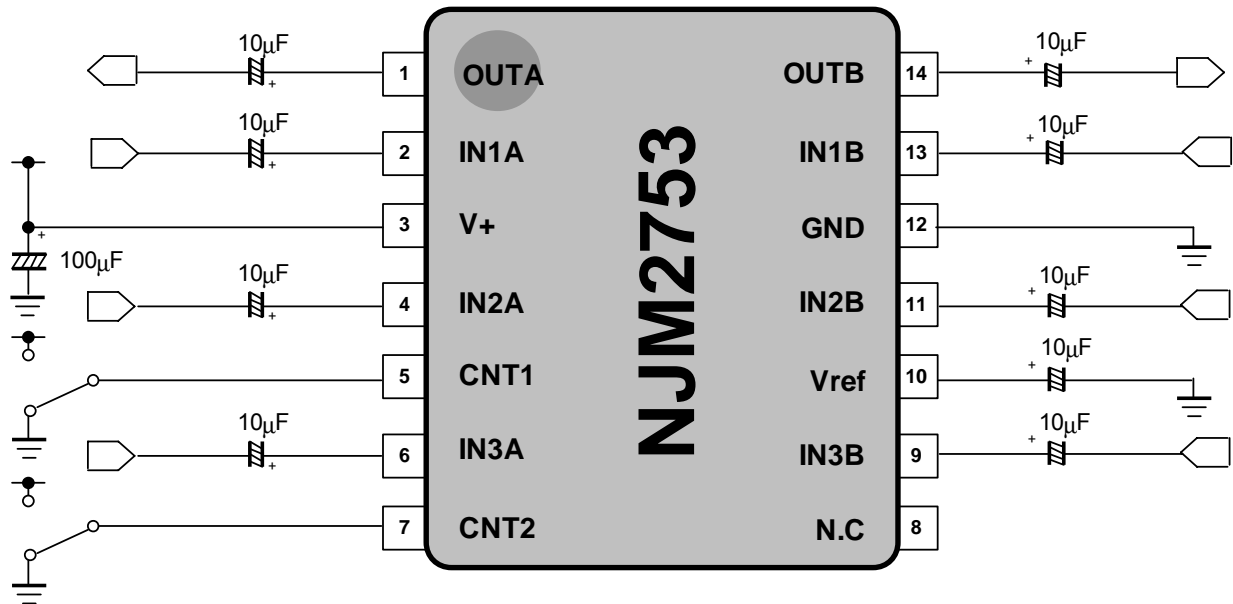
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## ■ TERMINAL DESCRIPTION

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

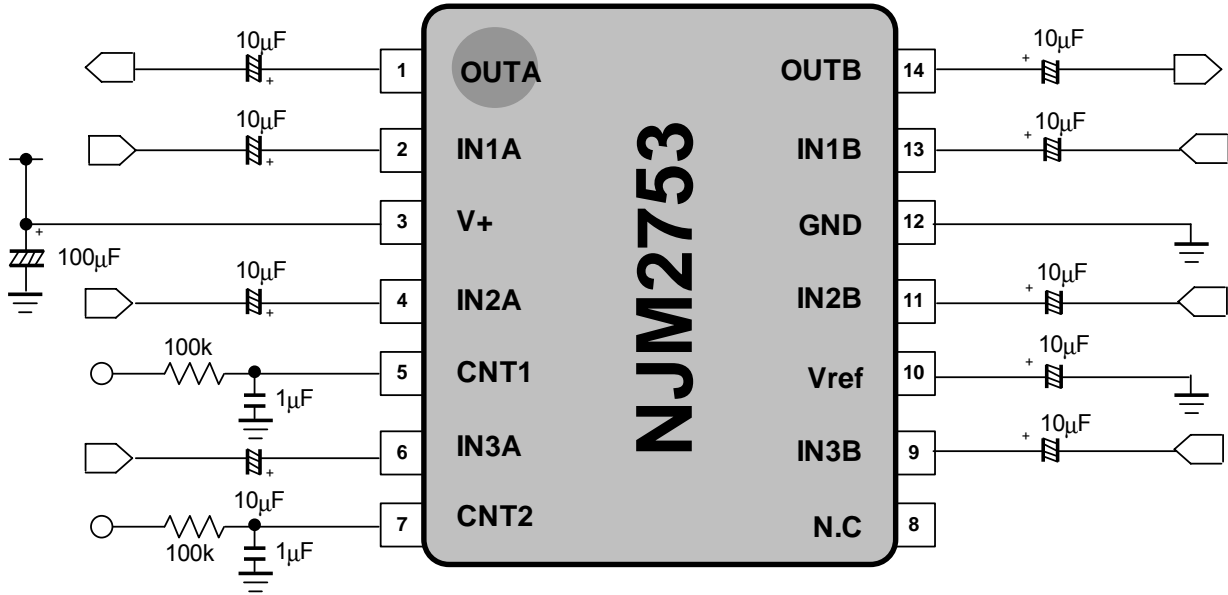
## MEASUREMENT CIRCUIT



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## APPLICATION CIRCUIT

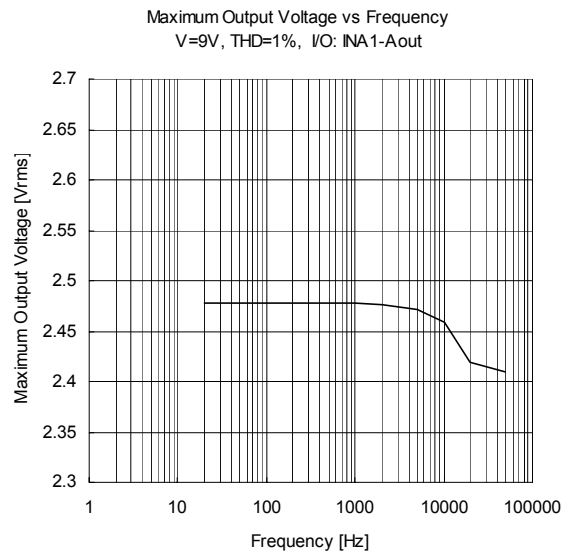
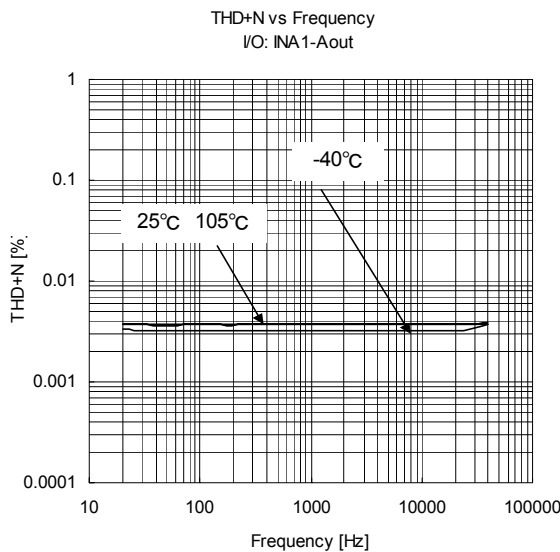
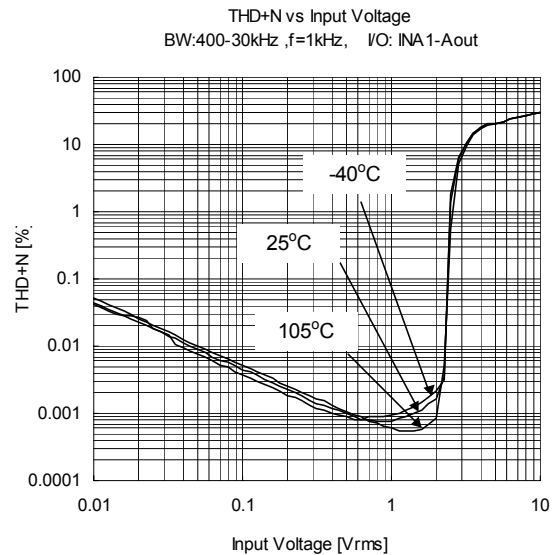
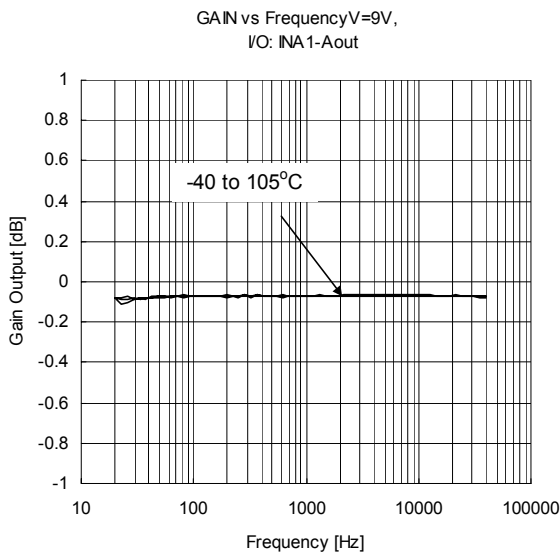
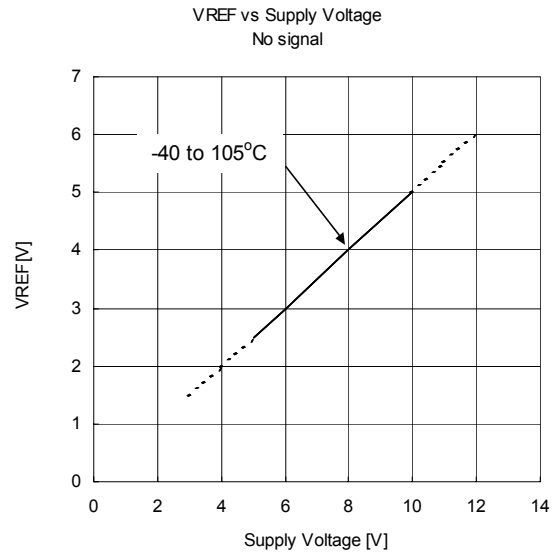
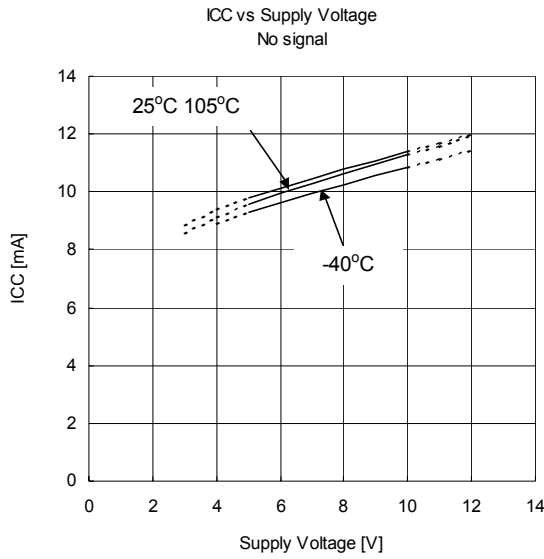


Application note:

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

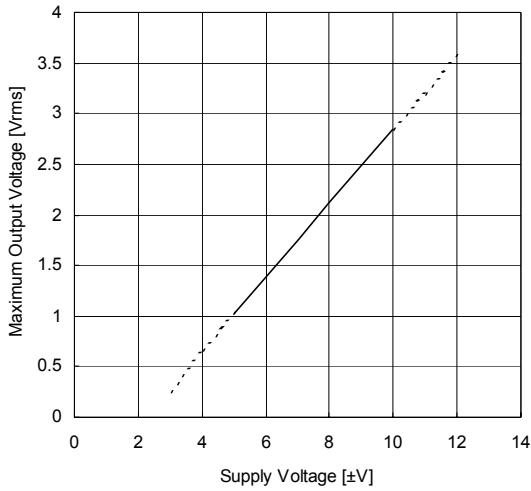
The value of input capacitor connected to IN1A and IN2A depends on cut-off frequency(calculated by  $f_c=1/2\pi RC$ ) you need. R(input impedance)=100kΩ.

## TYPICAL CHARACTERISTICS

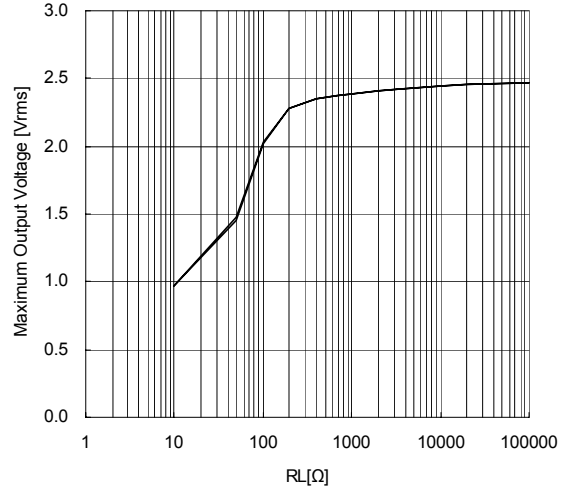


## TYPICAL CHARACTERISTICS

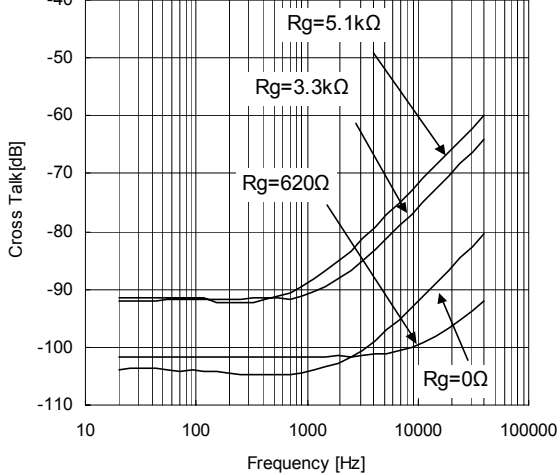
Maximum Output Voltage vs Supply Voltage  
THD=1%, I/O: INA1-1Aout



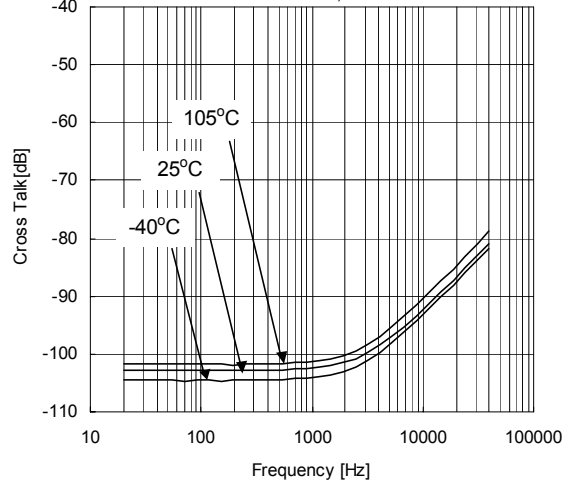
Maximum Output Voltage vs Load Resistance  
V=9V, THD=1%, f=1kHz, I/O: INA1-Aout / INB1-Bout



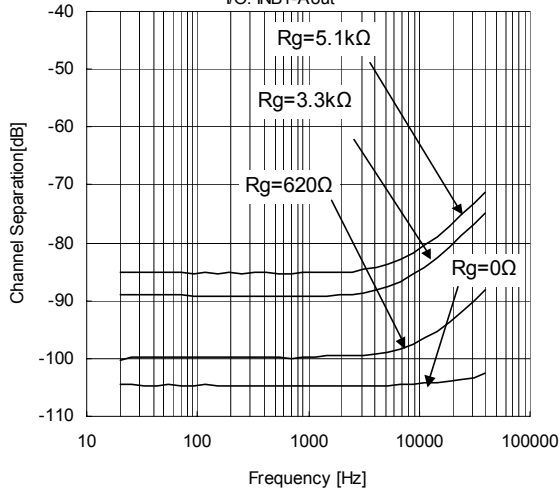
Cross Talk vs Frequency  
V=9V, Vin=1Vrms, BW:10-80kHz,  
I/O: INA2-IN3A/Aout, Select Channel:1ch



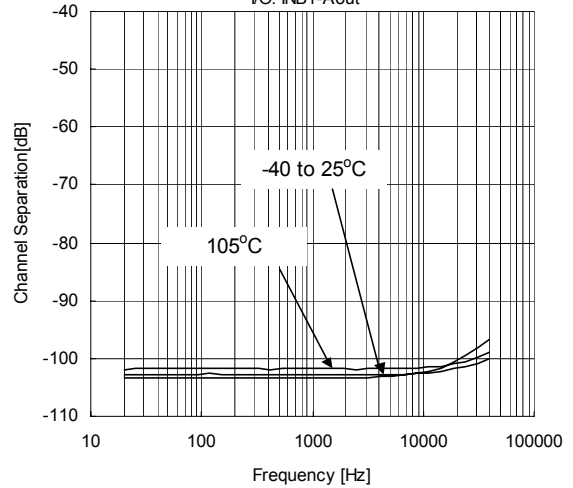
Cross Talk vs Frequency  
V=9V, Vin=1Vrms, BW:10-80kHz,  
I/O: INA2-IN3A/Aout, Select Channel:1ch



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

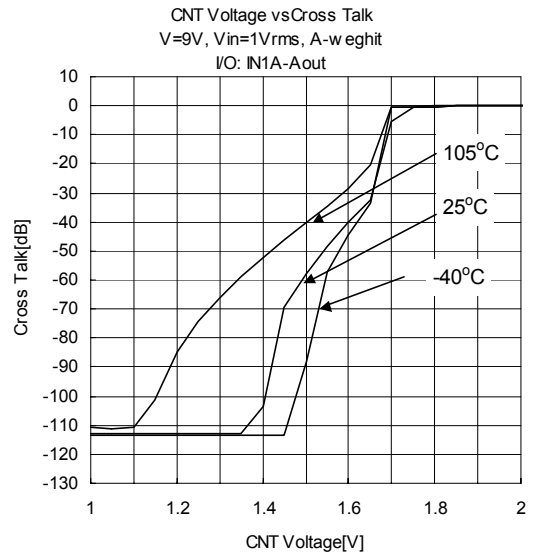
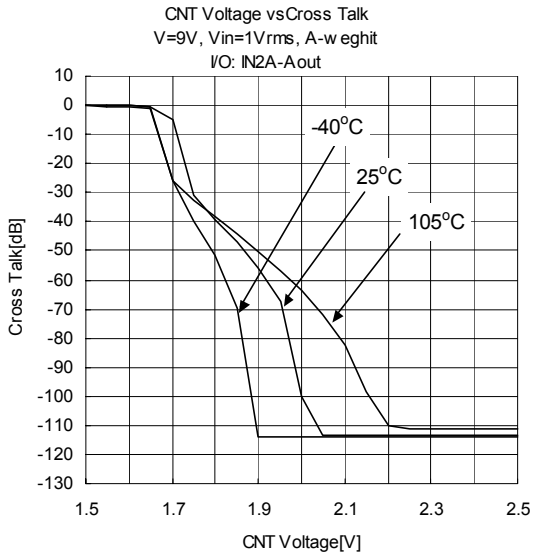


Channel Separation vs Frequency  
V=9V, Vin=1Vrms, BW:10-80kHz,  
I/O: INB1-Aout





## TYPICAL CHARACTERISTICS



**[CAUTION]**

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