

NCS8353

Stereo 20W/Ch Class D Audio Power Amplifier with Programmable Power Limit and Selectable Gain

The NCS8353 is a stereo Class D audio power amplifier capable of delivering a continuous power of up to 20 W/ch into an 8 Ω bridge tied

NCS8353

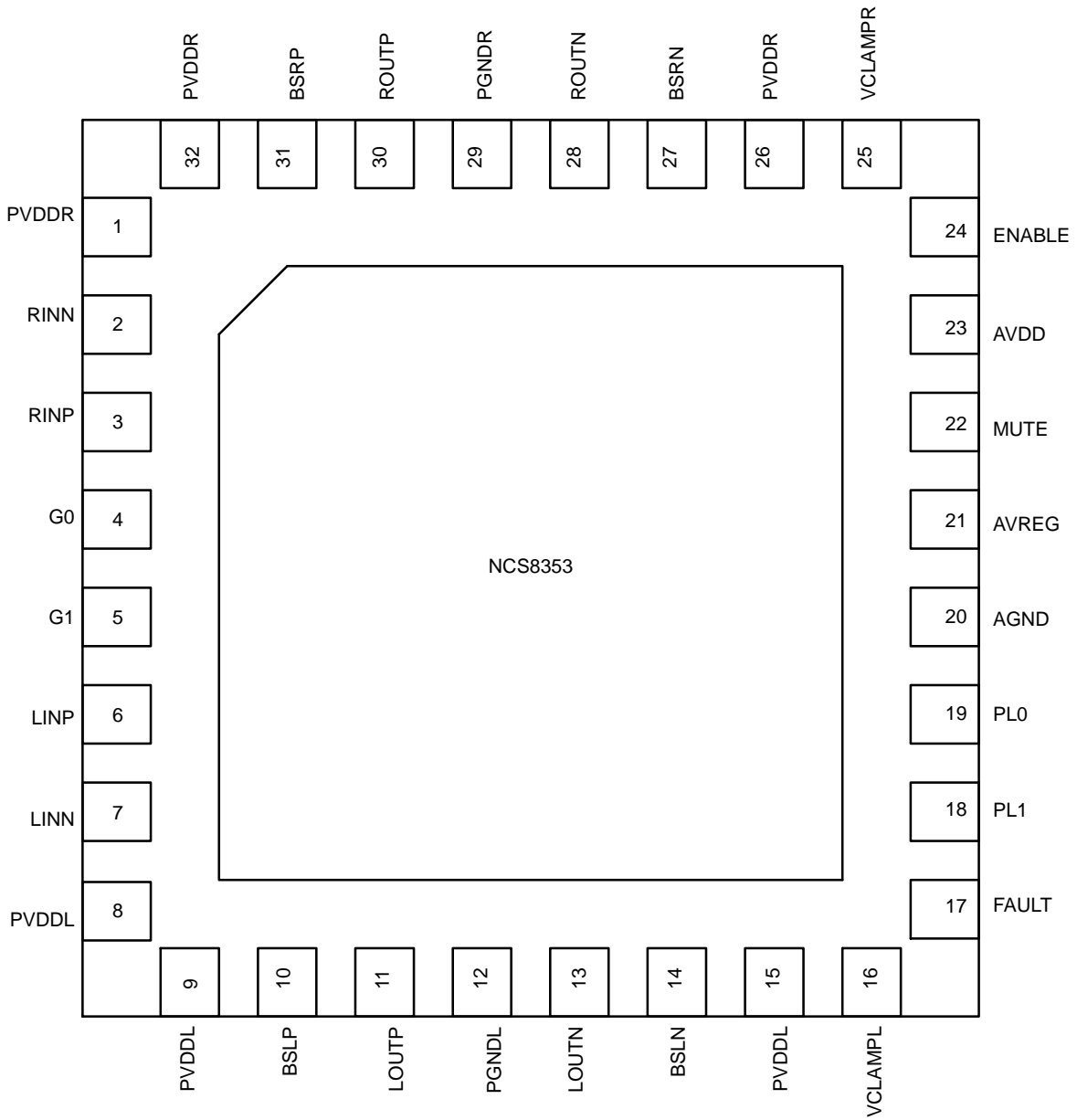
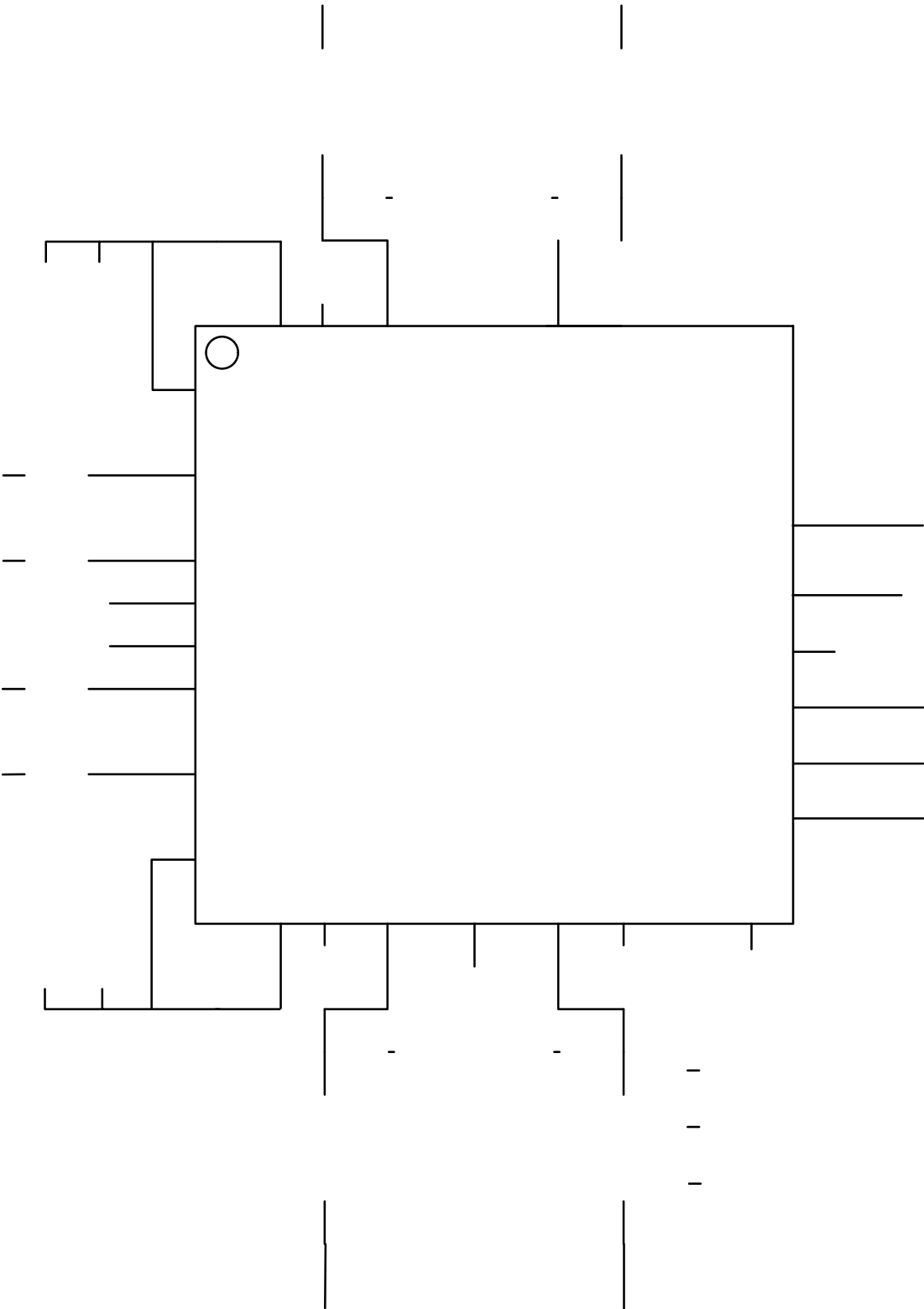


Figure 2. Package Options

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PIN FUNCTION AND DESCRIPTION

Pin#	Name	Input/output	Description
1	PVDDR	Power	Power supply for right channel.
2			

NCS8353

MAXIMUM RATINGS TABLE

Parameter	Symbol	Rating	Unit
Power Supply Voltage (PVDDR, PVDDL)	P_{VDD}	30	V
Analog Supply Voltage (AVDD)	A_{VDD}	30	V
Input voltage (ENABLE, G0, G1, RINN, RINP, LINN, LINP)	V_{in}	-0.3 V to AV_{reg}	V
Input voltage Mute function (MUTE)	V_{in}	-0.3 V to 3.6 V	V
Output Current (ROUTP, ROUTN, LOU TP LOU TN)	I_O	4.7	A

NCS8353

DC ELECTRICAL CHARACTERISTICS, AVDD = PVDDR = PVDDL = 12 V, R_L = 8 Ω, T_A = 25°C unless otherwise noted

Specification Name	Conditions	Symbol	Min	Typ	Max	Unit
Differential Output Offset Voltage	Inputs AC GND, C _{IN} = 1 μF, A _V = 20 dB, Measured differentially	V _{OSDIFF}		15	50	mV
5.0 V Internal Regulator	No load, C _{reg} = 1 μF	A _{VREG}	4.5	5	5.5	V
Voltage input common mode range	Inputs AC coupled, C _{IN} = 1 μF, V _{bias} = 2.15 V	V _{ICR}	A _{GND} + 0.35		A _{VREG} - 1.35	V
Quiescent Current	No load, No filter	I _Q		28	42	mA
Shutdown Quiescent Current	No load, No filter, ENABLE ≤ 0.8 V	I _{QSHDN}		100	200	μA 0.8 V15

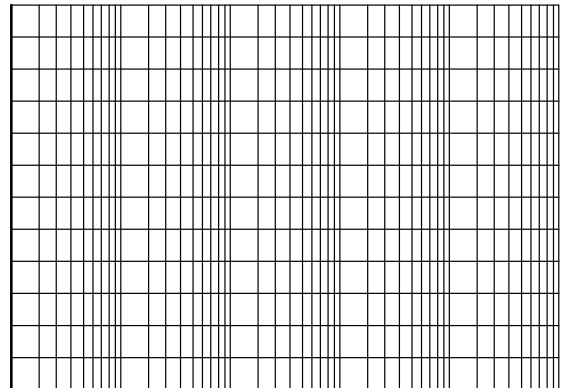
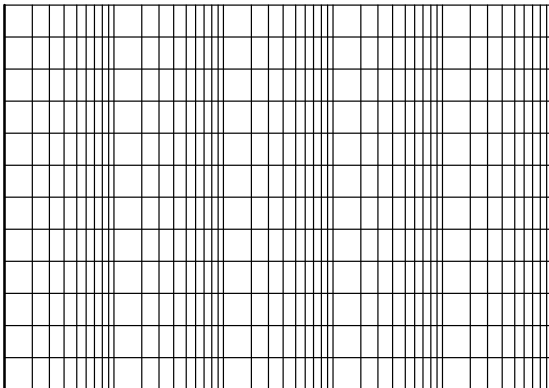
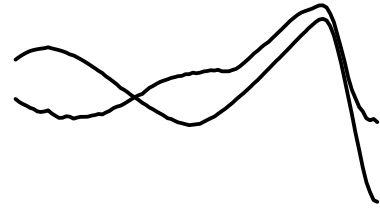
NCS8353

AC ELECTRICAL CHARACTERISTICS, AVDD = PVDDR = PVDDL = 12 V, RL = 8 Ω, TA = 25°C unless otherwise noted

Specification Name	Conditions	Symbol	Min	Typ	Max	Unit
AC Power Supply Rejection Ratio	No supply bypass, 200 mVpp ripple, $f_{in} = 1$ kHz, $A_V = 36$ dB	PSRR _{AC}		-69		dB
Common Mode Rejection Ratio IEC	Inputs shorted together, $V_{IN} = 32$ mVpp, $f_{in} = 1$ kHz, $A_V = 36$ dB	CMRR _{IEC}		-55		dB
Output Power	$A_V = 36$ dB, THD+N = 1%	P _{out}		7.5		W
Total Harmonic Distortion + Noise	$A_V = 36$ dB, P _{OUT} = 1 W, $f_{in} = 1$ kHz					

NCS8353

TYPICAL CHARACTERISTICS



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TYPICAL CHARACTERISTICS

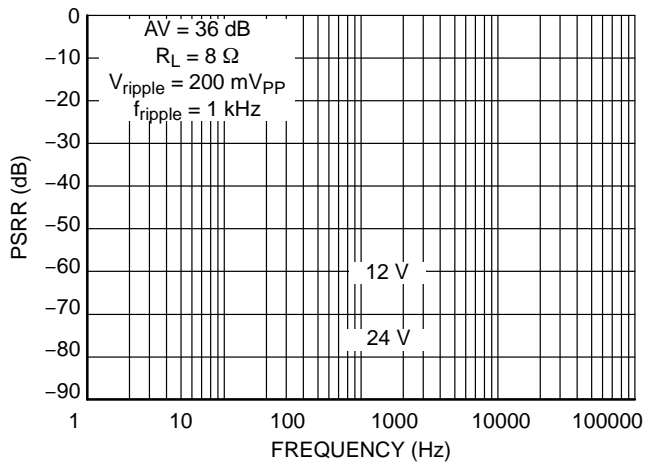


Figure 10. PSRR vs. Frequency

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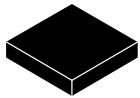
Table 2. ALL POWER LIMITS AND VOLTAGES REFERENCED TO 8 Ω LOAD

P_{limit}	20 W	15 W	12 W	10 W
A_V				
20 dB	1.789 V _{in(p)}	1.549 V _{in(p)}	1.386 V _{in(p)}	1.265 V _{in(p)}
26 dB	894 mV _{in(p)}	775 mV _{in(p)}	693 mV _{in(p)}	632 mV _{in(p)}
32 dB	447 mV _{in(p)}	387 mV _{in(p)}	346 mV _{in(p)}	316 mV _{in(p)}
36 dB	284 mV _{in(p)}	246 mV _{in(p)}	220 mV _{in(p)}	201 mV _{in(p)}

Programmable Gain Control

Pop and Click Suppression

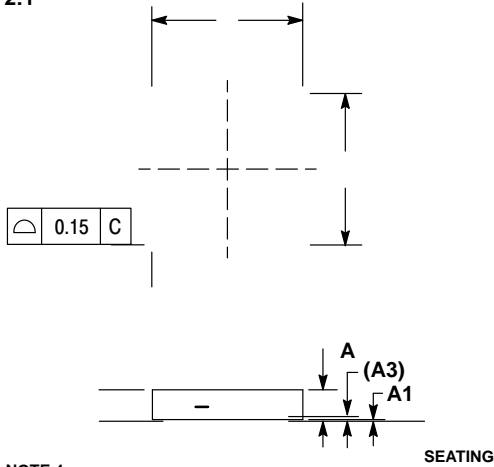
Pop and click is often a function of charge difference from input coupling and bypass capacitors, momentary differential offset voltages across the speaker, or state



QFN32 5x5, 0.5P
CASE 488AM
ISSUE A

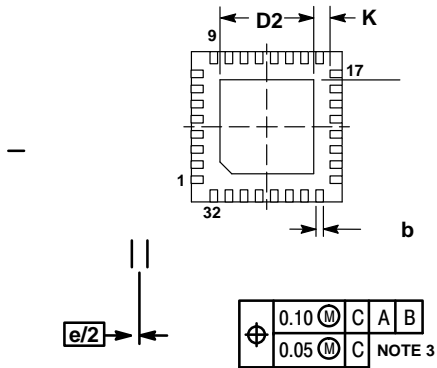
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SCALE 2:1



NOTE 4

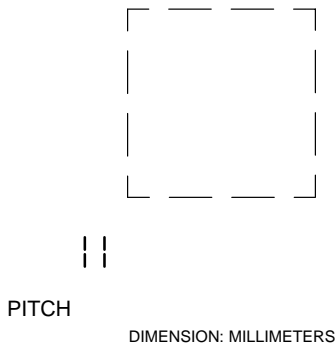
	MAX
A1	0.80 1.00
A3	0.20 REF 0.05
b	0.18 0.30
D	5.00 BSC
D2	2.95 3.25
E	5.00 BSC
E2	2.95 3.25
e	0.50 BSC
K	0.20
L	0.30 0.50
L1	0.15



XXXXXXXXXX
XXXXXXXXXX
AWLYYYWW■

■Free indicator, "G" or

RECOMMENDED



PITCH

DIMENSION: MILLIMETERS

DOCUMENT NUMBER:	98AON20032D	

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