AAP572x

Electret Condenser Microphone Pre-Amplifier

PRELIMINARY DATA

DESCRIPTION

The AAP572x series is part of AAI's new family of specialty products for Portable Electronics applications, in this case aimed at two terminal ECMs requiring integrated pre-amplfiers. The AAP572x ECM pre-amplfiers offer ultra low noise, require low current and feature ultra low input capacitance.

Multiple gain options available (x defines gain option)

- A: 14dB
- B: 19dB
- C: 26dB

The AAP572x will be offered in a chip scale SMD package. The package size is a tiny 1.09mm x 1.12mm, and its height is 350µm including solder bumps.

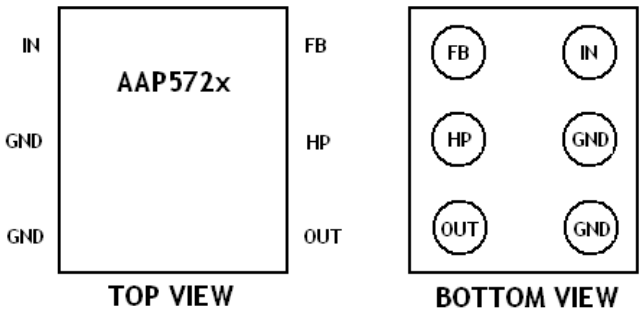
The AAP572x is offered in a chip scale SMT package with a size and aspect ratio (1.09mm x 1.12mm) that is optimum for small (3mm dia.) microphones. The lead free solder pads are nominally 118µm dia. The AAP572x is supplied in tape and reel packaging.

FEATURES

- High tolerance to RFI, 8kV ESD tolerance
- 4.5µV RMS equivalent input noise (A weighted to 10kHz) Cmic = 5pF.
- < 0.5% THD typical for output swing = 250mV peak to peak.
- AAP572A: 270µA quiescent current at VDD = 2V, RL = 2.2kΩ.
  AAP572B/C: 400µA quiescent current at VDD = 1.65V, RL = 1kΩ.
- Suitable for small microphones down to 3mm diameter
- High pass filter
- Operation down to 1.45V with RL = 1kΩ and 200µA operating current.

PIN CONFIGURATION: 6-Lead Micro SMD

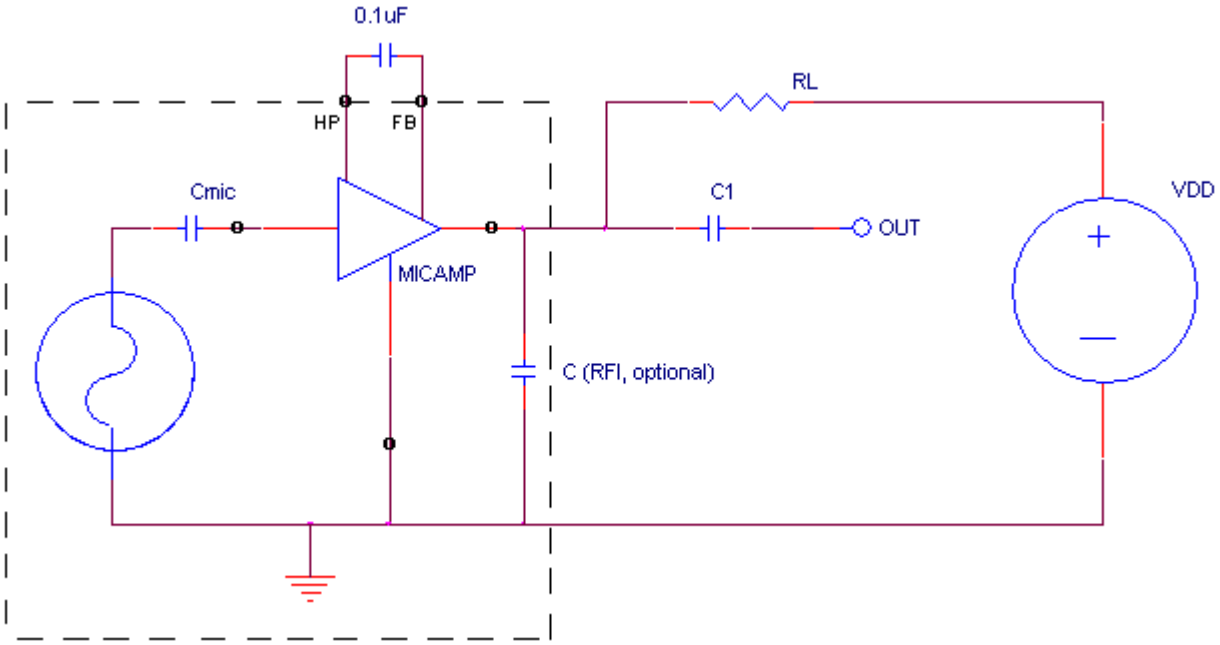
AAP572x shown from the top and bottom.
Numbers indicate batch ID and gain.



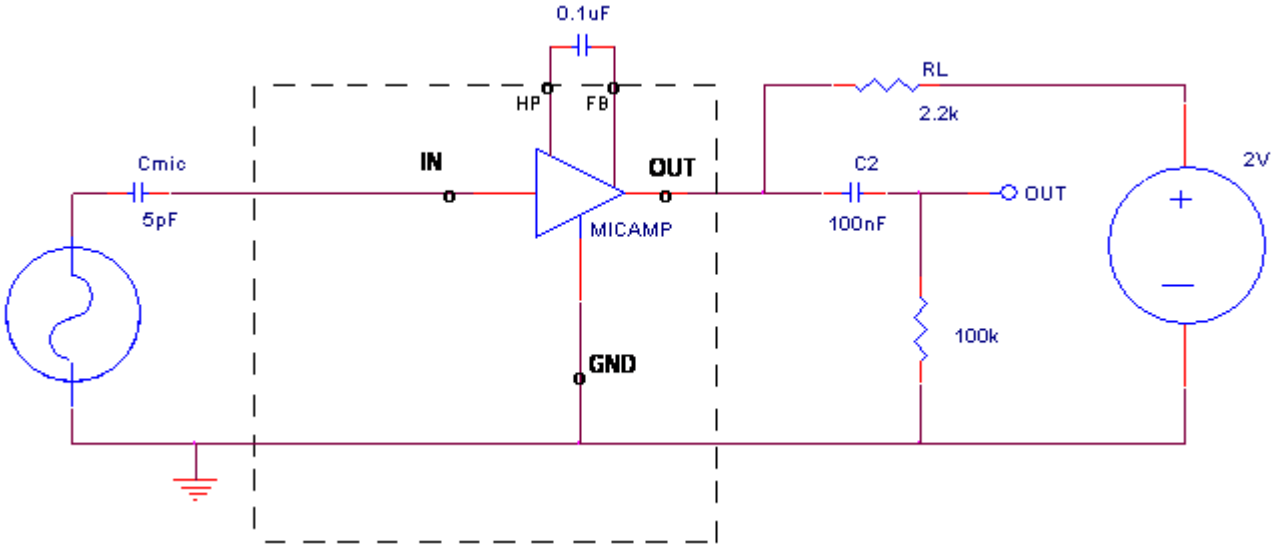
ORDERING INFORMATION

Ordering PN	Subgroup	Description	Temp. Range	Package	Packing Type	Packing Qty
AAP572A S-M6A-G-LF-W	Microphone ECM Interface	Pre-Amplifier, 14dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	Waffle-Pack	400
AAP572A S-M6A-G-LF-TR	Microphone ECM Interface	Pre-Amplifier, 14dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	T&R	3500
AAP572B S-M6A-G-LF-W	Microphone ECM Interface	Pre-Amplifier, 19dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	Waffle-Pack	400
AAP572B S-M6A-G-LF-TR	Microphone ECM Interface	Pre-Amplifier, 19dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	T&R	3500
AAP572C S-M6A-G-LF-W	Microphone ECM Interface	Pre-Amplifier, 26dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	Waffle-Pack	400
AAP572C S-M6A-G-LF-TR	Microphone ECM Interface	Pre-Amplifier, 26dB gain	S - Special -10°C to +60°C	6-pin Micro SMD	T&R	3500

Typical Circuit Application



Typical Test Conditions



MAXIMUM RATINGS

PARAMETER		PARAMETERS			UNITS	CONDITIONS
		MIN.	TYP.	MAX.		
Operating Voltage	AA572A	1.7	2.0	5.5	V	Between Out and GND
	AA572B/C	1.45	1.65	5.15	V	
ESD (Out Terminal)		8			kV	
Operating Temperature		-10		60	°C	

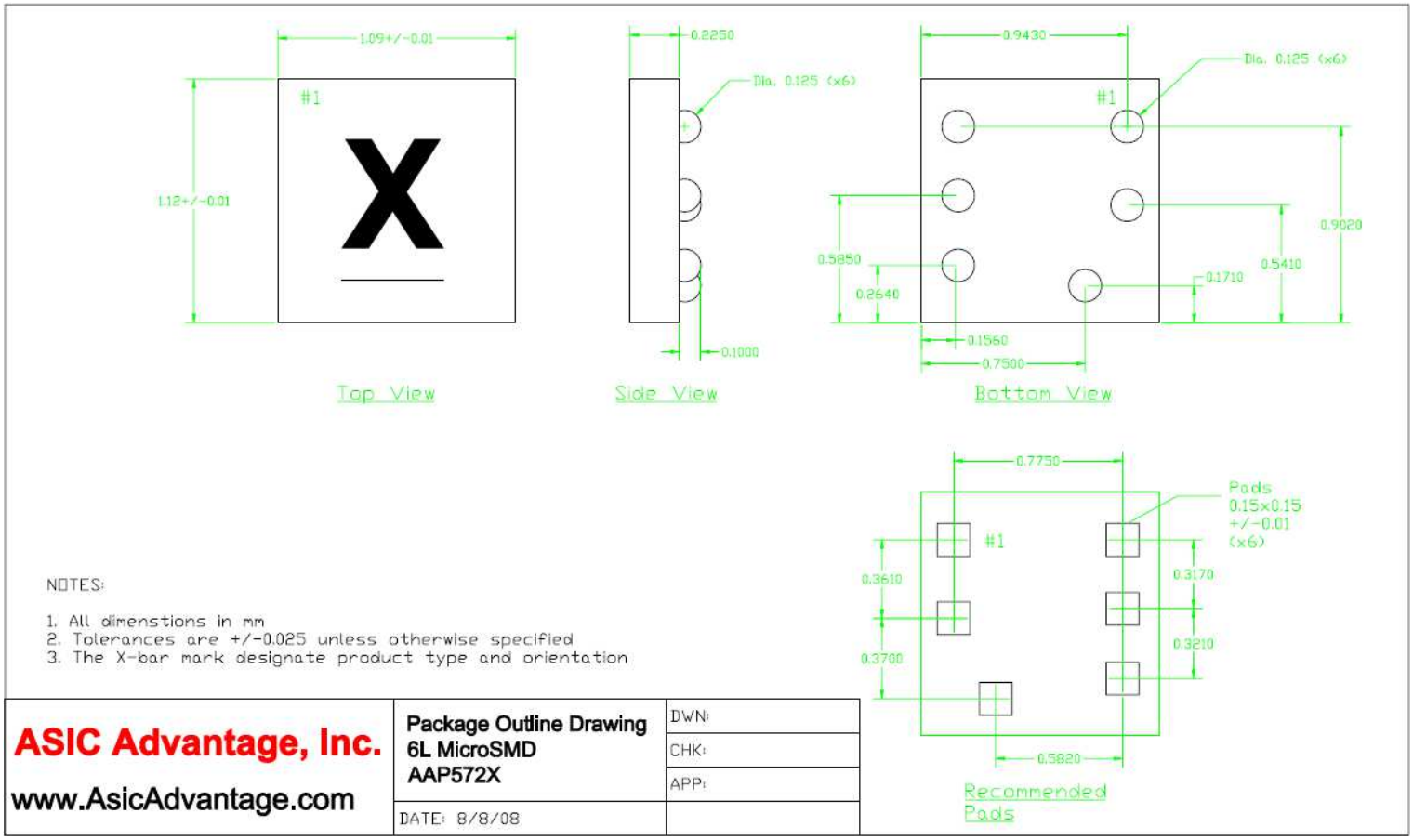
ELECTRICAL CHARACTERISTICS

PARAMETER		PARAMETERS			UNITS	CONDITIONS
		MIN.	TYP.	MAX.		
Input Capacitance			1		pF	Vin (dc) = 0V
Supply Voltage		1.7	2	5	V	
Quiescent Current	AA572A		270		µA	RL = 2.2kΩ, V_{supply} = 2V
	AA572B/C		400		µA	RL = 1kΩ, V_{supply}= 1.65V

AC CHARACTERISTICS

PARAMETER		PARAMETERS			UNITS	CONDITIONS	
		MIN.	TYP.	MAX.			
Voltage Gain (at 1kHz)	AA572A	13	14	15	dB	Cm= S.C.	Vsupply = 2V RL = 2.2kΩ
	AA572B	18	19	20		Cm= S.C.	Vsupply = 1.65V RL = 1kΩ
	AA572C	25.5	26	27			
Equivalent Input Noise	AA572A		2.65		µV RMS	Cm= S.C.	A weighted
			4.5			Cm= 5pF	
	AA572B		2.5			Cm= S.C.	
			4.6			Cm= 5pF	
	AA572C		2			Cm= S.C.	
			4.11			Cm= 5pF	
LF Cutoff			200		Hz	Cs = 100nF	
HF Cutoff			20		kHz		

THD (at 1kHz)			**<1**	**%**	**Output signal=250mV p-p**
Power Supply Rejection		**-50**		**dB**	
V_{OUT} max	**-15**			**dBV**	**THD < 2%**
V_{IN} max	**-28**			**dBV**	**THD < 2%**
Z_{OUT}		**25**		**Ω**	



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