

GENERAL DESCRIPTION

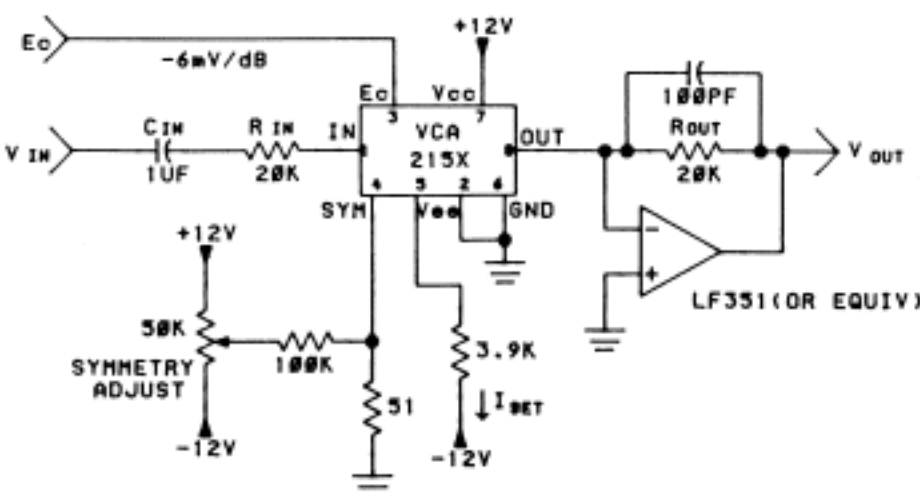
The dbx 2150 Series integrated-circuit, voltage-controlled amplifiers (VCAs) are high-performance, current-in/current-out devices with dual-polarity, voltage-sensitive control ports. They require little external support circuitry and are housed in a plastic 8-pin single-in-line (SIP) package, thereby affording unusually high PCB packing densities. Combining a high-gain-bandwidth product with low noise, low distortion, and low input-bias current, these devices offer performance similar to discrete or modular VCAs with the economy of ICs.

These VCAs may be used in VCF and VCO designs as well as in audio mixing console applications including voltage-controlled faders, voltage-controlled panners, voltage-controlled equalizers, and console automation systems.

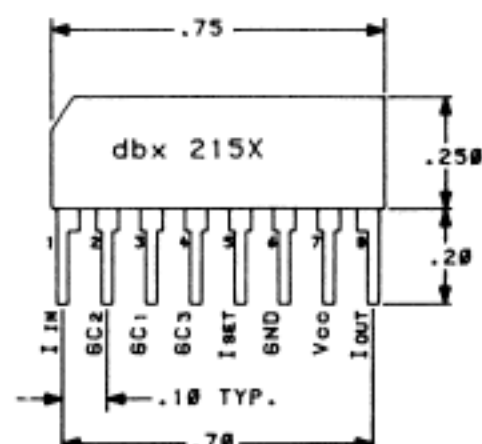
FEATURES

- Extremely wide gain/attenuation control
- Low distortion (2150A, 2151)
- Low noise
- 20Hz - 20kHz response even at high gains
- "Deci-linear" operation for logarithmic gain control
- SIP package for high density PCB designs
- Dual gain-control ports
- Low voltage operation, to 8 volt differential

TYPICAL CONNECTION



PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS

	<u>DESIGNATION</u>	<u>ABS MAX</u>	<u>UNIT</u>
Applied Supply Voltage*	V_{CC}, V_{ee}	30	V
Power Dissipation	P_D	330	mW
Operating Temperature	T_A	-10 to +65	$^{\circ}C$
Storage Temperature	T_{ST}	-40 to +125	$^{\circ}C$

RECOMMENDED OPERATING CONDITIONS

	<u>DESIGNATION</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNIT</u>
Supply Voltage	V_{CC}, V_{EE}	± 4	± 12	± 15	V
Bias Current	I set	-	3.0	4	mA
Signal Current	I Total ($I_{in} + I_{out}$)	-	175	750	μA

ELECTRICAL CHARACTERISTICS

$$(T_A = 25^{\circ}C)$$

	<u>DESIGNATION</u>	<u>CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNIT</u>
Equivalent Input Bias Current	I_{in}	No signal	-	5	8	nA
Gain Linearity		-60dB to +40dB	-	± 1	± 2	%
Output Noise (CCIR Weighting)	e_n	0dB gain ($R_{out} = 20K$)	-	-95	-90	dBV
		+15dB gain ($R_{out} = 20K$)	-	-86	-84	dBV
Gain Control Constant	E_C	-60dB to +40dB	5.8	5.9	6.0	mV/dB
Output Offset Voltage	V_{OS}	0dB gain ($R_{out} = 20K$)	-	± 1	± 3	mV
		15dB gain ($R_{out} = 20K$)	-	± 2	± 3	mV
		40dB gain ($R_{out} = 20K$)	-	± 10	± 15	mV
Intermodulation Distortion**	IM		-	.01	.02	%

* Voltage difference between V_{CC} & V_{ee} (pins 7 & 5)

** Measured with 10kHz and 12kHz mixed 1:1, expressed as:

$$\frac{2\text{kHz product level}}{\text{sum of 10kHz and 12kHz levels}} \times 100\%$$

(Continued)

	DESIGNATION	CONDITIONS	MIN	TYP	MAX	UNIT		
Total Harmonic Distortion	THD	1kHz, $I_{in} + I_{out} = 180\mu A$	--2151	0dB gain	-	.010	.020	%
				+15dB gain	-	.035	.045	%
		--2150A	0dB gain	-	.015	.030	%	
			+15dB gain	-	.050	.070	%	
		1kHz, $I_{in} + I_{out} = 150\mu A$	--2155	0dB gain	-	.015	.030	%
				+15dB gain	-	.050	.070	%

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

TYPICAL PERFORMANCE CHARACTERISTICS

