



LA6602V

I-V Amplifier for MiniDisc Drives

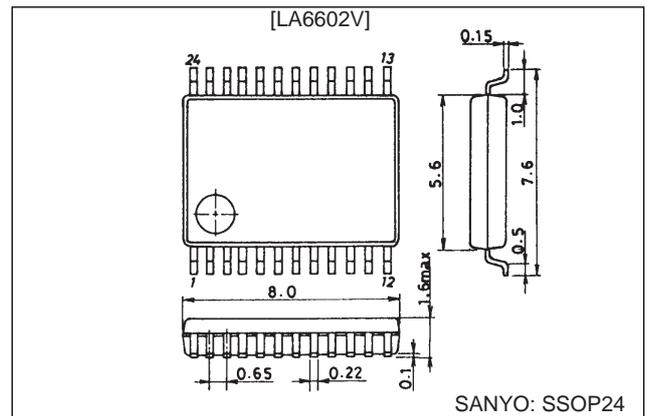
Features

- The LA6602V is optimal as an interface IC between the PD and servo ICs used in MD PU modules.
- Eight buffer amplifier channels
- On-chip low-noise high-bandwidth amplifier RF block

Package Dimension

unit: mm

3175A-SSOP24



Specifications

Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		13.0	V
Allowable power dissipation	P_d max	Independent IC	300	mW
Operating temperature	T_{opr}		-30 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		3.6 to 12.0	V

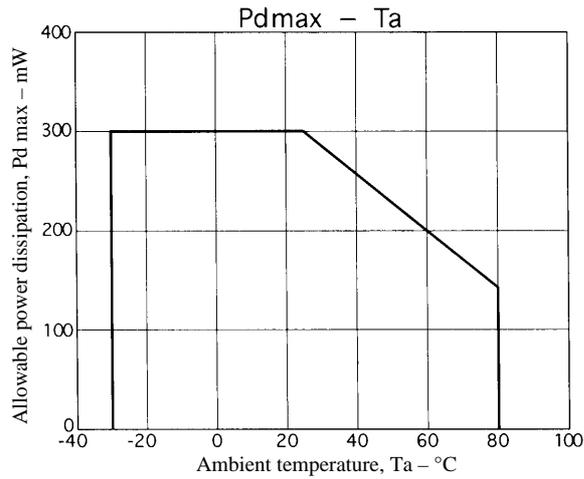
Operating Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC}/V_{EE} = \pm 2.5$ V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CCO}	See Figure 1.	5	10	20	mA
[Amplifiers A through D]						
Output offset voltage	V_{IO}	See Figure 2.		2	7	mV
Maximum output voltage	V_O max	$R_L = 4.7$ k Ω , $V_{IN} = -1$ V See Figure 3.	2.0			V
Minimum output voltage	V_O min	$R_L = 4.7$ k Ω , $V_{IN} = +1$ V See Figure 4.			-2.0	V
Gain-bandwidth product	f_T	20 [dB] amp GV = 0 [dB] See Figure 4.	0.5	0.7		MHz
[Amplifiers E and F]						
Output offset voltage	V_{IO}	See Figure 2.		2	7	mV
Maximum output voltage	V_O max	$R_L = 4.7$ k Ω , $V_{IN} = -1$ V See Figure 3.	2.0			V
Minimum output voltage	V_O min	$R_L = 4.7$ k Ω , $V_{IN} = +1$ V See Figure 4.			-2.0	V
Gain-bandwidth product	f_T	20 [dB] amp GV = 0 [dB] See Figure 4.	0.5	0.7		MHz
[Amplifiers I and J]						
Output offset voltage	V_{IO}	See Figure 2.		20	50	mV
Output offset voltage difference	V_{IO} I-J			3	7	mV
Maximum output voltage	V_O max	$R_L = 2$ k Ω , $V_{IN} = -1$ V See Figure 3.	1.5			V
Minimum output voltage	V_O min	$R_L = 2$ k Ω , $V_{IN} = +1$ V See Figure 4.			-1.5	V
Gain-bandwidth product	f_T	20 [dB] amp GV = 0 [dB] See Figure 4.	6	8		MHz

SANYO Electric Co., Ltd. Semiconductor Business Headquarters

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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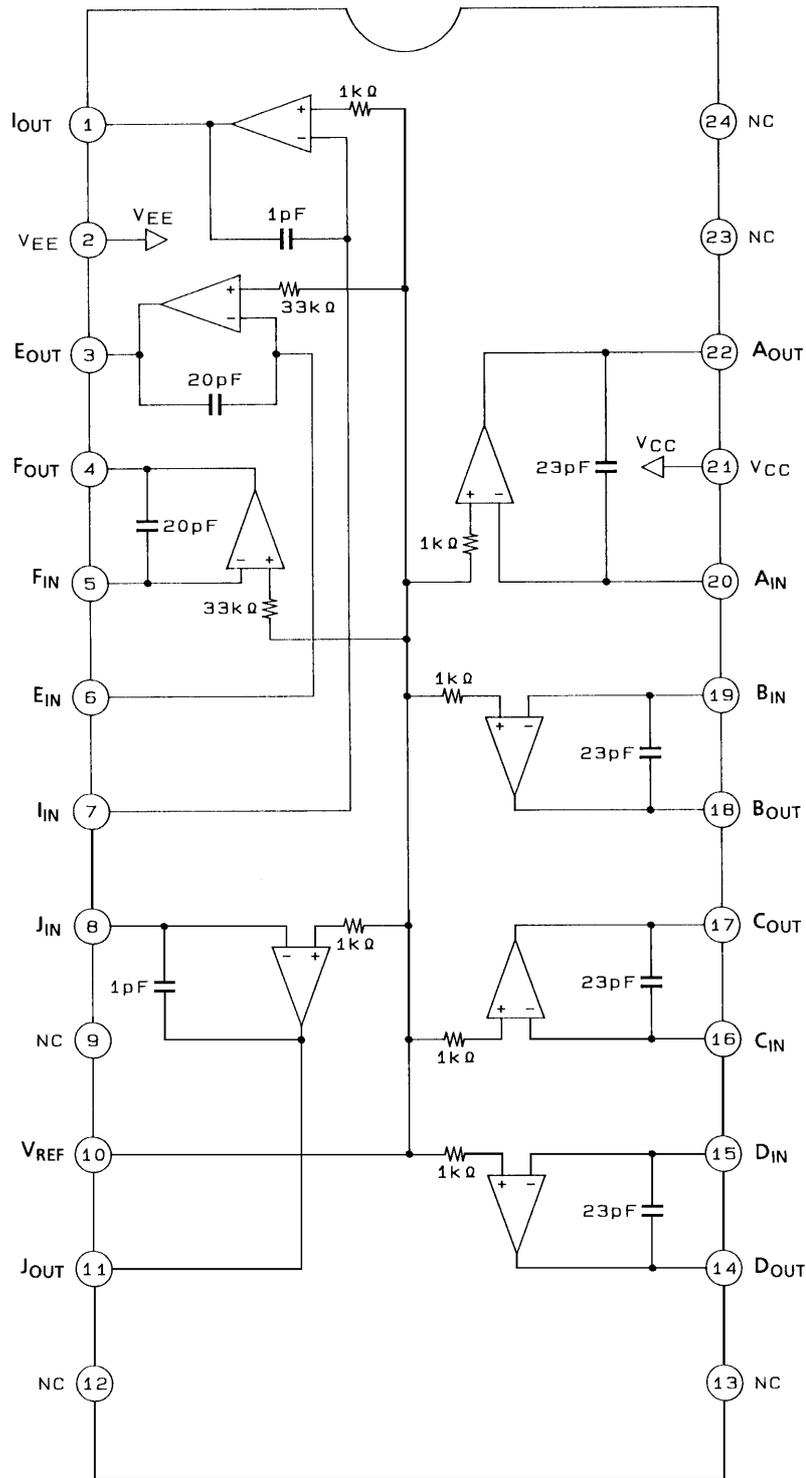


Pin Functions

Pin No.	Pin	Function
1	I _{OUT}	IV amplifier I output
2	V _{EE}	IC substrate (lowest) voltage
3	E _{OUT}	IV amplifier E output
4	F _{OUT}	IV amplifier F output
5	F _{IN}	IV amplifier F input
6	E _{IN}	IV amplifier E input
7	I _{IN}	IV amplifier I input
8	J _{IN}	IV amplifier J input
9	NC	Unused. Must be left open.
10	V _{REF}	External reference voltage
11	J _{OUT}	IV amplifier J output
12	NC	Unused. Must be left open.
13	NC	Unused. Must be left open.
14	D _{OUT}	IV amplifier D output
15	D _{IN}	IV amplifier D input
16	C _{IN}	IV amplifier C input
17	C _{OUT}	IV amplifier C output
18	B _{OUT}	IV amplifier B output
19	B _{IN}	IV amplifier B input
20	A _{IN}	IV amplifier A input
21	V _{CC}	Power-supply voltage
22	A _{OUT}	IV amplifier A output
23	NC	Unused. Must be left open.
24	NC	Unused. Must be left open.

LA6602V

Block Diagram



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Stipulated Test Circuits

I_{CC0}

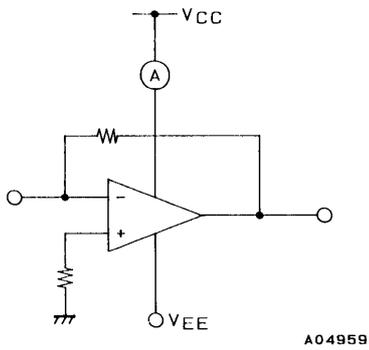


Figure 1

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V_{I0}

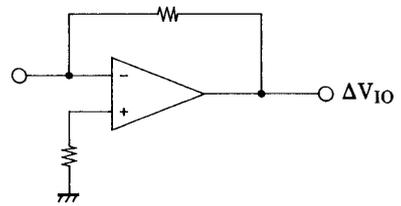
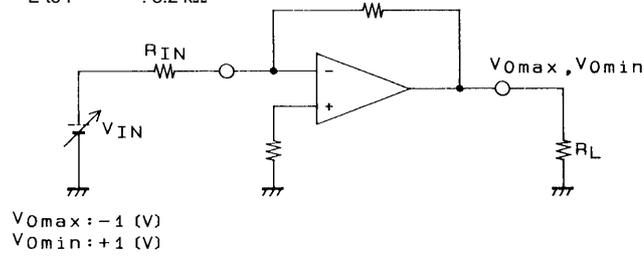


Figure 2

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V_{Omax}, V_{Omin}

R_{IN} A to D, I to J : 6.7 k Ω
E to F : 8.2 k Ω



$R_L = 4.7$ k Ω (A to F)
 2 k Ω (I to J)

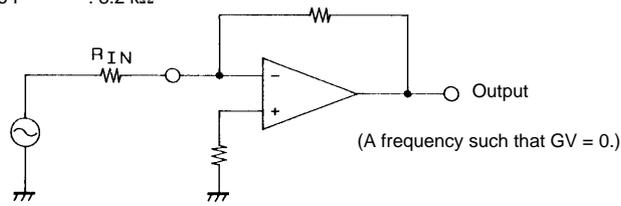
$V_{Omax} : -1$ (V)
 $V_{Omin} : +1$ (V)

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Figure 3

f_T

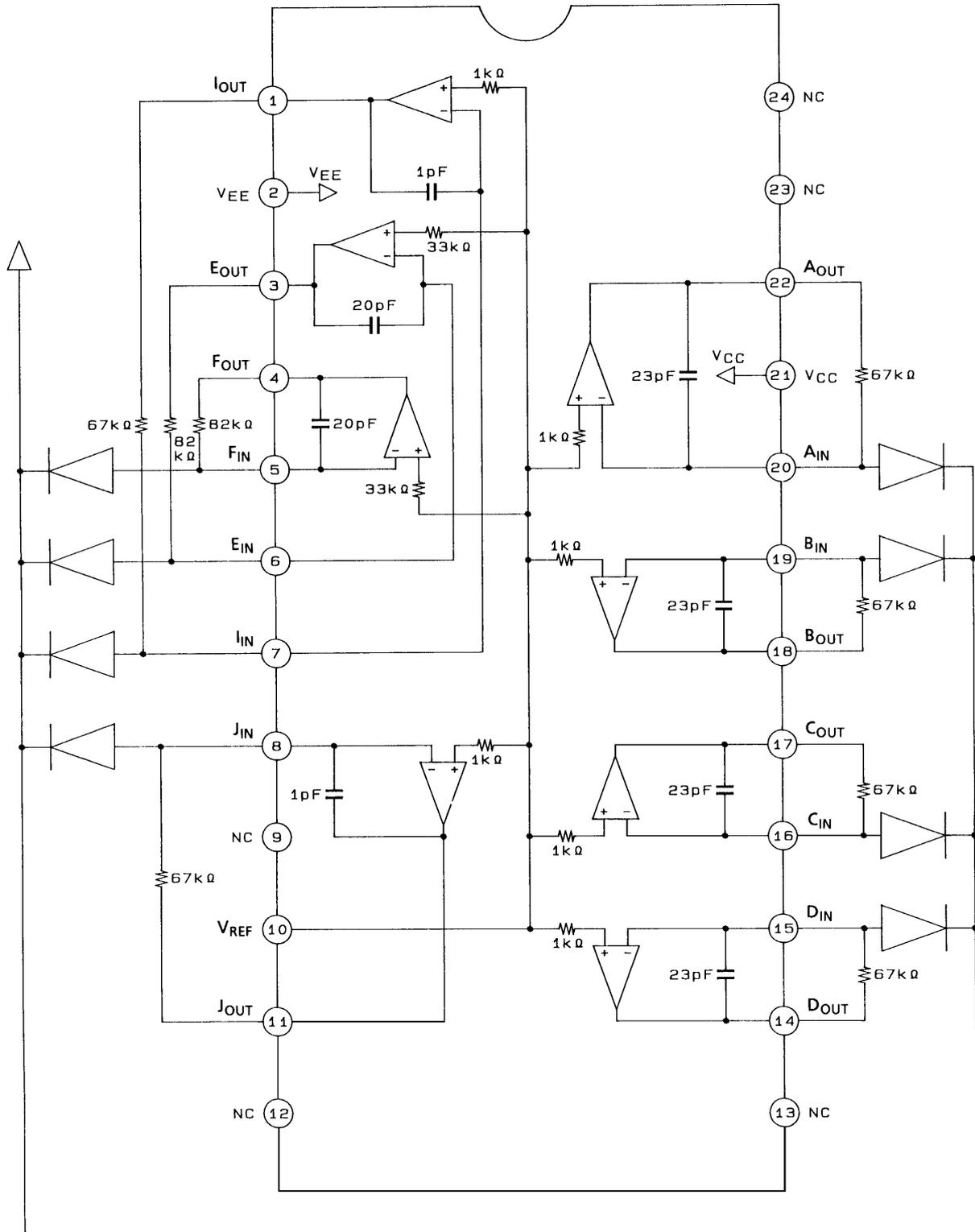
R_{IN} A to D, I to J : 6.7 k Ω
E to F : 8.2 k Ω



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Figure 4

Sample Application Circuit



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