

### UNBALNCEC TO BALANCES SIGNAL CONVERTER

The KIA2026F is unbalanced to balanced signal converter IC for component type car audio equipments. Noise level of audio signal increases by ground noise and induction noise wile transfered between head unit and other equipments.

To reduce these effect, balanced signal transfer system is effective. KIA2026F have built-in dual balanced signal output amplifier and audio muting circuit.

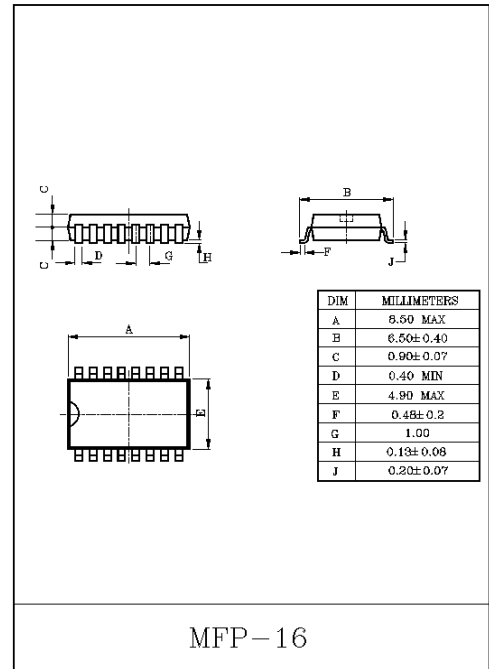
### FEATURES

- Dual Channel
- Voltage Gain :  $G_V=6\text{dB(Typ.)}$
- Maximum Output Voltage  
:  $V_{OM}=3V_{rms}$  (Typ.)  
( $V_{CC}=8\text{V}$ ,  $f=1\text{kHz}$ ,  $\text{THD}=0.1\%$ )
- Total Harmonic Distortion  
:  $\text{THD}=0.004\%$  (Typ.)  
( $V_{CC}=8\text{V}$ ,  $f=1\text{kHz}$ ,  $V_{out}=1V_{rms}$ )
- Output Noise Voltage  
:  $V_{NO}=1.8\mu V_{rms}$  (Typ.)  
( $V_{CC}=8\text{V}$ ,  $R_g=620\Omega$ ,  $\text{BW}=20\text{Hz}\sim 20\text{kHz}$ )
- Audio Muting Circuit  
:  $\text{ATT}=-90\text{dB}$  (Typ.)
- Operating Supply Voltage Range.  
:  $V_{CC(oper)}=5\sim 12\text{V}$  ( $T_a=25^\circ\text{C}$ )

### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

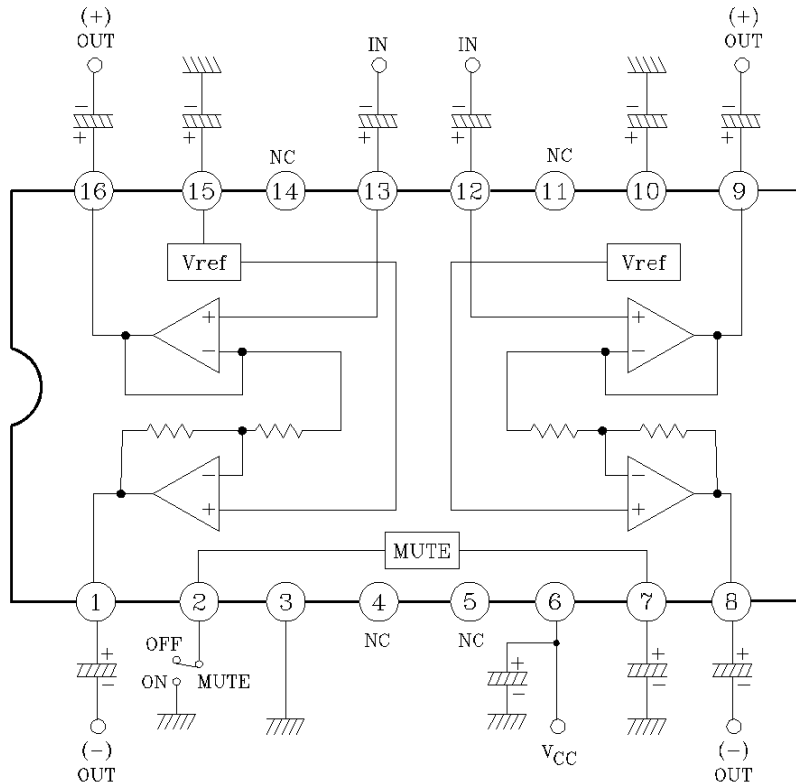
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	15	V
Power Dissipation	$P_D$ (Note)	350	mW
Operating Temperature	$T_{opr}$	$-30\sim 85$	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55\sim 150$	$^\circ\text{C}$

Note) Derated above  $T_a=25^\circ\text{C}$  in the proportion of  $2.8\text{mW}/^\circ\text{C}$  for KIA2026F.



# KIA2026F

## BLOCK DIAGRAM



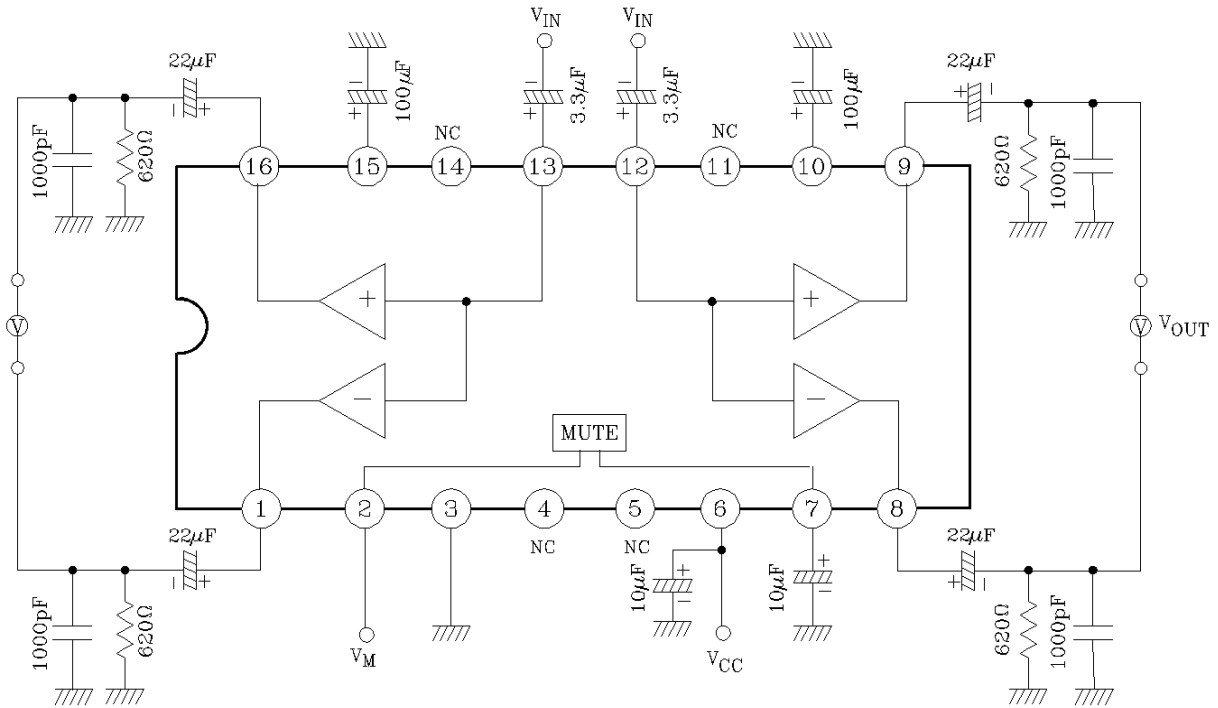
## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $V_{CC1}=9V$ ,  $V_{CC2}=24V$ ,  $T_a=25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	$I_{CCQ}$	-	$V_{IN}=0$	6	11	17	mA
Voltage Gain	$G_V$	-	Balanced output gain	4.0	5.7	8.0	dB
	$G_{V(+)}$	-	Non-interting gain	-1.5	-0.5	0.5	
	$G_{V(-)}$	-	Inverting gain	-1.5	-0.5	0.5	
Gain Tracking	$\Delta G_V$	-	$G_{V(+)} - G_{V(-)}$	-1.0	0	1.0	dB
Maximum Output Voltage	$V_{om}$	-	THD=0.1%	2.5	3.1	-	$V_{rms}$
Total Harmonic Distortion	THD	-	$V_{OUT}=1V_{rms}$	-	0.004	0.01	%
Output Noise Voltage	$V_{no}$	-	$R_g=620\Omega$ , Filter BW=20Hz~20kHz	-	1.8	3.0	$\mu V_{rms}$
Cross Talk	C.T.	-	$V_{out}=2V_{rms}$	-	-70	-60	dB
Ripple Rejection Ratio	R.R.	-	$V_{rip}=1V_{rms}$ , $f_{rip}=100Hz$ , $R_g=620\Omega$	-	-60	-50	dB
Mute Attenuation	ATT	-	Ref : $V_{out}=2V_{rms}$	-	-90	-80	dB
Mute On Control Voltage	$V_{M ON}$	-	MUTE=ON	0	-	1.0	V
	$V_{M OFF}$	-	MUTE=OFF	3.0	-	$V_{CC}$	
Input Resistance	$R_{IN}$	-	-	-	100	-	k $\Omega$

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## TEST CIRCUIT



## APPLICATION CIRCUIT

