

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 will be transferred between head unit and other equipments.

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

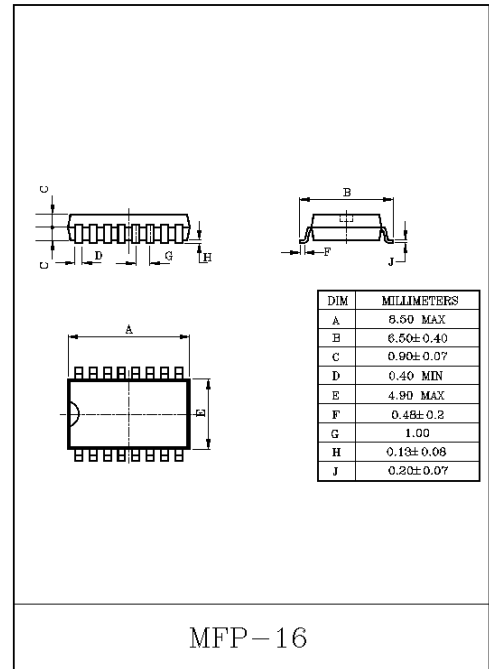
FEATURES

- 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 ($T_a=25^\circ\text{C}$)

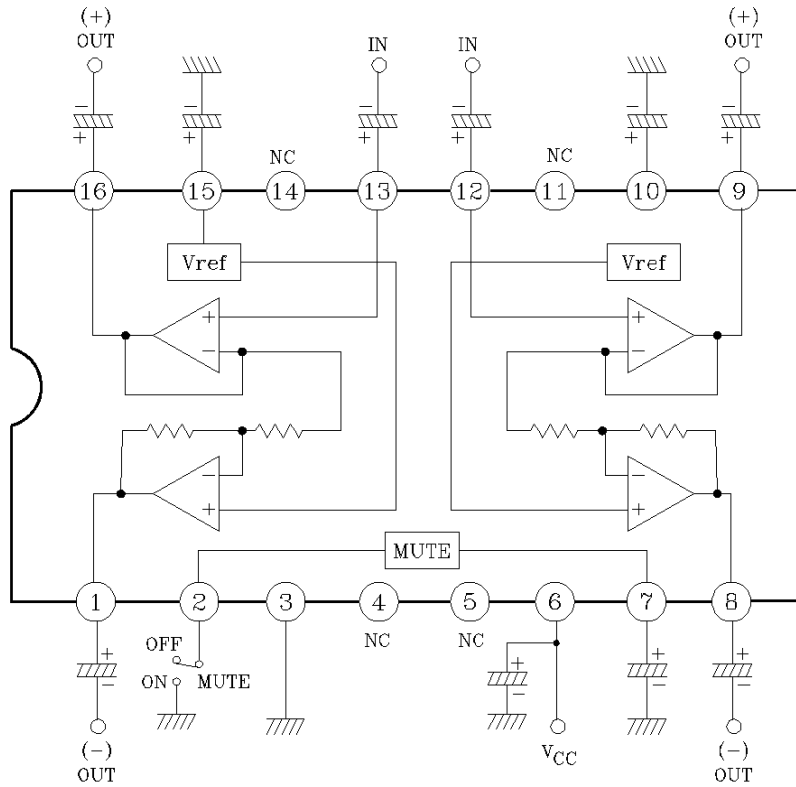
CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	15	V
Power Dissipation	P_D (Note)	350	mW
Operating Temperature	T_{opr}	$-30\sim 85$	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55\sim 150$	$^\circ\text{C}$

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



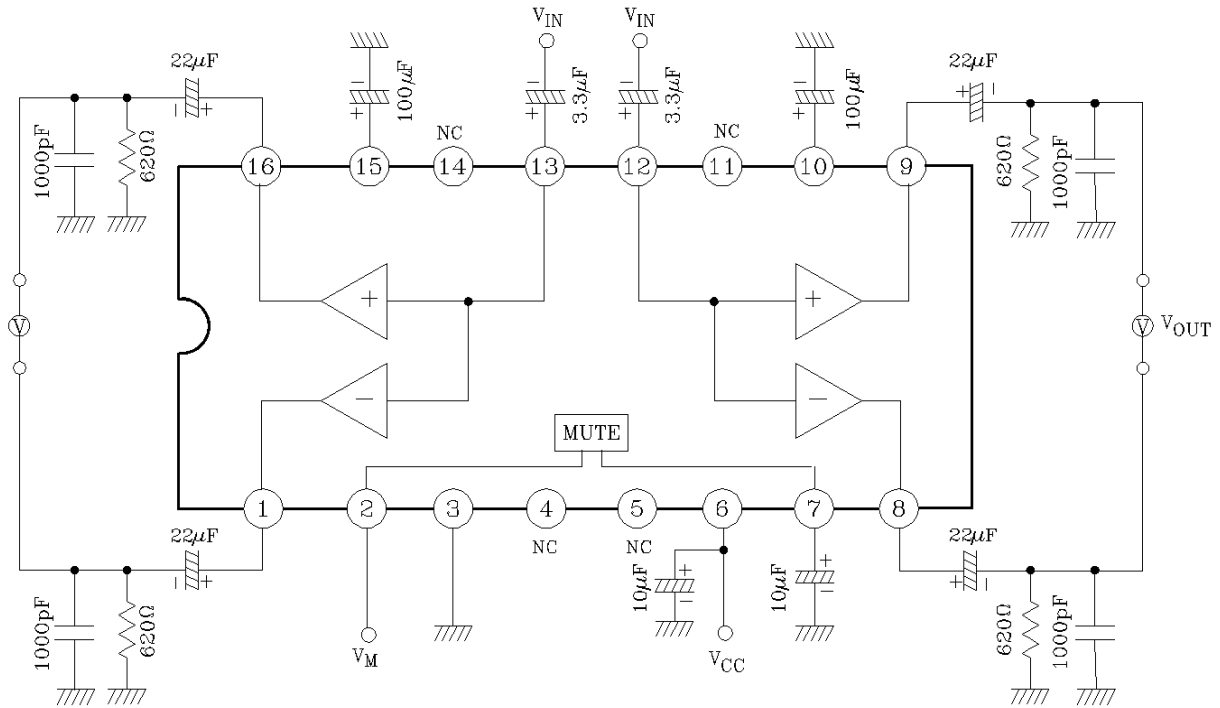
ELECTRICAL CHARACTERISTICS

(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	ΔG_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	μV_{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 Ω

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TEST CIRCUIT



APPLICATION CIRCUIT

