

KKA1519B

2 x 6 Watt Stereo Power Amplifier

The KKA1519B is an integrated class-B dual output amplifier in a 9-lead single in-line (SIL) plastic medium power package. The device is primarily developed for car radio applications.

FEATURES

- Requires very few external components
- Thermally protected
- High output power
- Reverse polarity safe
- Fixed gain
- Compatible with TDA1517 (except gain)
- Good ripple rejection
- No switch-on/switch-off plop
- Mute/stand-by switch
- Protected against electrostatic discharge
- Load dump protection
- AC and DC short-circuit-safe to ground and V_p
- Capability to handle high energy on outputs ($V_p = 0\text{ V}$)

QUICK REFERENCE DATA

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP.	MAX.	UNIT
Supply voltage range						
operating	V_p		6,0	14,4	18,0	V
non-operating	V_p		-	-	30	V
load dump protected	V_p		-	-	45	V
Repetitive peak output current	I_{ORM}		-	-	2,5	A
Total quiescent current	I_{tot}			40	80	mA
Stand-by current	I_{sb}			0,1	100	mA
Switch-on current	I_{sw}				40	mA
Input impedance	$ Z_i $		50			k Ω
Output power		THD= 0,5%;4 Ω		5		W
		THD=10%;4 Ω		6		W
Channel separation	α		40			dB
Noise output voltage	$V_{no(rms)}$				150	μ V
Supply voltage ripple rejection	SVRR	f=100Hz	40			dB
	SVRR	f=1kHz to 10 kHz	48			dB
Crystal temperature	T_c				150	$^{\circ}$ C

PACKAGE OUTLINE: 9-lead SIL-bent-to-DIL; plastic (SOT110B).

PAD DESCRIPTION

1	INV1	non-inverting input 1
2	GND1	ground (signal)
3	SVRR	supply voltage ripple rejection
4	OUT1	output 1
5	GND2	ground (substrate)
6	OUT2	output 2
7	V_p	supply voltage
8	M/SS	mute/stand-by switch
9	INV2	non-inverting input 2

DC ELECTRICAL CHARACTERISTICS (note 1)

 $V_p = 14,4 \text{ V}$; $T_{amb} = 25 \text{ }^\circ\text{C}$; unless otherwise specified

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP.	MAX.	UNIT
Supply						
Supply voltage range	note 2	V_p	6,0	14,4 40 6,95	18,0	V
Quiescent current		I_P	-		80	mA
DC output voltage	note 3	V_O	-		-	V
Mute/stand-by switch						
Switch-on voltage level	see Fig.3	V_{ON}	8,5	-	-	V
Mute condition						
Output signal in mute position	$V_I = 1 \text{ V (max.)}$; $f = 20 \text{ Hz to } 15 \text{ kHz}$	V_{mute}	3,3	-	6,4	V
		V_O	-	-	20	mV
Stand-by condition						
DC current in stand-by condition		V_{sb}	0	12	2 100 40	V
		I_{sb}	-			μA
		I_{sw}	-			μA
Switch-on current						

AC CHARACTERISTICS (note 1)

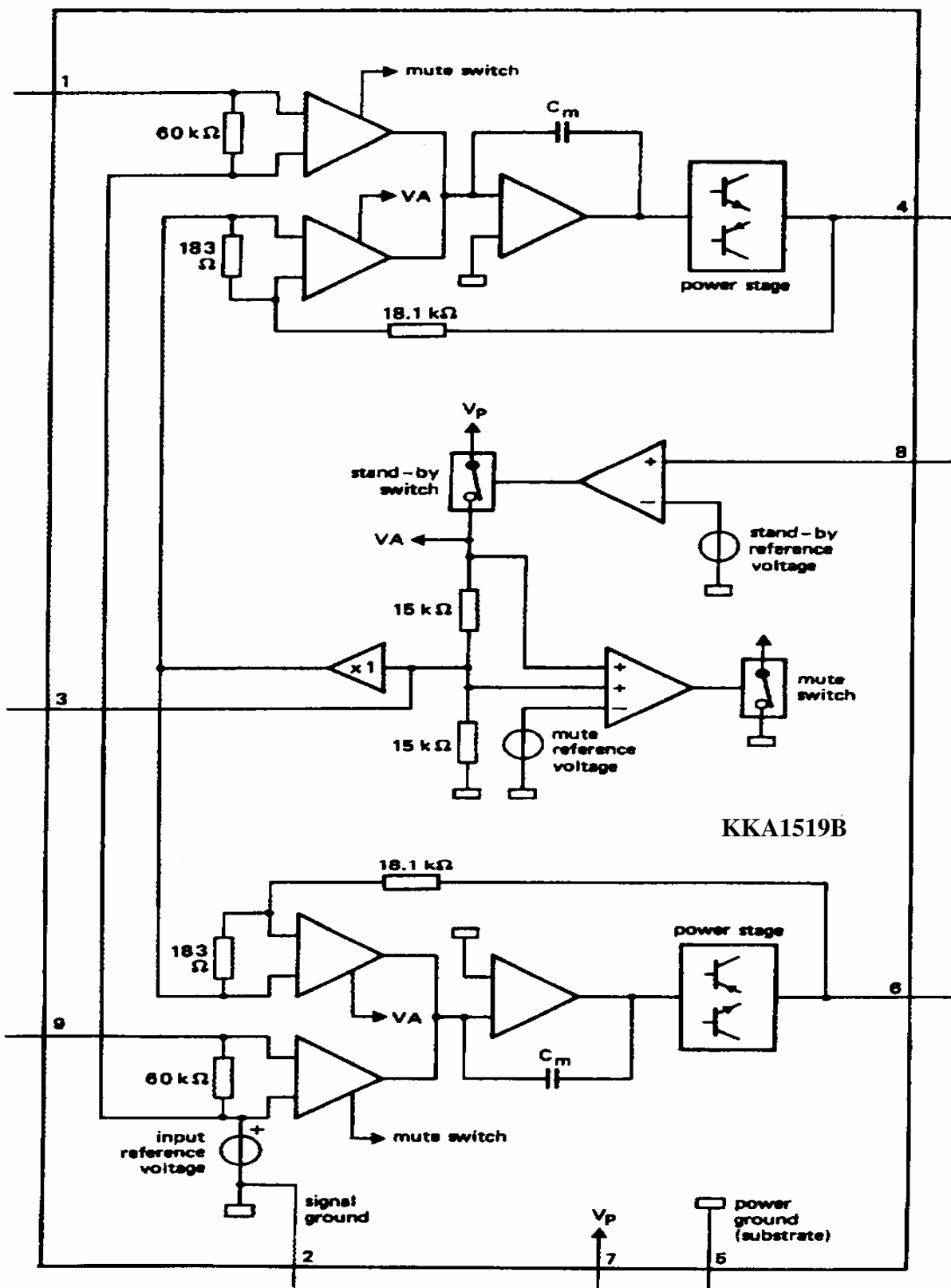
 $V_p = 14,4 \text{ V}$; $R_L = 4 \Omega$; $f = 1 \text{ kHz}$; $T_{amb} = 25 \text{ }^\circ\text{C}$ unless otherwise specified

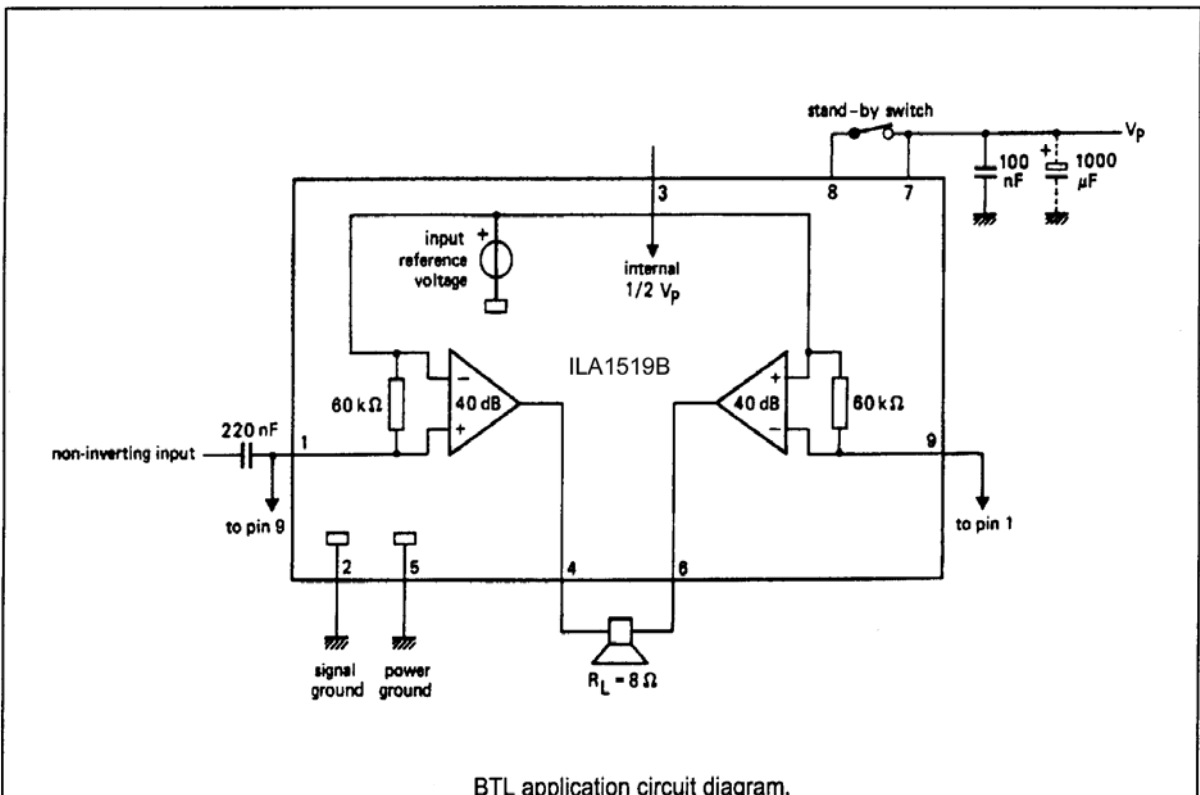
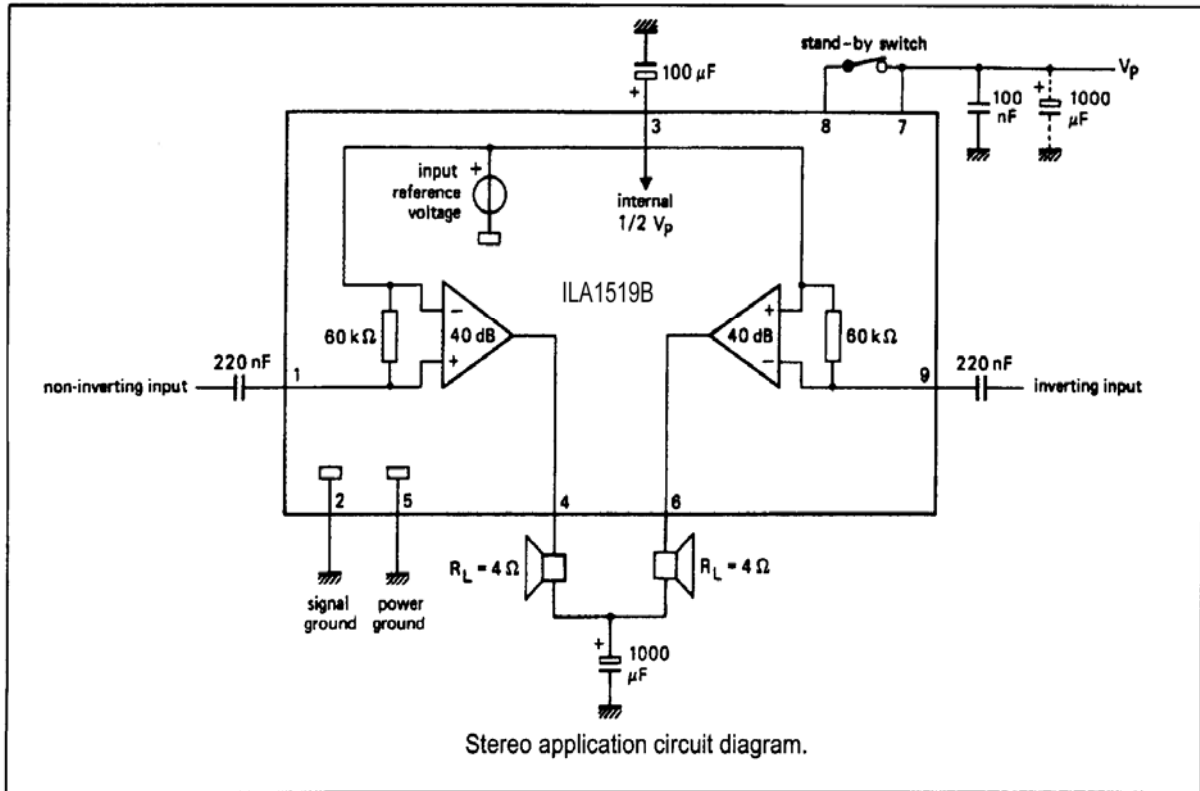
PARAMETER	CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Output power	note 4;					
	THD = 0,5%	P_O	4	5	-	W
	THD = 10%	P_O	5,5	6,0 0,1	-	W
Total harmonic distortion	$P_O = 1 \text{ W}$	THD	-		-	%
Low frequency roll-off	note 5;			45		
	-3 dB	f_L	-	-	-	Hz
High frequency roll-off	-1 dB	f_H	20	40	-	kHz
Closed loop voltage gain		G_V	39		41	dB
Supply voltage ripple rejection	note 6					
ON				-		
ON	$f = 100 \text{ Hz}$	SVRR	40	-	-	dB
	$f = 10 \text{ Hz to } 10 \text{ kHz}$	SVRR	48	-	-	dB
mute		SVRR	48	-	-	dB
stand-by		SVRR	80	60	-	dB
Input impedance		$ Z_{il} $	50		75	k Ω
Noise output voltage	note 7;			150		
ON	$R_S = 0 \Omega$	$V_{no(rms)}$	-	250	-	mV
ON	$R_S = 10 \text{ k}\Omega$	$V_{no(rms)}$	-	120	500	mV
mute	note 8	$V_{no(rms) a}$	-	-	-	mV
Channel separation	$R_S = 10 \text{ k}\Omega$	IDGvl	40	0,1	-	dB
Channel balance			-		1	dB

Notes to the characteristics

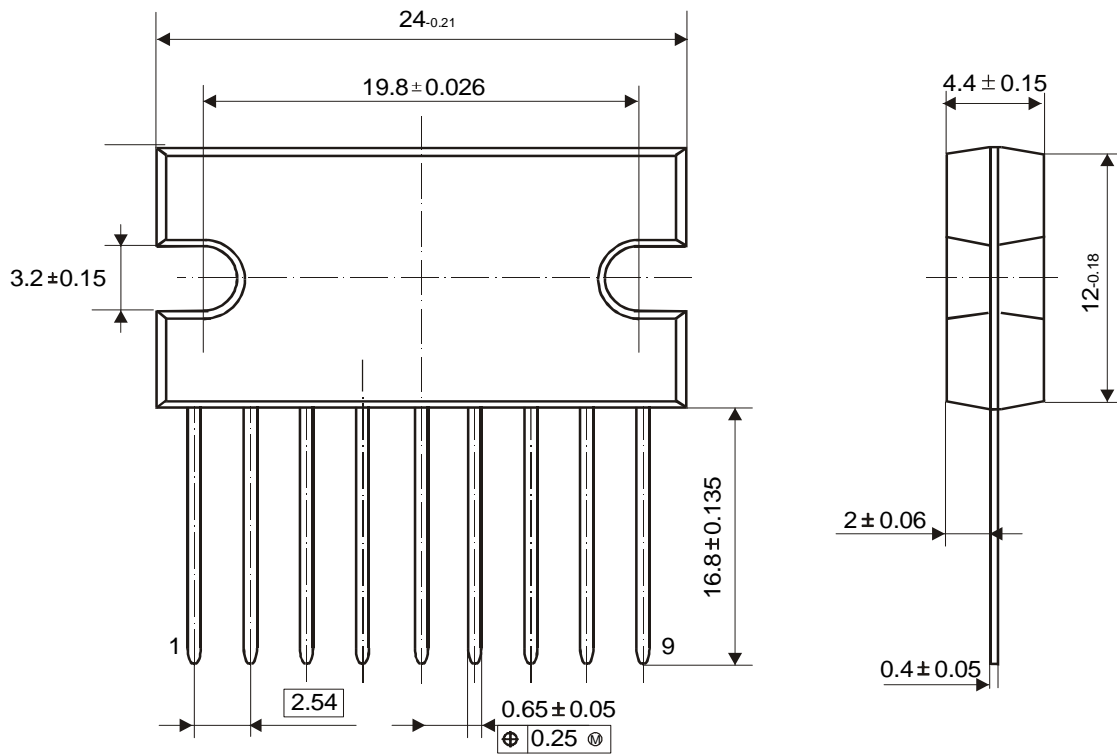
- All characteristics are measured using the circuit shown in Fig. 4.
- The circuit is DC adjusted at $V_p = 6 \text{ V to } 18 \text{ V}$ and AC operating at $V_p = 8,5 \text{ V to } 18 \text{ V}$.
- At $18 \text{ V} < V_p < 30 \text{ V}$ the DC output voltage $< V_p/2$.
- Output power is measured directly at the output pins of the IC.
- Frequency response externally fixed.
- Ripple rejection measured at the output with a source impedance of 0 ^\wedge (maximum ripple amplitude of 2 V) and a frequency between 100 Hz and 10 kHz.
- Noise voltage measured in a bandwidth of 20 Hz to 20 kHz.
- Noise output voltage independent of $R \text{ }^\wedge$ ($V_j = 0 \text{ V}$).

BLOCK DIAGRAM

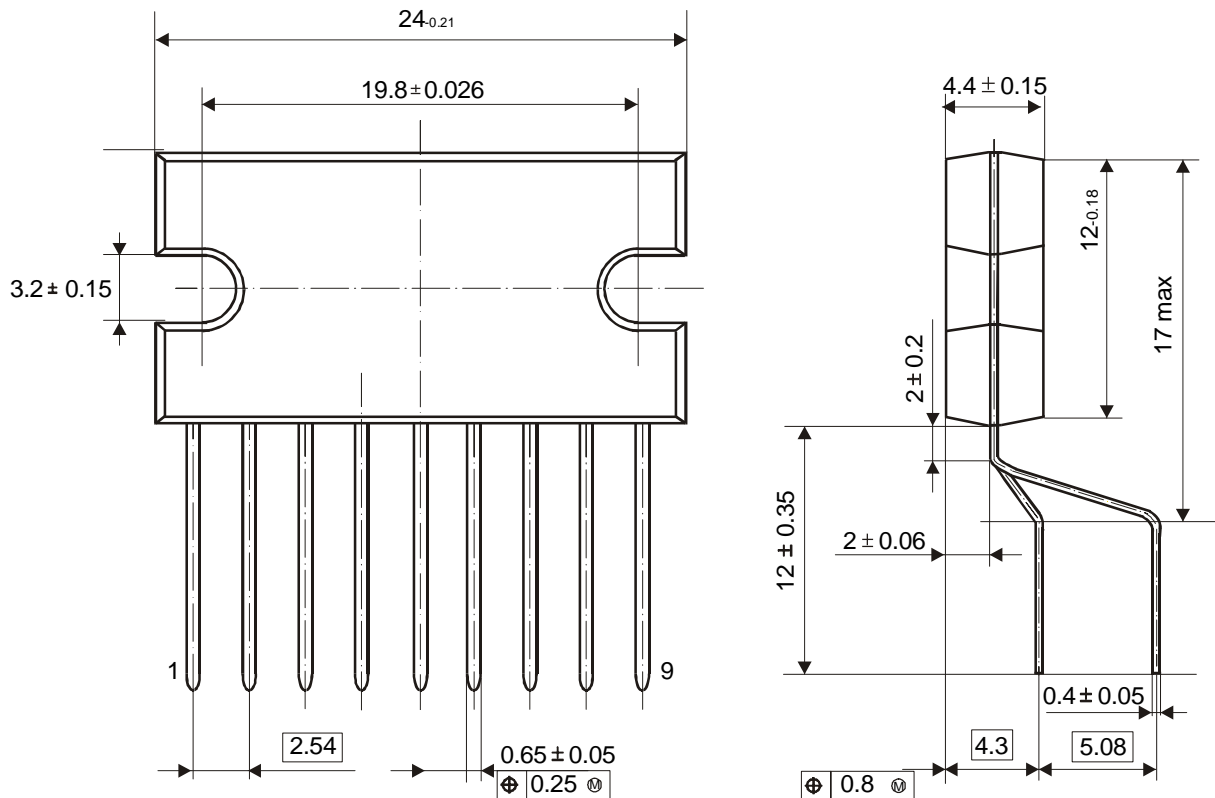




● 9-Pin Plastic Power Single-in-Line (SIL-9MPF, SOT 131-2)



● 9-Pin Plas (SIL-9P, SOT 157-2)



• 9-Pin Plastic Power Single-in-Line (SIL-9MPF, SOT 110-1)

