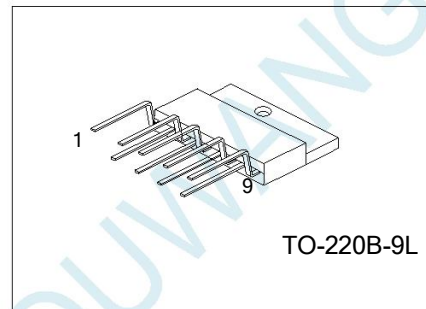


2×6 W STEREO POWER AMPLIFIER**DESCRIPTION**

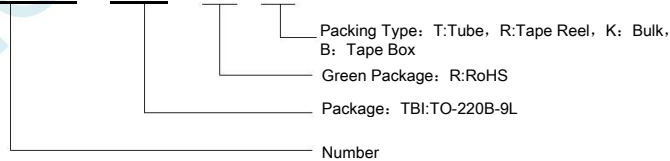
The TDA1028 is an integrated class-B dual output amplifier in a 9-lead single in-line (TO-220B-9L) plastic power package. The device is primarily developed for car radio applications.

FEATURES

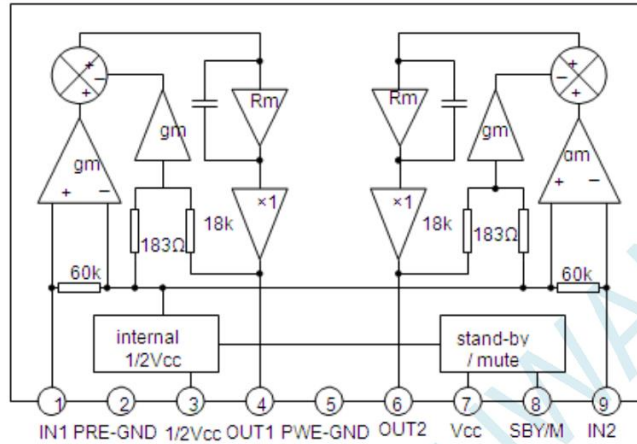
- * Requires very few external components for Bridge Tied Load (BTL), Stereo or BTL application
- * High output power, Fixed gain, Good ripple rejection
- * Identical inputs (inverting and non-inverting), Low offset voltage at output (important for BTL)
- * Mute/stand-by switch, No switch-on/switch-off pop
- * Load dump protection, AC and DC short-circuit-safe to ground and Vcc, Thermally protected
- * Reverse polarity safe
- * Capability to handle high energy on outputs (Vcc=0V)
- * Protected against electrostatic discharge

**ORDERING INFORMATION**

Ordering Number	Package	Print Number	Free	Packing
TDA1028-TBI-R-T	TO-220B-9L	TDA1028	RoHS	Tube

TDA1028 - TBI - R - T

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta=25 C)

Parameters	Symbol	Test Conditions	Value	Unit
Supply Voltage Operating	V_I-V_O		18	V
Non-operating	T_{LEAD}		20	V
AC And DC Shot-circuit-safe Voltage	$V_{P(SC)}$		18	V
Reverse Polarity	$V_{P(r)}$		6	V
Non-repetitive Peak Output Current	I_{OSM}		4	A
Repetitive Peak Output Current	I_{ORM}		2.5	A
Total Power Dissipation	P_D	Infinite Heat Sink	20	W
		No Heat Sink	4.0	
Operating Temperature	T_{opr}		-20 ~ +75	C
Storage Temperature	T_{stg}		-55 ~ +150	C

ELECTRICAL CHARACTERISTICS

DC CHARACTERISTICS(Vcc=13.2V, Tamb=25 C, BTL, unless otherwise specified)

Parameters	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Supply Voltage Range	Vcc		7.0	13.2	18.0	V
Total Quiescent Current	Iccq			40	60	mA
DC Output Voltage	Vo			6.2		V
DC Output Offset Voltage	$ \Delta V_{4-6} $	Operating/Mute			250	mV
Switch-on Voltage Level	VON	Operating	8.5			V
Mute Condition	Vmute	Mute	3.3		6.4	V
Stand-by Condition	Vst-by	Stand-by			2.0	V
DC Current in Stand-by	Iccsb	V8≤2.0V			100	μA
Control Current in Stand-by	I8sb	V8≤2.0V		12	40	μA

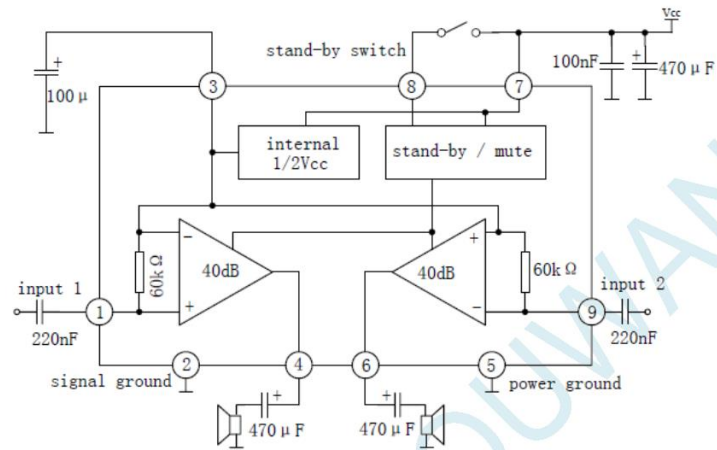
AC CHARACTERISTICS(V_{CC}=13.2V, R_L=4Ω, f=1KHz, T_{amb}=25 °C; BTL, unless otherwise specified)

Parameters	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Output Power	Po	THD=1.0%	12	13		W
		THD=10%	16	18		W
Closed Loop Voltage Gain	Gv		45	46	47	dB
Total Harmonic Distortion	THD	Po =1W		0.1		%
Output Signal In Mute Position	Vo	Vin=1V(max.); f=20 Hz to 15 kHz			40	mV
Low Frequency Roll-off	fL	-3dB		45		Hz
High Frequency Roll-off	fH	-3dB	20			kHz
Supply Voltage Ripple Rejection	RR	ON, Vr=2Vp-p, Rg=0, fr=100Hz	34			dB
		ON, Vr=2Vp-p, Rg=0, fr=1kHz~10kHz	48			dB
		Mute	48			dB
		Stand-by	80			dB
Input Impedance	Zi		25	30	38	kΩ
Noise Output Voltage (RMS value)	Vno	ON, Rg=0Ω, BPF=20Hz~20kHz		200		μV
		ON, Rs=10kΩ, BPF=20Hz~20kHz		350	700	μV
		Mute, BPF=20Hz~20kHz		180		μV

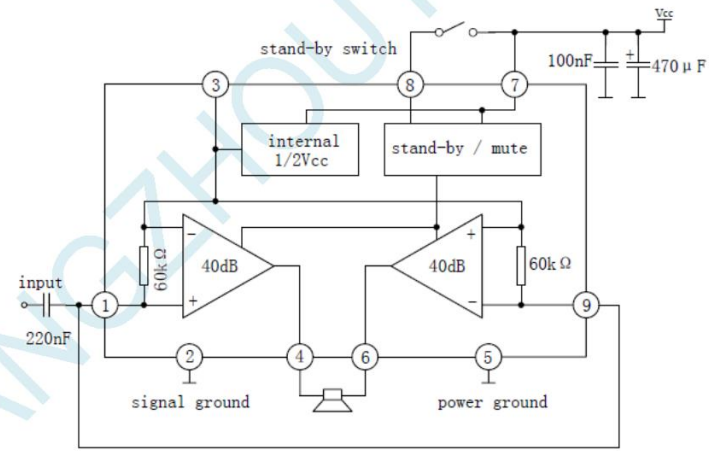
AC CHARACTERISTICS(V_{CC}=13.2V, R_L=4Ω, f=1KHz, T_{amb}=25 °C; stereo, unless otherwise specified)

Parameters	Symbol	Test Conditions	MIN	TYP	MAX	Unit
Output Power	Po	THD=1.0%		8.0		W
		THD=10%		9.0		W
Output Power (V _{CC} =14.4V)	Po	R _L =4Ω, THD=1.0%	4.8	5.0		W
		R _L =4Ω, THD=10%	5.8	6.2		W
Closed Loop Voltage Gain	Gv		39	40	41	dB
Total Harmonic Distortion	THD	Po =1W		0.1		%
Output Signal In Mute Position	Vo	Vin=1V(max.); f=20 Hz to 15 kHz			20	mV
Low Frequency Roll-off	fL	-3dB		45		Hz
High Frequency Roll-off	fH	-3dB	20			kHz
Supply Voltage Ripple Rejection	RR	ON, Vr=2Vp-p, Rg=0, fr=100Hz	40			dB
		ON, Vr=2Vp-p, Rg=0, fr=1kHz~10kHz	45			dB
		Mute	45			dB
		Stand-by	80			dB
Input Impedance	Zi		50	60	75	kΩ
Noise Output Voltage (RMS value)	Vno	ON, Rg=0Ω, BPF=20Hz~20kHz		150	500	μV
		ON, Rs=10kΩ, BPF=20Hz~20kHz		250		μV
		Mute, BPF=20Hz~20kHz		120		μV
Channel Separation	α	Rs=10kΩ	40			dB
Channel Unbalance	ΔGv			0.1	1	dB

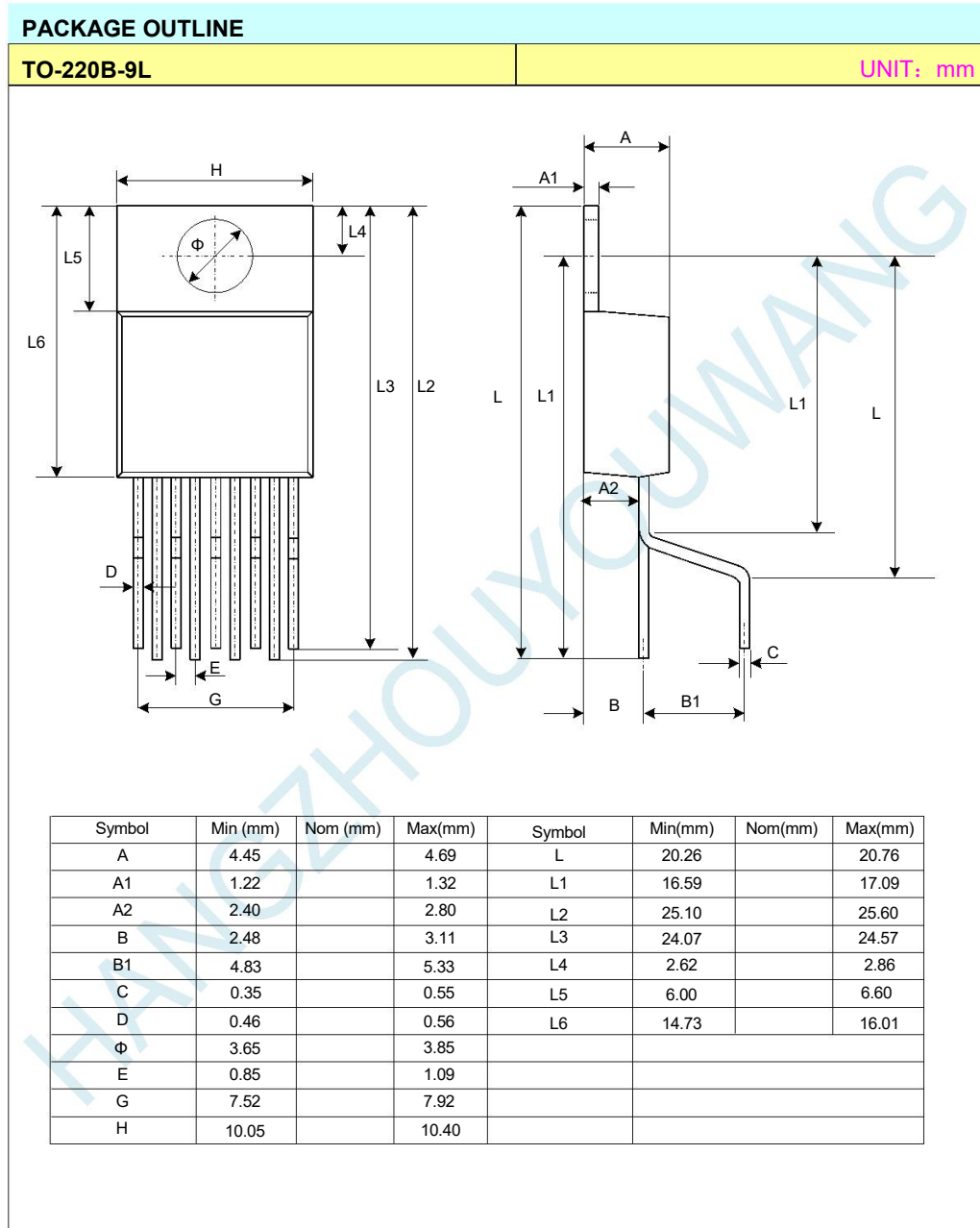
APPLICATION CIRCUIT



Stereo application circuit diagram



BTL application circuit diagram



ELECTROSTATIC DISCHARGE CAUTION

These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage handling to prevent electrostatic damage to the device.

NOTICE

HANGZHOU YOUWANG ELECTRONICS CO.LTD assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HANGZHOU YOUWANG ELECTRONICS CO.LTD's products described or contained herein. HANGZHOU YOUWANG ELECTRONICS CO.LTD's products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.