



TDA22003

LINEAR INTEGRATED CIRCUIT

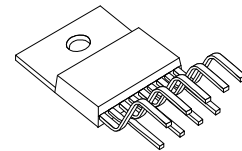
10 +10W STEREO AMPLIFIER

■ DESCRIPTION

The UTC **TDA22003** is a class AB stereo audio power amplifier that contains two identical amplifiers capable of delivering 10W per channel. It is designed for quality Hi-Fi stereo applications and is easily constructed and with minimum need of external components.

■ FEATURES

- * Supply range 8V ~ 28V
- * High power outputs (10W/Channel)
- * High output current up to 3.5A
- * Short circuit protection
- * Thermal protection



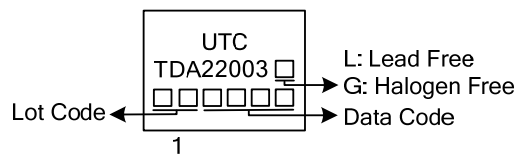
TO-220Z9

■ ORDERING INFORMATION

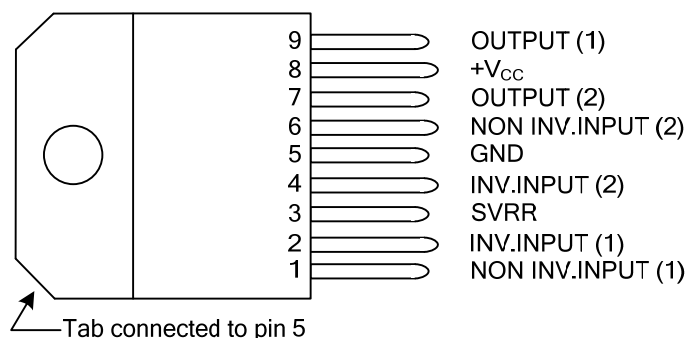
Ordering Number		Package	Packing
Lead Free	Halogen Free		
TDA22003L-TB9-T	TDA22003G-TB9-T	TO-220Z9	Tube

TDA22003L-TB9-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube (2) TB9: TO-220Z9 (3) L: Lead Free, G: Halogen Free and Lead Free
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■ MARKING



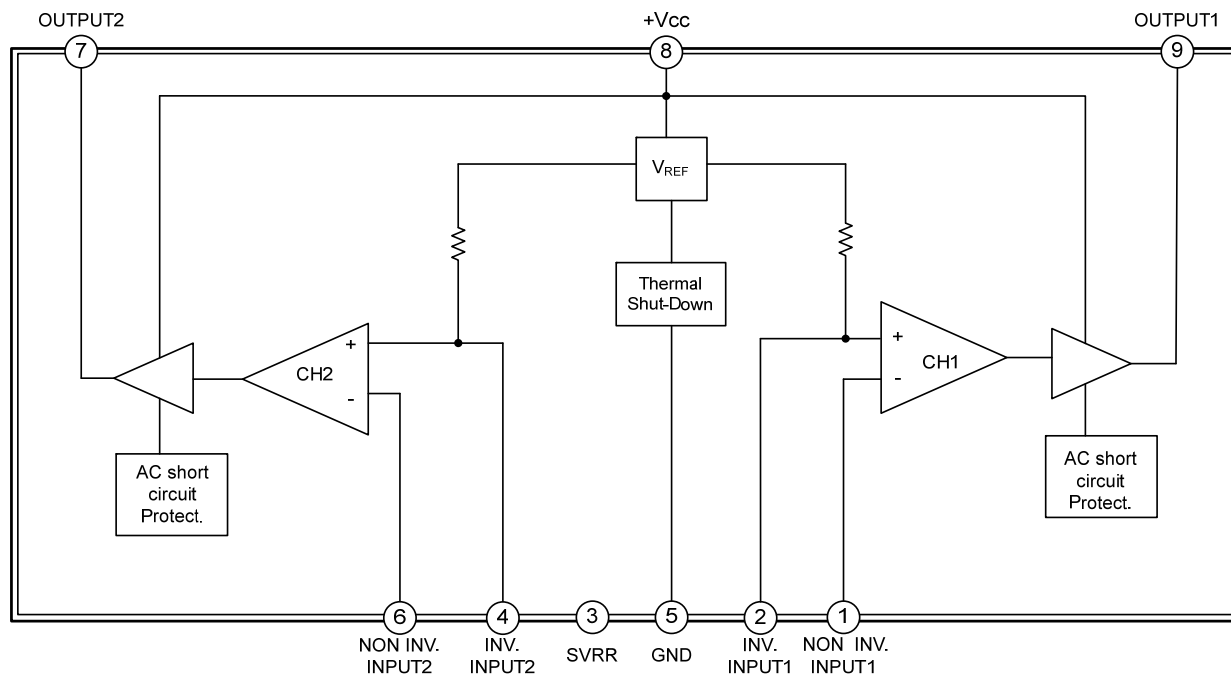
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	NON INV.INPUT1	Non-inverting input1
2	INV.INPUT1	Inverting input1
3	SVRR	Internal 1/2 V _{CC} supply rejection
4	INV.INPUT2	Inverting input2
5	GND	Ground
6	NON INV.INPUT2	Non-inverting input2
7	OUTPUT2	Output2
8	+V _{CC}	Supply voltage
9	OUTPUT1	Output1

BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V _{CC}	28	V
Peak Output Current	repetitive, f ≥20Hz	I _{O(PEAK)}	3.5	A
	non repetitive, tp=100μs		4.5	A
Power Dissipation (T _C = 90°C)		P _D	20	W
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-40 ~ +150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

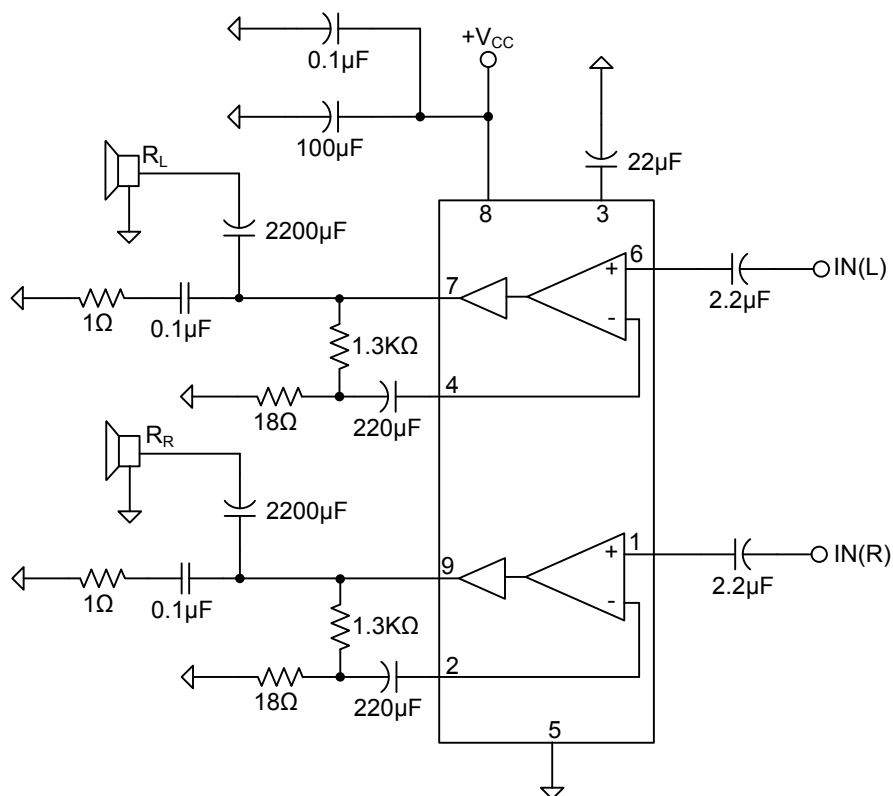
PARAMETER	SYMBOL	RATING	UNIT
Junction to Case	θ_{JC}	3	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS

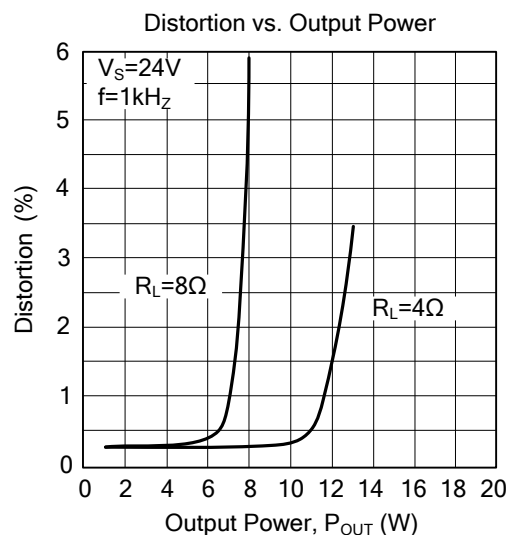
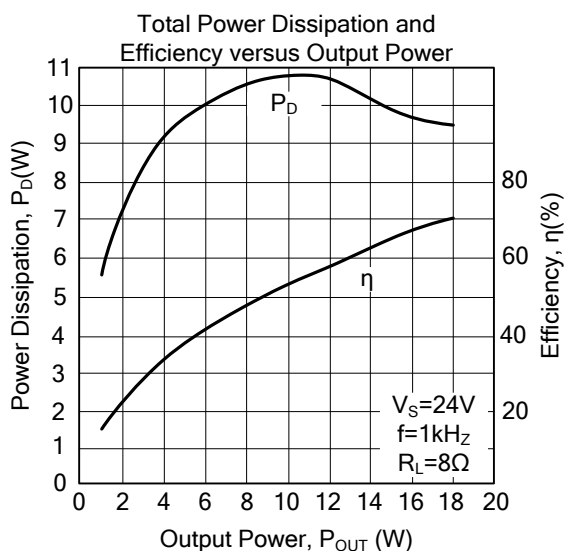
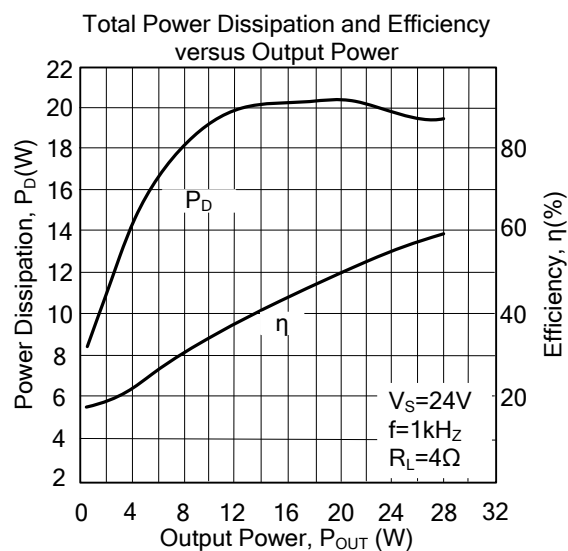
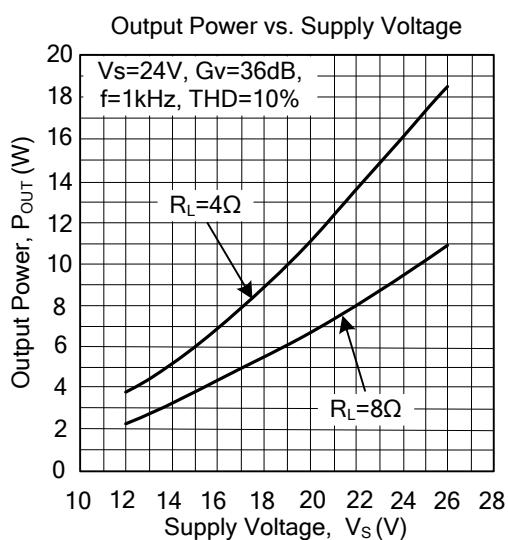
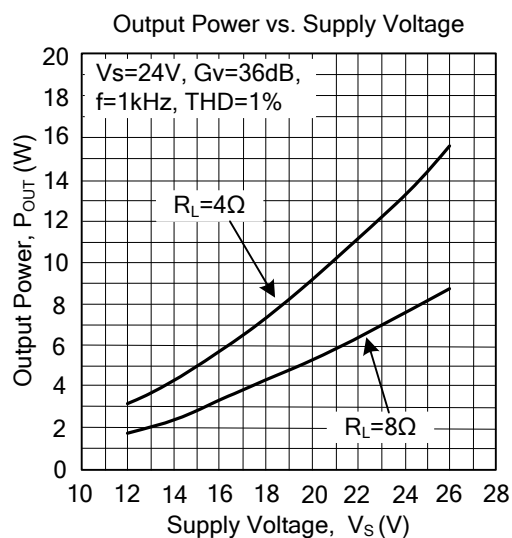
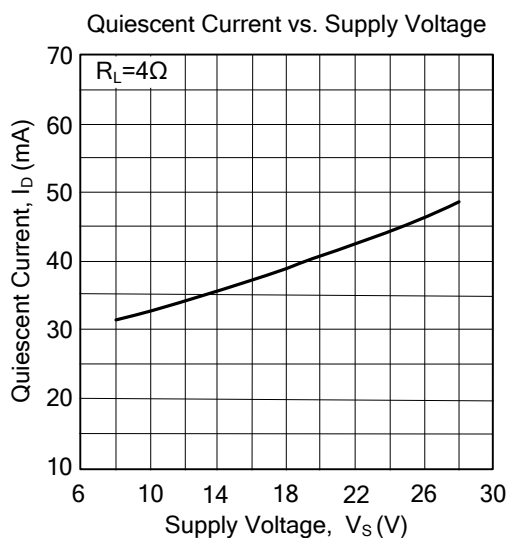
(Refer to test circuit, $T_A = 25^\circ\text{C}$, $V_{CC} = 24\text{V}$, $G_V = 36\text{dB}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		8		28	V
Quiescent Output Voltage	V_{OUT}	$V_{CC} = 24\text{V}$		11.5		V
Input Saturation Voltage (rms)	$V_{IN(SAT)}$		300			mV
Total Input Noise Voltage	e_N	$R_g = 10\text{K}\Omega$, 22Hz~22KHz		2.5	8	μV
Total Quiescent Drain Current	I_Q	$V_{CC} = 24\text{V}$		60	120	mA
Output Power for each channel	$R_L=4\Omega$	THD=1%, $V_{CC}=24\text{V}$, $f=1\text{kHz}$		12.5		W
	$R_L=8\Omega$			7		W
	$R_L=4\Omega$	$f = 40\text{Hz} \sim 12.5\text{kHz}$	10			W
	$R_L=8\Omega$		5			W
	$R_L=4\Omega$	$V_{CC} = 18\text{V}$, $f = 1\text{kHz}$		7		W
	$R_L=8\Omega$			4		W
Total Harmonic Distortion for each channel	$R_L=4\Omega$	$V_{CC}=24\text{V}$, $f = 1\text{kHz}$	$P_{OUT} = 0.1 \sim 7.0\text{W}$		0.2	%
	$R_L=8\Omega$		$P_{OUT} = 0.1 \sim 3.5\text{W}$		0.1	%
	$R_L=4\Omega$	$V_{CC}=18\text{V}$	$P_{OUT} = 0.1 \sim 5.0\text{W}$		0.2	%
	$R_L=8\Omega$		$P_{OUT} = 0.1 \sim 2.5\text{W}$		0.1	%
Input Resistance	R_{IN}	$f = 1\text{kHz}$, Non-Inverting Input	70	200		$\text{k}\Omega$
Frequency Roll off (-3dB)	Low	f_L	$R_L = 4\Omega$	20		Hz
	High	f_H	$R_L = 4\Omega$	80		kHz
Closed Loop Voltage Gain	G_V	$f = 1\text{kHz}$	35.5	36	36.5	dB
Closed Loop Gain Matching	ΔG_V			0.5		dB
Cross Talk	$f = 1\text{kHz}$	$R_L = \infty$, $R_g = 10\text{K}\Omega$		60		dB
	$f = 10\text{kHz}$			50		
Supply Voltage Rejection for each channel	SVR	$f_{\text{RIPPLE}} = 100\text{Hz}$, $V_{\text{RIPPLE}} = 0.5\text{V}$, $R_g = 10\text{k}\Omega$		55		dB
Thermal Shut-Down Junction Temp.				145		$^\circ\text{C}$

■ TEST AND APPLICATION CIRCUIT ($G_V = 36\text{dB}$)



TYPICAL CHARACTERISTICS



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