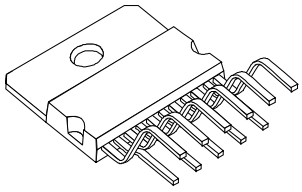
PA2009 **Preliminary** ***LINEAR INTEGRATED CIRCUIT***

10 +10W STEREO AMPLIFIER



HZIP-11A

Lead-free: PA2009L
Halogen-free: PA2009G

■ DESCRIPTION

The UTC **PA2009** 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 application which is easy to construct and has a 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

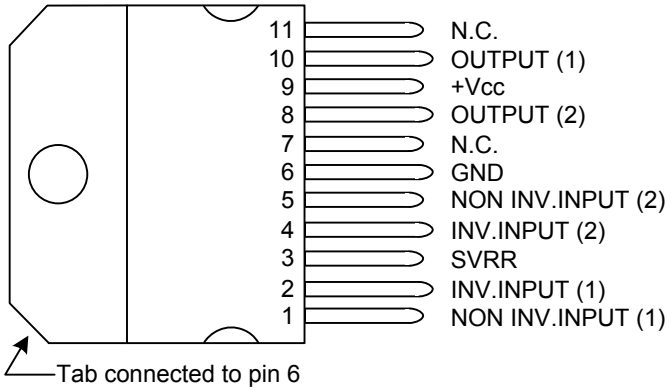
■ ORDERING INFORMATION

Ordering Number			Package	Packing
Normal	Lead Free	Halogen Free		
PA2009-J11-A-T	PA2009L-J11-A-T	PA2009G-J11-A-T	HZIP-11A	Tube

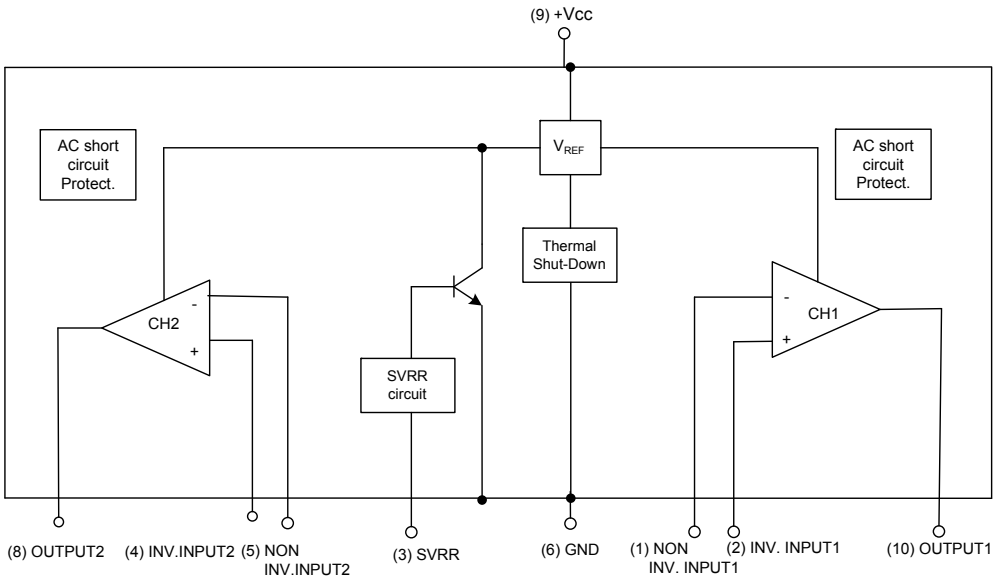
PA2009L-J11-A-T
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) T: Tube
(2) J11-A: HZIP-11A
(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



■ 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@Tc = 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
Thermal Resistance Junction to Case	θ_{JC}	3.0	°C/W

■ ELECTRICAL CHARACTERISTICS

(Refer to test circuit, Ta= 25°C, Vcc = 24V, G_V = 36dB, 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} = 24V			11.5		V
Input Saturation Voltage (rms)		$V_{IN(SAT)}$			300			mV
Total Input Noise Voltage		e_N	R_g = 10KΩ, 22Hz~22KHz			2.5	8	μV
Total Quiescent Drain Current		I_Q	V_{CC} = 24V			60	120	mA
Output Power for each channel	R_L =4Ω	P_{OUT}	THD=1%, V_{CC}=24V, f=1kHz			12.5		W
	R_L =8Ω					7		W
	R_L =4Ω		f = 40Hz ~12.5kHz		10			W
	R_L =8Ω				5			W
	R_L =4Ω		V_{CC} = 18V, f = 1kHz			7		W
	R_L =8Ω					4		W
Total Harmonic Distortion for each channel	R_L =4Ω	THD	P_{OUT} = 0.1~7.0W	f = 1kHz, V_{CC}=24V		0.2		%
	R_L =8Ω		P_{OUT} = 0.1~3.5W			0.1		%
	R_L =4Ω		P_{OUT} = 0.1~5.0W	V_{CC}=18V		0.2		%
	R_L =8Ω		P_{OUT} = 0.1~2.5W			0.1		%
Input Resistance		R_{IN}	f = 1kHz, Non-Inverting Input		70	200		kΩ
Frequency Roll off (-3dB)	Low	f_L	R_L =4Ω			20		Hz
	High	f_H	R_L =4Ω			80		kHz
Closed Loop Voltage Gain		Gv	f = 1kHz		35.5	36	36.5	dB
Closed Loop Gain Matching		ΔGv				0.5		dB
Cross Talk	f = 1kHz	CT	R_L = ∞, Rg = 10KΩ			60		dB
	f = 10kHz					50		
Supply Voltage Rejection for each channel		SVR	f_{RIPPLE} = 100Hz, V_{RIPPLE} = 0.5V, R_g = 10kΩ			55		dB
Thermal Shut-Down Junction Temperature						145		°C

■ TEST AND APPLICATION CIRCUIT

(G_V = 36dB)