BIPOLAR ANALOG INTEGRATED CIRCUIT
μPC1298V

50 to 80 W POWER AMPLIFIER DRIVER

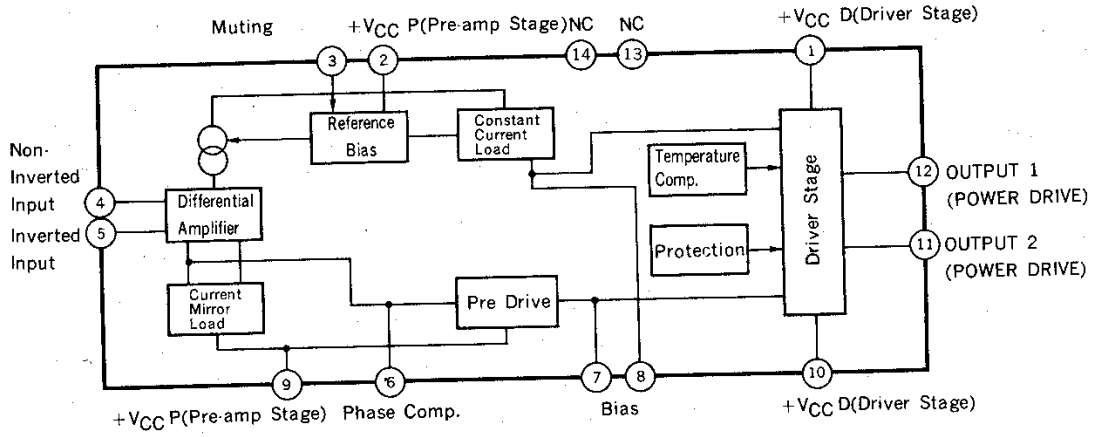
DESCRIPTION

μPC1298V is a integrated monolithic circuit designed for 50 W to 80 W class HiFi audio power amplifier and consists of a input differential amplifier, a predriver circuit, a driver circuit and a over current protection circuit.

FEATURES

- Low Distortion.
  0.002 % TYP. (V_{CC} = ±46 V, f = 1 kHz, A_V = 30 dB, P_O = 50 W, R_L = 8 Ω with Power Transistor)
  0.006 % TYP. (V_{CC} = ±46 V, f = 20 kHz, A_V = 30 dB, P_O = 50 W, R_L = 8 Ω with Power Transistor)
- Wide Frequency Band.
  900 kHz TYP. (–3 dB)
- Wide Power Band Width.
  90 kHz TYP. (P_O = 40 W, THD = 0.1 %)

BLOCK DIAGRAM



NOTE: The built-in over current circuit protects μPC1298V and cannot protect external power transistors.

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Supply Voltage (Quiescent)	V_{CC1}	±65	V
Supply Voltage (Operational)	V_{CC2}	±60	V
Circuit Current	$I_{CC\,(peak)}$	250	mA
Allowable Package Dissipation	P_D	7.5*	W
Operational Temperature	T_{opt}	−20 to +75	°C
Storage Temperature	T_{stg}	−40 to +150	°C

* 100 x 100 x 2 mm Al heat sink

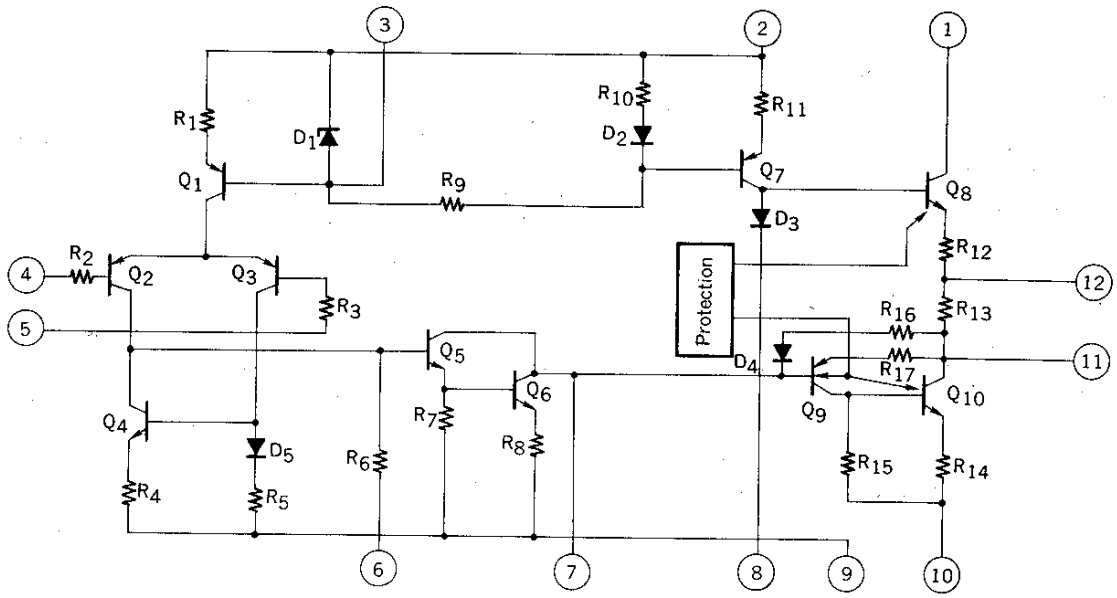
RECOMMENDED OPERATING CONDITION

Supply Voltage (Operational)	V_{CC} = ±20 to ±46 V
Input Bias Resistance	R_{IN} = 1 to 50 to 100 kΩ
Power Transistor h_{FE}	$h_{FE} \geqq 50$ at P_O = 80 W, R_L = 8 Ω, $T_j < 125$ °C
Closed Loop Voltage Gain	A_v = 26 to 30 dB
Junction Temperature	T_j = −20 to 125 °C

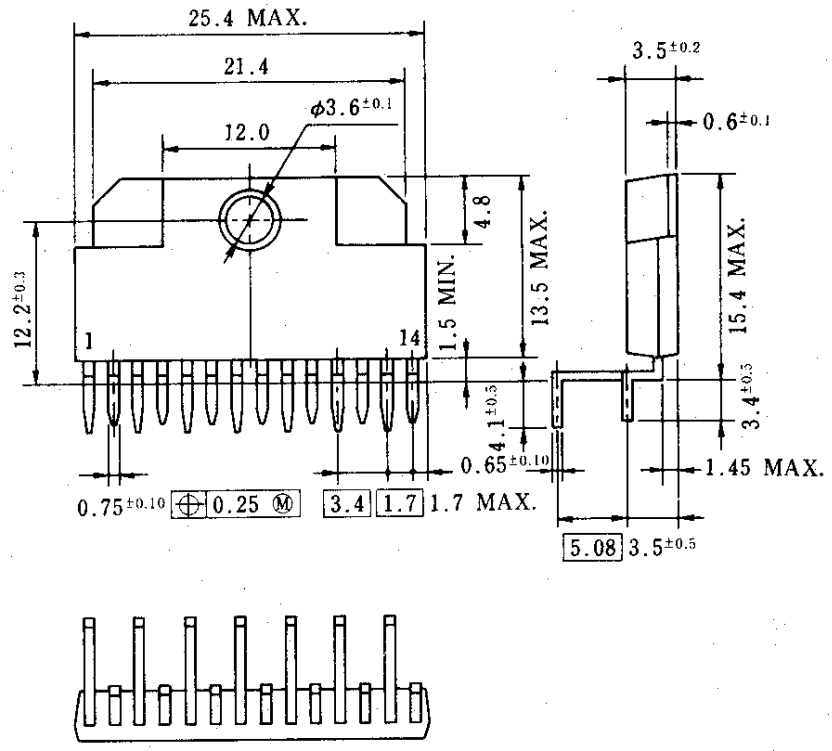
ELECTRICAL CHARACTERISTICS (V_{CC} = ±46 V, A_v = 30 dB, Use Standard Test Circuit, T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITION
Output Offset Voltage	V_{offset}		±5	±50	mV	V_{IN} = 0
Quiescent Circuit Current	I_{CC}		20	40	mA	V_{IN} = 0
Maximum Output Voltage	V_{OM}	25	28		V	THD=0.05%, f=20 Hz to 20 kHz
Open Loop Voltage Gain	A_{vo}	80	95		dB	V_o = 1.5 V, f = 1 kHz
Output Noise Voltage	V_n		0.07	0.14	mV	R_G = 10 kΩ
Rolloff Frequency	f_H		900		kHz	V_o = 1.5 V, −3 dB
Supply Voltage Rejection Ratio	SVR	55	70		dB	R_G = 2.2 kΩ, f_{ripple} = 100 Hz, v_{ripple} = 1 $V_{r.m.s.}$

EQUIVALENT CIRCUIT



PACKAGE DIMENSIONS (Unit : mm)



PIN CONNECTION DIAGRAM

PIN No.	PIN CONNECTION
1	$+V_{CCD}$ (for Driver)
2	$+V_{CCP}$ (for Preamp)
3	MUTING
4	INPUT
5	NFB
6	PHASE COMP
7	BIAS
8	BIAS
9	$-V_{CCP}$ (for Preamp)
10	$-V_{CCD}$ (for Driver)
11	LOWER OUTPUT
12	UPPER OUTPUT
13	NC
14	NC