

6427525 N E C ELECTRONICS INC

05E 23064 D

**BIPOLAR ANALOG INTEGRATED CIRCUIT**

**$\mu$ PC1342V**

T-74-05-01

**50 to 110 W POWER AMPLIFIER DRIVER**

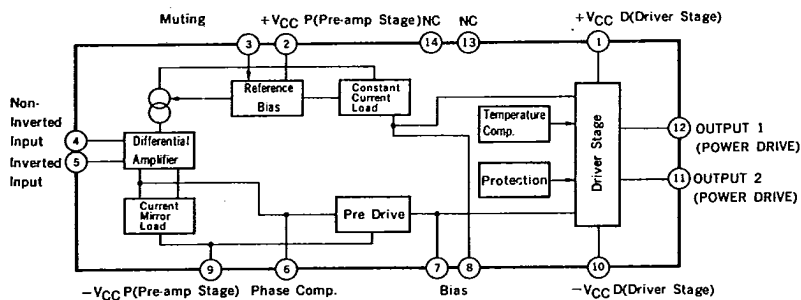
**DESCRIPTION**

$\mu$ PC1342V is a integrated monolithic circuit designed for 50 W to 110 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. ( $V_{CC} = \pm 46$  V,  $f = 1$  kHz,  $A_v = 30$  dB,  $P_O = 80$  W,  $R_L = 8 \Omega$  with Power Transistor)  
0.006 % TYP. ( $V_{CC} = \pm 46$  V,  $f = 20$  kHz,  $A_v = 30$  dB,  $P_O = 80$  W,  $R_L = 8 \Omega$  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  $\mu$ PC1342V and cannot protect external power transistors.

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**ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )**

Supply Voltage (Quiescent)	$V_{CC1}$	$\pm 75$	V
Supply Voltage (Operational)	$V_{CC2}$	$\pm 70$	V
Circuit Current	$I_{CC(\text{peak})}$	250	mA
Allowable Package Dissipation	$P_D$	7.5*	W
Operational Temperature	$T_{\text{opt}}$	-20 to +75	$^\circ\text{C}$
Storage Temperature	$T_{\text{stg}}$	-40 to +150	$^\circ\text{C}$

\* 100 x 100 x 2 mm Al heat sink

**RECOMMENDED OPERATING CONDITIONS**

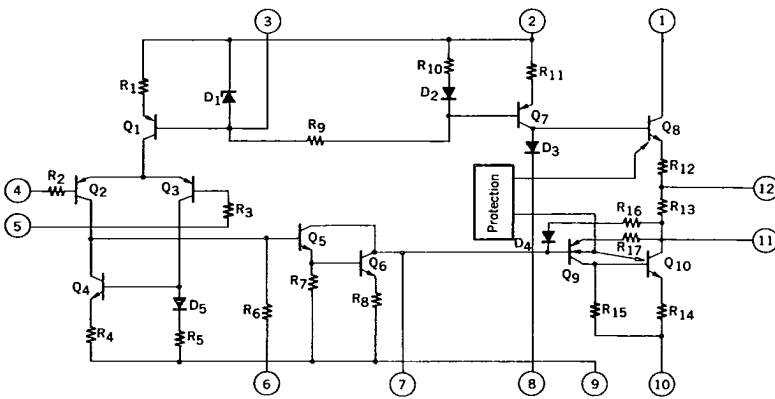
Supply Voltage (Operational)	$V_{CC} = \pm 20$ to $\pm 52$ V
Input Bias Resistance	$R_{IN} = 1$ to 50 to 100 k $\Omega$
Power Transistor $h_{FE}$	$h_{FE} \geq 50$ at $P_O = 80$ W, $R_L = 8 \Omega$ , $T_j < 125^\circ\text{C}$
Closed Loop Voltage Gain	$A_v = 26$ to 30 dB
Junction Temperature	$T_j = -20$ to $125^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $V_{CC} = \pm 46$  V,  $A_v = 30$  dB, Use Standard Test Circuit,  $T_a = 25^\circ\text{C}$ )**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Output Offset Voltage	$V_{\text{offset}}$		$\pm 5$	$\pm 50$	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	$R_G = 10$ k $\Omega$
Rolloff Frequency	$f_H$		900		kHz	$V_o = 1.5$ V, -3 dB
Supply Voltage Rejection Ratio	SVR	55	70		dB	$R_G = 2.2$ k $\Omega$ , $f_{\text{ripple}} = 100$ Hz, $v_{\text{ripple}} = 1$ V <sub>r.m.s.</sub>

**EQUIVALENT CIRCUIT**

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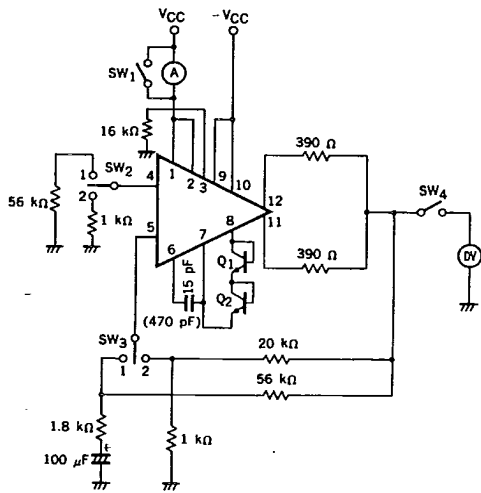


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TEST CIRCUIT 1 (I<sub>CC</sub>, V<sub>OFF</sub>)

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Q1 } 2SC1844F  
 Q2 }

**SWITCH POSITION**

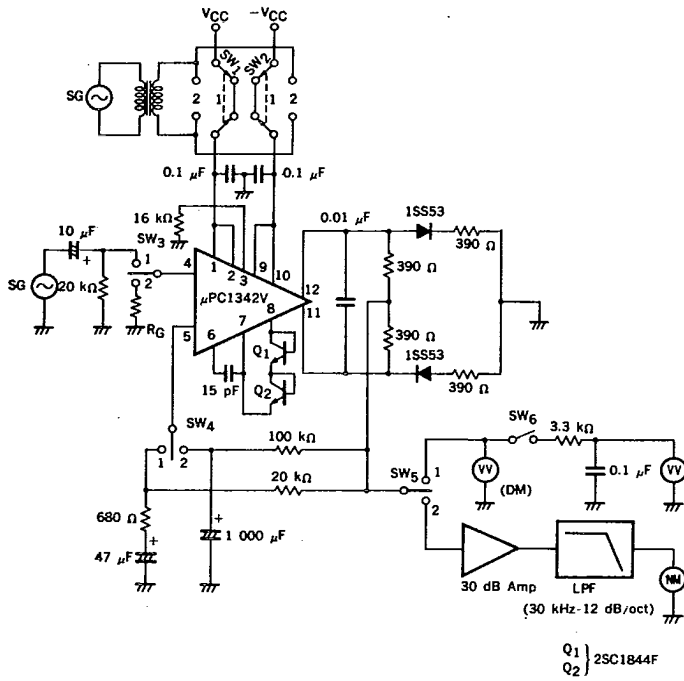
	SW <sub>1</sub>	SW <sub>2</sub>	SW <sub>3</sub>	SW <sub>4</sub>
I <sub>CC</sub>	OFF	2	2	OFF
V <sub>OFF</sub>	ON	1	1	ON

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TEST CIRCUIT 2 ( $V_{OM}$ ,  $A_v$ ,  $A_{vO}$ ,  $V_{NO}$ , SVR, PBW)

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SWITCH POSITION

	SW <sub>1</sub>	SW <sub>2</sub>	SW <sub>3</sub>	SW <sub>4</sub>	SW <sub>5</sub>	SW <sub>6</sub>
$V_{OM}$	1	1	1	1	1	OFF
$A_v$	1	1	1	1	1	OFF
$A_{vO}$	1	1	1	2	1	OFF
$V_{NO}$	1	1	2	1	2	OFF
SVR	2/1	1/2	2	1	1	ON
PBW	1	1	1	1	1	OFF

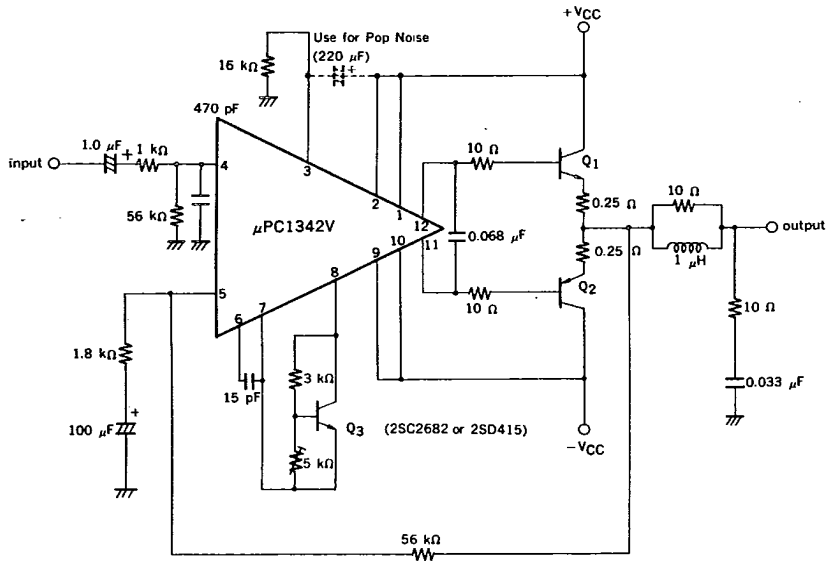
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APPLICATION CIRCUIT

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RECOMMENDED POWER TRANSISTOR

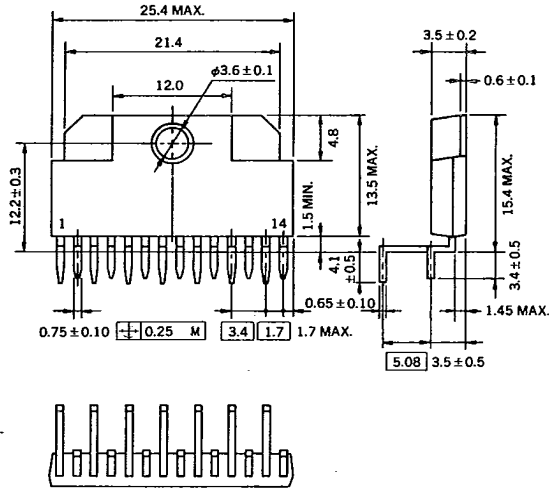
P <sub>O</sub>	25 to 40 W	45 to 55 W	50 to 70 W	70 to 80 W	80 to 110 W
Q <sub>1</sub>	2SD1288 2SD2013	2SD1289 2SD1977	2SC3012 2SC4267	2SC2987 2SC2987A 2SC4268	2SC2987A 2SC4268 x 2
Q <sub>2</sub>	2SB965 2SB1336	2SB966 2SB1315	2SA1232 2SA1631	2SA1227 2SA1227A 2SA1632	2SA1227A 2SA1632 x 2

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$\mu$ PC1342V  
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14 PIN V-DIP PACKAGE DIMENSIONS (Unit : mm)



PIN CONNECTION DIAGRAM

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

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