

6427525 N E C ELECTRONICS INC

 μ PC1335V
05E 23055 D

T-74-05-01

CONNECTION DIAGRAM

| PIN NO. | CONNECTION |
|---------|-----------------|
| 1 | Output 1 |
| 2 | Boot Strap 1 |
| 3 | Compensation 1 |
| 4 | Input 1 |
| 5 | NFB 1 |
| 6 | GND (Input) |
| 7 | Filter |
| 8 | Input 2 |
| 9 | NFB 2 |
| 10 | Boot Strap 2 |
| 11 | Compensation 2 |
| 12 | V _{CC} |
| 13 | Output 2 |
| 14 | GND (Output) |

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

| | | | |
|----------------------------|------------------|-------------|----|
| Supply Voltage (No Signal) | V _{CC1} | 28 | V |
| Supply Voltage (Operating) | V _{CC2} | 25 | V |
| Power Dissipation | P _D | 14* | W |
| Operating Temperature | T _{opt} | -20 to +70 | °C |
| Storage Temperature | T _{stg} | -40 to +150 | °C |

* 100 x 100 x 2 mm Al heat sink

5

RECOMMENDED OPERATING CONDITIONS (T_a = 25 °C)

| ITEM | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|-----------------------|-----------------|------|--------|------|------|
| Supply Voltage | V _{CC} | 6 | 12, 15 | 20 | V |
| Load Impedance (DUAL) | R _L | 3 | 4 | 8 | Ω |
| Load Impedance (BTL) | R _L | 4 | | 8 | Ω |
| Voltage Gain | A _v | 36 | 48 | | dB |

μ PC1335V

6427525 N E C ELECTRONICS INC

05E 23056 D

T-74-05-01

ELECTRICAL CHARACTERISTICS ($V_{CC} = 15\text{ V}$, $R_L = 4\ \Omega$, $f = 1\text{ kHz}$, $T_a = 25\text{ }^\circ\text{C}$, $100 \times 100 \times 2\text{ mm Al Panel Heat Sink}$)

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|---------------------------|----------|------|------|------|----------------------|--|
| Circuit Current | I_{CC} | | 23 | 36 | mA | No Signal |
| Voltage Gain | A_v | 46 | 48 | 50 | dB | |
| Output Power | P_O | | 4.6 | | W | THD = 10 % $V_{CC} = 12\text{ V}$, $R_L = 4\ \Omega$ |
| | | | 5.7 | | W | THD = 10 % $V_{CC} = 12\text{ V}$, $R_L = 3\ \Omega$ |
| | | 6 | 7 | | W | THD = 10 % $V_{CC} = 15\text{ V}$, $R_L = 4\ \Omega$ |
| | | | 5.5 | | W | THD = 10 % $V_{CC} = 18\text{ V}$, $R_L = 8\ \Omega$ |
| | | | 20 | | W | THD = 10 %, BTL $V_{CC} = 18\text{ V}$, $R_L = 8\ \Omega$ |
| Total Harmonic Distortion | THD | | 0.2 | 1 | % | $P_O = 1\text{ W}$ |
| Output Noise Voltage | NL | | 0.25 | 0.6 | mV _{r.m.s.} | DIN AUDIO $R_G = 0$ |
| Cross Talk | C.T. | 45 | 55 | | dB | $P_O = 2\text{ W}$ other Ch. $R_G = 0$ |
| Channel Balance | Ch. B. | -1 | 0 | +1 | dB | $P_O = 4\text{ W}$ |
| Ripple Rejection | SVR | 45 | 55 | | dB | $R_G = 0$, $f = 100\text{ Hz}$ $V = 0.3\text{ V}_{r.m.s.}$ |
| Input impedance | Z_{in} | 20 | 30 | | k Ω | |

SWITCH POSITION

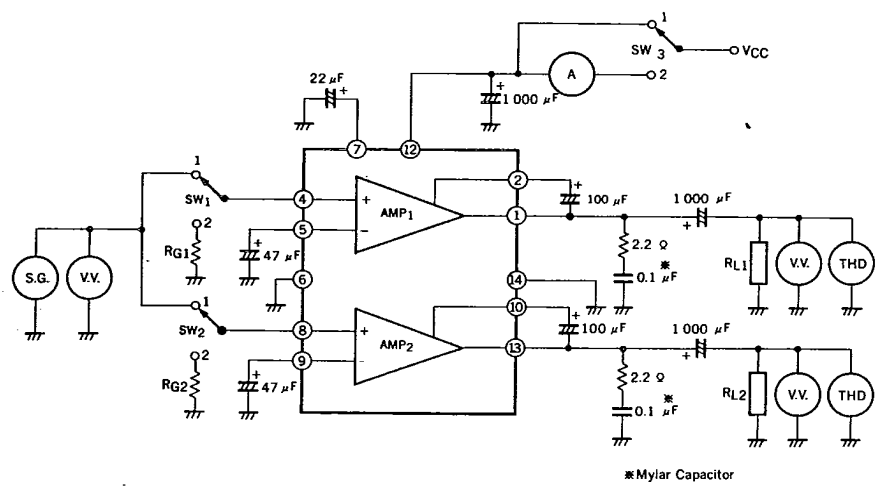
| ITEM | SYMBOL | SW ₁ | SW ₂ | SW ₃ |
|---------------------------|----------|-----------------|-----------------|-----------------|
| (DUAL OPERATION) | | | | |
| Circuit Current | I_{CC} | 2 | 2 | 2 |
| Voltage Gain | A_v | 1 | 1 | 1 |
| Output Power | P_O | 1 | 1 | 1 |
| Total Harmonic Distortion | THD | 1 | 1 | 1 |
| Output Noise Voltage | NL | 2 | 2 | 1 |
| Cross Talk | C.T. | 1/2 | 2/1 | 1 |
| Channel Balance | Ch. B. | 1 | 1 | 1 |
| Supply Voltage Rejection | SVR | 2 | 2 | 1 |
| (BTL OPERATION) | | | | |
| Output Power | P_O | - | - | - |

6427525 N E C ELECTRONICS INC

μ PC1335V
05E 23057 D

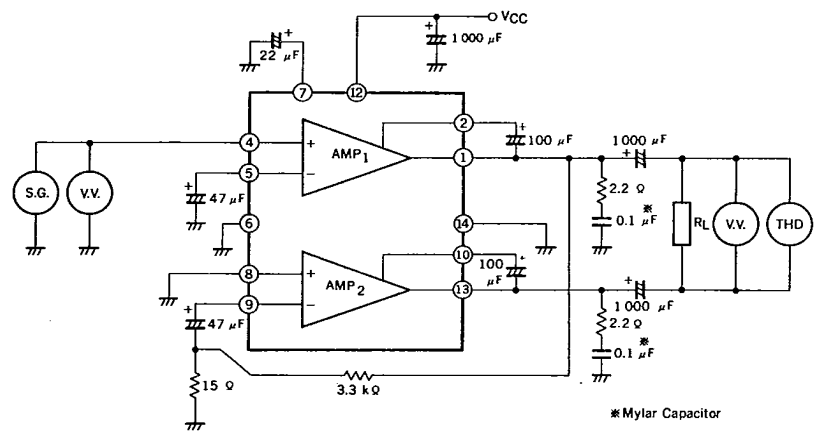
T-74-05-01

TEST CIRCUIT
(DUAL OPERATION)



* Mylar Capacitor

(BTL OPERATION)



* Mylar Capacitor

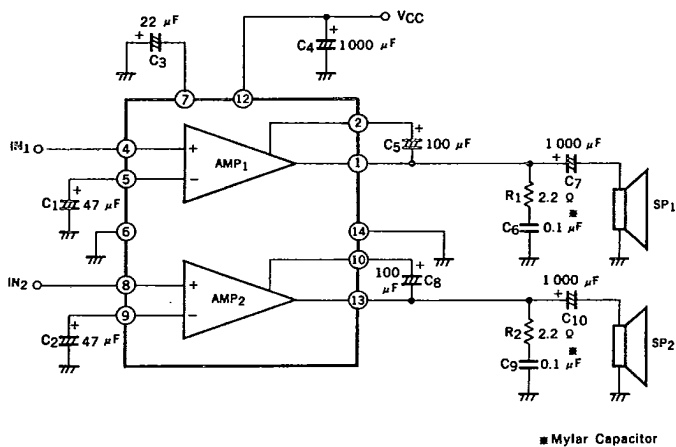
5

μPC1335V
6427525 N E C ELECTRONICS INC

05E 23058 D

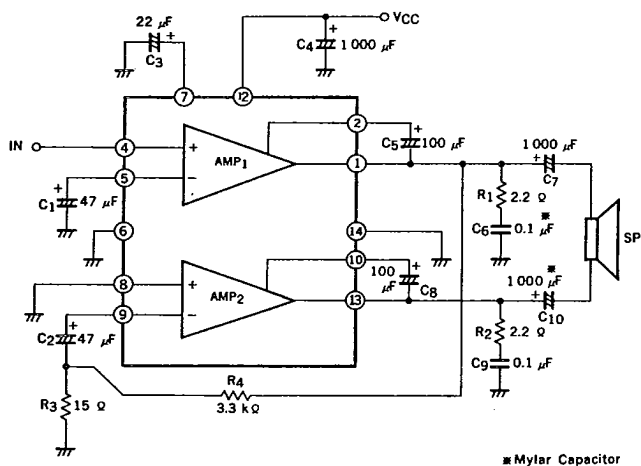
T-74-05-01

TYPICAL APPLICATION
(DUAL OPERATION)



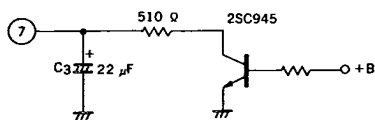
■ Mylar Capacitor

(BTL OPERATION)



■ Mylar Capacitor

(MUTING CIRCUIT)

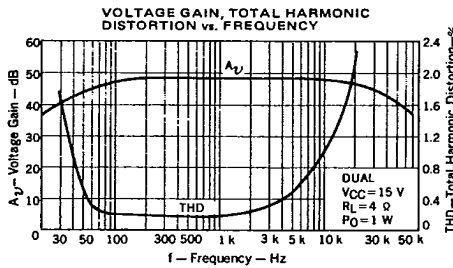
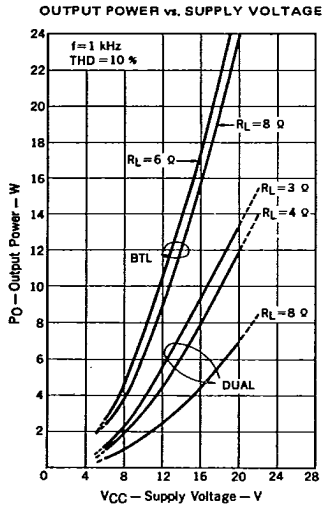
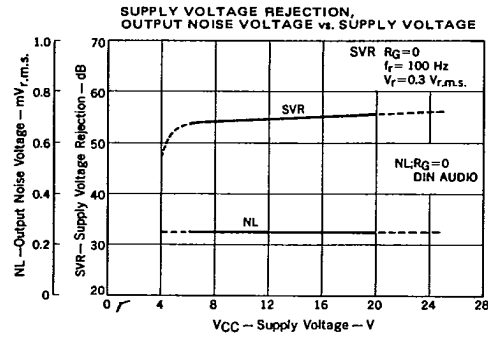
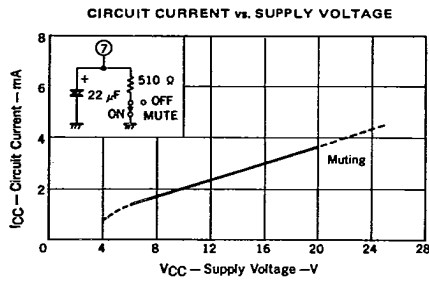
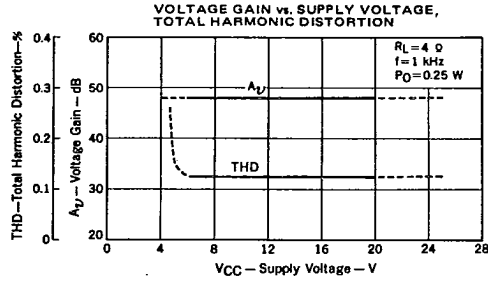
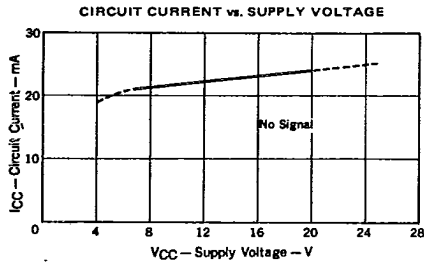


6427525 N E C ELECTRONICS INC

μ PC1335V
05E 23059 D

T-74-05-01

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

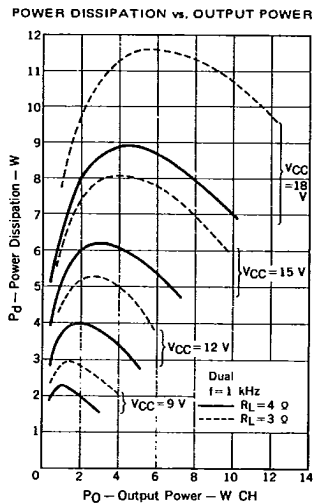
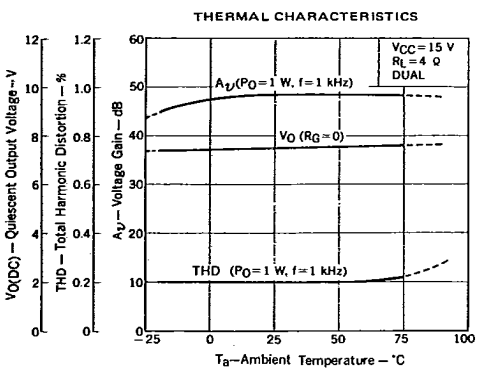
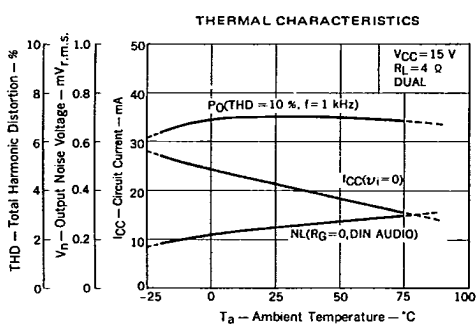
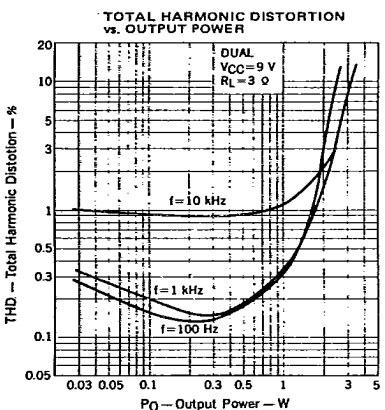
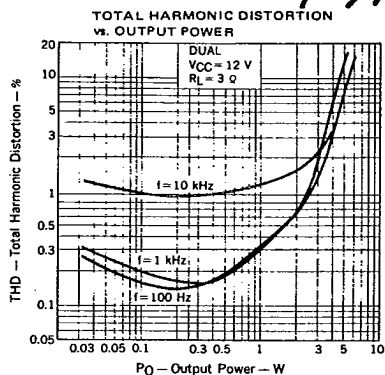
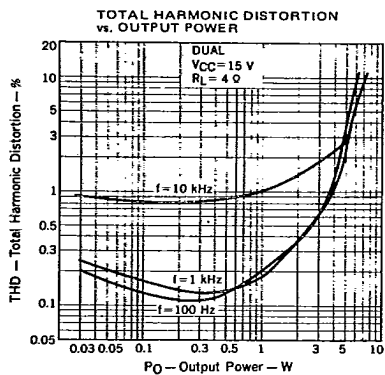


5

μPC1335V
6427525 N E C ELECTRONICS INC

05E 23060 D

T-74-05-01

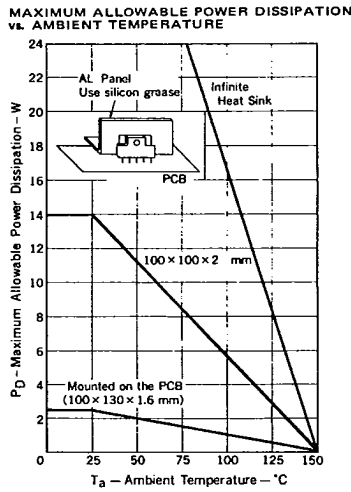
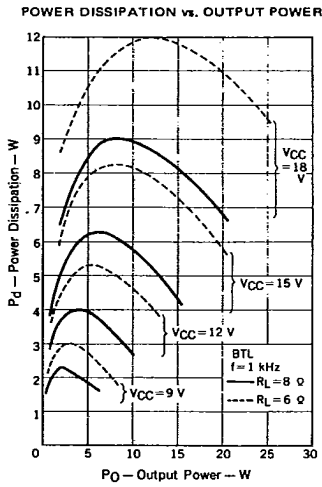
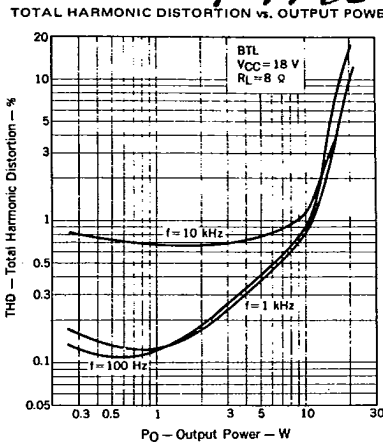
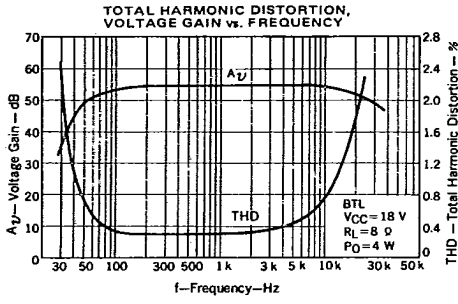


μPC1335V

05E 23061 D

T-74-05-01

6427525 N E C ELECTRONICS INC



5

μPC1335V
6427525 N E C ELECTRONICS INC

05E 23062 D

T-74-05-01

NOTES FOR USE

- (1) Adding a capacitor for phase compensation between Pin 1 (13) to Pin 3 (11), its value less than 47 pF is recommended, and the value of R_1 (R_2) and of C_6 (C_9) have to be chosen as follows.

$$R_1 (R_2) = 1 \Omega$$

$$C_6 (C_9) = 0.15 \mu F$$

- (2) At muting by shortage of Pin 7 to GND, ripple rejection is determined by following equation.

$$SVR = \left| 20 \log \frac{R_L}{200 + R_L} \right|$$

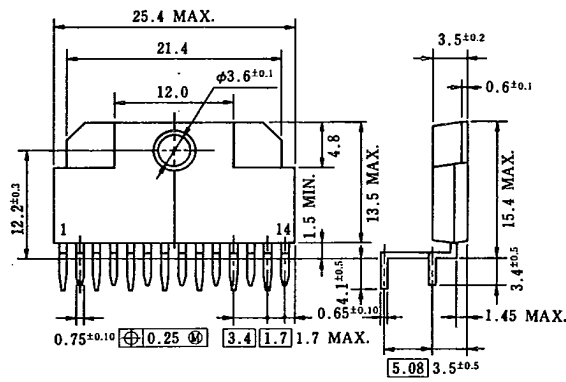
- (3) Keep the $\mu PC1335V$'s heat sink in shortage to GND or floating condition.
(4) Direct shortage between Pin 1 (13) to V_{CC} or GND will damage the $\mu PC1335V$.
(5) Keep some margin at design of external heat sink size.
(6) Use silicon grease and keep the torque of screw driver less than 10 kg·cm in attachment of a external heat sink.

6427525 N E C ELECTRONICS INC

μ PC1335V
05E 23063 D

14 PIN V-DIP (Unit: mm)

T-74-05-01



5