PLESSEY
Semiconductors

# ML237B

T-77-07-05

## 6-CHANNEL TOUCH CONTROL INTERFACE

The ML237B is a six-channel sense circuit designed specifically for touch tuning in colour and monochrome television receivers. Using low threshold P-MOS technology, the circuit can be driven directly from two-terminal touch plates - replacing conventional mechanical push-buttons for channel selection. Neons can be used to indicate the selected channel, while the latched output of the ML237B drives the varicap tuner via a bias selection network.

A stepping facility is included whereby the application of a suitable negative-going pulse to the step input causes the selected channel output to advance by one.

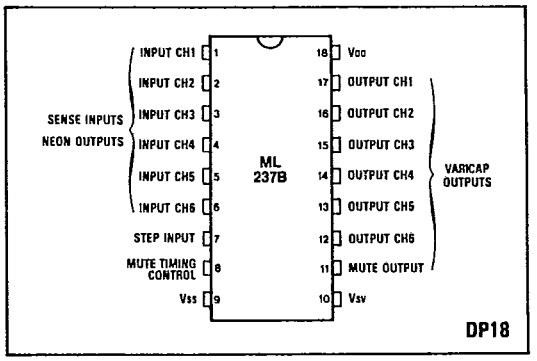


*Fig.1 Pin connections - top view*

### FEATURES

- 6-Channel Capability
- Direct Neon Drive
- Low Impedance Drive to Varicap
- Uses 33V Varicap Supply
- Remote Control Stepping Facility
- Sound Muting During Selection
- Selected Channel 1 on Power-up
- Channels Are Selected With a Negative (or Earth) Input

### ABSOLUTE MAXIMUM RATINGS

| | |
|---|---|
| Ambient operating temperature | -10° C to +65° C |
| Storage temperature | -10° C to +85° C |
| Supply, $V_{SS}$-$V_{DD}$ | 36V |
| Varicap voltage $V_{SV}$ | $V_{SS}$ +0.3V |

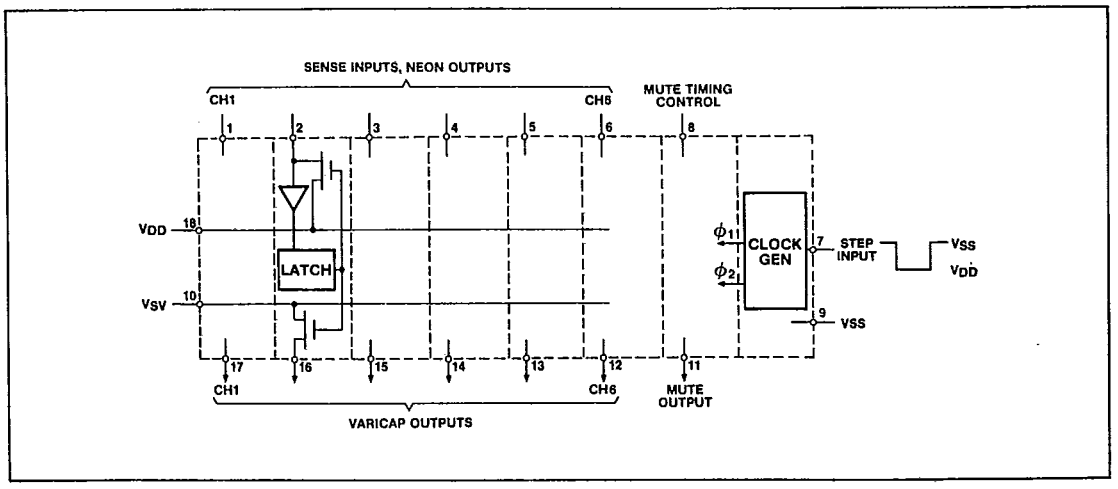


*Fig.2 Functional block diagram*

## ELECTRICAL CHARACTERISTICS

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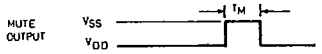
**Test Conditions (unless otherwise stated):**
$T_{amb}$ = +25°C, $V_{DD}$ = 0, $V_{SS}$ = $V_{SV}$ = 30V to 36V

| Characteristic | Value | | | Units | Conditions |
|---|---|---|---|---|---|
| | Min. | Typ. | Max. | | |
| Input current | | | 1 | μA | $V_{IN}$ = $V_{SS}$ |
| Output leakage | | | 1 | μA | $V_{OUT}$ = 0 |
| Mute switch O/P leakage | | | 10 | μA | $V_{OUT}$ = 0 |
| Supply current | | 5 | 8 | mA | |
| $R_{ON}$ of varicap switch | | 50 | 100 | Ω | $I_{OUT}$ = 10mA |
| Step pulse width | 0.2 | | | ms | >.05Tm |
| Neon switch output current | | | 2 | mA | |
| Mute switch $R_{ON}$ | | 100 | 200 | Ω | $I_{OUT}$ = 5mA |
| Input threshold | 0.4 | 0.5 | 0.6 | Vss | |
| Step input current | 10 | | 1000 | μA | $V_{IN}$ = 0 |
| Mute period | | 400 | | ms | $C_M$ = 0.68 μF |
| Step pulse level | 0 | | Vss −29 | V | |

NOTES
The mute timing can be increased by using a higher value of capacitor ($C_M$)

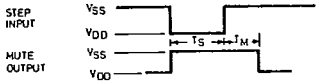
Touch plate selection:




Tm ≃ Cm x 0.6ms/nF

If the channels are selecting by stepping then the mute output is extended by the clock pulse width $T_S$

Stepping selection:



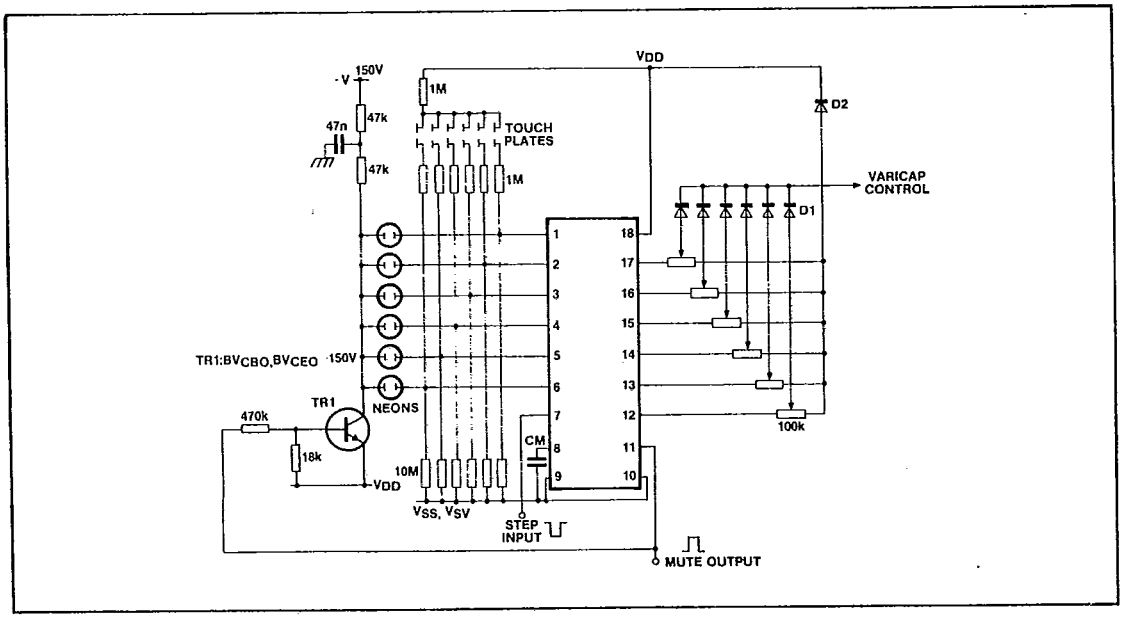




*Fig. 3 Typical applications using neons as channel indicators*