ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE1837
Integrated Circuit
TV Tuner Controller

Description:

The NTE1837 is a tuner controller integrated circuit in a 16–Lead DIP type package containing functions such as band switch, inverter, and low–pass filter. This device can be used as a frequency synthesizer or a voltage synthesizer, depending on the external application circuit.

Functions:

- Band Switch (Equivalent to the NTE1658: Refer to the Truth Table)
- Inverter
- Low–Pass Filter (Voltage Follower, Operational Amplifier)

Features:

- 2–Input, 5–Output Band Switch
- Band Switch (NTE1658) Available by Changing Over C Pin
- High Maximum Output Current, Low Saturation Voltage
- Meet CATV Tuner Requirements
- Frequency Synthesizer or Voltage Synthesizer Application depending on Inverter and Operational Amplifier Connections

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Band Switch

V_{CC1} Maximum Supply Voltage, V_{16}max 18V
V_{CC2} Maximum Supply Current, I_1max 10mA
Maximum Load Current
I_{12}, I_{13}max (I_1 = 6mA) . . . . . –60mA
I_{14}, I_{15}max (V_{CC1} = 12V) . . . . . –60mA
I_{11}max 25mA
Maximum AB Input Current, I_2, I_3max 2mA
Maximum Applied Voltage (SW), V_{11}max 35V

Inverter, Operation Amplifier

V_{CC3} Maximum Supply Voltage, V_6max 35V
V_{CC3} Maximum Supply Current, I_6max 5mA
Maximum Applied Voltage, V_8max 35V
Maximum Load Current, I_8max 5mA
Maximum Input Voltage, V_7max 8V
Maximum Input Current, I_7max 1mA
Maximum Input Voltage, V_9max . . . . . V_{CC} –1V

Common to 1, 2

Allowable Power Dissipation ($T_A \le$ +65°C), $P_d$max 600mW
Operating Temperature Range, T_{opr} . . . . . –20° to +65°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C

Operating Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Band Switch						
Quiescent Current	I_{CC}		0	–	9	mA
Output Saturation Voltage	F (sat)		0	–	0.7	V
	SW (sat)		0	–	0.7	V
Input Threshold Voltage	V_{TH}		0.8	1.5	3.0	V
Output Leakage Current	I_L		0	–	–50	µA
Inverter, Operational Amplifier, Zener						
Output Saturation Voltage	$V_{8\ (sat)}$		0	–	0.3	V
Input Threshold Voltage	V_{TH}		2.5	–	4.5	V
Input Offset Voltage	$V_{IO–1}$		–100	–	+100	mV
	$V_{IO–2}$		–100	–	+100	mV
Input Bias Current	I_{BIAS}		–	–	–190	nA

Note 1. Current flowing into IC: Plus (No Sign)
Current flowing out of IC: Minus

Truth Table

Input			Output				
A (Pin3)	**B** (Pin2)	**C** (Pin4)	**F1** (Pin15)	**F2** (Pin14)	**F3** (Pin13)	**F4** (Pin12)	**SW** (Pin11)
L	L	Open	H	Z	Z	Z	Z
H	L	Open	Z	H	Z	Z	L
L	H	Open	Z	Z	H	Z	L
H	H	Open	Z	Z	Z	H	L
L	L	GND	H	Z	Z	H	Z
H	L	GND	Z	H	Z	H	L
L	H	GND	Z	Z	H	Z	L
H	H	GND	Z	Z	H	H	L

Note 2. Z: High Impedance

Pin Connection Diagram