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## NTE1843 Integrated Circuit FM Front End

### **Description:**

The NTE1843 is an integrated circuit in a 9-Lead SIP type package designed for use in FM front-end applications. Typical applications include portable radio and radio cassettes.

Compared with conventional types, supply voltage dependence, overload characteristics and spurious radiation characteristics are improved.

### **Features:**

- Wide Supply Voltage Range:  $V_{CC} = 1.6V$  to  $6.0V$
- Excellent Supply Voltage Dependence of Local Oscillator: Oscillator Stop  $V_{CC} = 0.9V$  Typ
- Improved Inter-Modulation Characteristics by Double Balanced Type Mixer Circuit
- Low Spurious Radiation
- Built-In Clamping Diode for the Local Oscillator Output

### **Absolute Maximum Ratings:** ( $T_A = +25^\circ C$ unless otherwise specified)

|  |                               |
|--|-------------------------------|
| Supply Voltage, $V_{CC}$ .....               | 8V                            |
| Power Dissipation, $P_D$ .....               | 500mW                         |
| Derate Above $25^\circ C$ .....              | 4mW/ $^\circ C$               |
| Operating Temperature Range, $T_{opr}$ ..... | $-25^\circ$ to $+75^\circ C$  |
| Storage Temperature Range, $T_{stg}$ .....   | $-55^\circ$ to $+150^\circ C$ |

### **Electrical Characteristics:** ( $T_A = +25^\circ C$ , $V_{CC} = 5V$ , $f = 83MHz$ , $f_m = 1kHz$ , $\Delta f = 22.5kHz$ dev. unless otherwise specified)

| Parameter                                    | Symbol        | Test Conditions   | Min | Typ | Max | Unit        |
|--|---------------|-------------------|-----|-----|-----|-------------|
| Supply Current                               | $I_{CC}$      | $V_{IN} = 0$      | –   | 5.2 | 8.0 | mA          |
| –3dB Limiting Sensitivity                    | $V_{in(lim)}$ |                   | –   | 3.0 | 7.0 | dB $\mu$    |
| Quiescent Sensitivity                        | $Q_S$         |                   | –   | 11  | –   | dB $\mu$    |
| Conversion Gain                              | $G_C$         |                   | –   | 31  | –   | dB          |
| Local OSC Voltage                            | $V_{OSC}$     | $f_{OSC} = 60MHz$ | 150 | 230 | 350 | mV $_{rms}$ |
| Parallel Input Resistance (Pin1 Impedance)   | $r_{ip1}$     |                   | –   | 57  | –   | $\Omega$    |
| Parallel Output Resistance (Pin3 Impedance)  | $r_{op3}$     | $f = 83MHz$       | –   | 25  | –   | k $\Omega$  |
| Parallel Output Capacitance (Pin3 Impedance) | $C_{op3}$     |                   | –   | 2.0 | –   | pF          |
| Parallel Input Resistance (Pin4 Impedance)   | $r_{ip4}$     |                   | –   | 2.7 | –   | k $\Omega$  |
| Parallel Input Capacitance (Pin4 Impedance)  | $C_{ip4}$     |                   | –   | 3.3 | –   | pF          |
| Parallel Output Resistance (Pin6 Impedance)  | $r_{op6}$     | $f = 10.7MHz$     | –   | 100 | 0   | k $\Omega$  |
| Parallel Output Capacitance (Pin6 Impedance) | $C_{op6}$     |                   | –   | 4.8 | –   | pF          |
| Local OSC Stop Voltage                       | $V_{stop}$    |                   | –   | 0.9 | 1.3 | V           |

**Pin Connection Diagram**  
(Front View)

