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## NTE1713 Integrated Circuit Line Noise Canceller for VCR

### Description:

The NTE1713 is an integrated circuit in an 18-Lead DIP type package designed for use as a line noise canceller in VCRs.

### Features:

- The Functions Consist of:  
     FM Demodulator  
     Differential Amplifier
- Supply Voltage: 5V

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

Supply Voltage,  $V_{CC}$  ..... 6V  
 Power Dissipation ( $T_A = +70^\circ\text{C}$ ),  $P_D$  ..... 370mW  
 Operating Ambient Temperature Range,  $T_{opr}$  .....  $-20^\circ$  to  $+70^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+150^\circ\text{C}$

### Absolute Maximum Ratings: ( $V_{CC} = 5V$ , $T_A = +25^\circ\text{C} \pm 2^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	$I_7$	Pin11: $V_{CC}$	30	–	60	mA
FM Demodulator Detection Sensitivity	$S_{10}$	$C = 47\text{pF}$ , $R_{10} = 900\Omega$ , $f_{IN} = 3.5$ to $4.5\text{MHz}$	80	–	140	mV/MHz
FM Demodulator Detection Limit	$f_{(lim)}$	$C = 47\text{pF}$ , $V_{IN} = 50\text{mV}_{P-P}$	7	–	–	MHz
FM Demodulator Carrier Leak	$CL_{10}$	$C = 47\text{pF}$ , $R_{10} = 900\Omega$ , $f_{IN} = 4\text{MHz}$ , $V_{IN} = 50\text{mV}_{P-P}$	–	–	–30	dB
Differential Amp Gain	$G_{V15}$	Input: Pin17, $f_{IN} = 1\text{MHz}$ , $V_{IN} = 100\text{mV}_{P-P}$	14.3	–	17.3	dB
		Input: Pin18, $f_{IN} = 1\text{MHz}$ , $V_{IN} = 100\text{mV}_{P-P}$	12.8	–	15.8	dB
Main Signal Amp System Gain	$G_{V22}$	Input: Pin18, $f_{IN} = 1\text{MHz}$ , $V_{IN} = 100\text{mV}_{P-P}$	10	–	13	dB
Mix Amp Gain	$V_{G17}$	Input: Pin14, $f_{IN} = 1\text{MHz}$ , $V_{IN} = 500\text{mV}_{P-P}$	–4.5	–	–1.5	dB
Electronic SW Select Level Difference	$V_{O(offset)}$	Switching Pulse 30kHz	–	–	5	mV
Electronic SW Select Sensitivity	$S_{11}$	Switching Pin1 Output	–	–	3	V
Electronic SW Select Crosstalk	$CT_1$	Input: Pin14 $1V_{P-P}$	–	–	–40	dB
		Input: Pin16 $1V_{P-P}$	–	–	–40	dB
Line Noise Canceller Limiter Gain	$G_{V12}$	$f_{IN} = 1\text{MHz}$ , $V_{IN} = 25\text{mV}_{P-P}$	13	–	17	dB

Note 1. Operating Supply Voltage:  $V_{CC(opr)} = 4.5V$  to  $5.5V$

### Pin Connection Diagram

Line Noise Canceller Output (Collector)	<b>1</b>	<b>18</b>	Diff Amp Input (2)
Line Noise Canceller Output (Emitter)	<b>2</b>	<b>17</b>	Diff Amp Input (1)
GND	<b>3</b>	<b>16</b>	Electric Sw Input (2)
IH Delay FM Input	<b>4</b>	<b>15</b>	Diff Amp Output
FM Limiter Capacitance (1)	<b>5</b>	<b>14</b>	Electric Sw Input (1)
FM Limiter Capacitance (2)	<b>6</b>	<b>13</b>	Line Noise Canceller Limiter Input
V <sub>CC</sub>	<b>7</b>	<b>12</b>	Line Noise Canceller Limiter Output
FM Demod Capacitance (1)	<b>8</b>	<b>11</b>	DOC Pulse Input
FM Demod Capacitance (2)	<b>9</b>	<b>10</b>	FM Demod Output

