



ELECTRONICS, INC.  
44 FARRAND STREET  
BLOOMFIELD, NJ 07003  
(973) 748-5089  
<http://www.nteinc.com>

## NTE1581 Integrated Circuit CMOS, Frequency Divider/Counter for VCR

### **Description:**

The NTE1581 is a frequency divider manufactured by aluminum CMOS technology. It produces a frequency of 1/59719 or 1/88672 of the input frequency (3.58MHz to 60Hz or 4.43MHz to 50Hz).

### **Features:**

- Makes Possible a Crystal Oscillator Circuit
- Capable of Handling Small-Amplitude Input Signals as low as 0.3V<sub>pp</sub>
- Frequency-Dividing Ratio Selected Through Terminal N
- Reset Function
- Produces a Shaped-Waveform Output of the same Frequency as the Input Signal or Oscillation Output
- Derives a Vertical Scanning Frequency from TV Color Subcarrier

### **Applications:**

- Frequency Divider for VTR

### **Absolute Maximum Ratings:**

Supply Voltage, V <sub>CC</sub> .....	-0.3V to 9V
Input Voltage, V <sub>I</sub> .....	V <sub>SS</sub> ≤ V <sub>I</sub> ≤ V <sub>DD</sub>
Power Dissipation (T <sub>A</sub> = +25°C), P <sub>T</sub> .....	250W
Operating Free-Air Temperature Range, T <sub>opt</sub> .....	-30° to +70°C
Storage Temperature Range, T <sub>stg</sub> .....	-40° to +125°C

### **Recommended Operating Conditions:** (T<sub>A</sub> = -30° to +70°C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	V <sub>DD</sub>	4.75	-	8.5	V
Supply Voltage	V <sub>SS</sub>	-	0	-	V
High-Level Input Voltage	V <sub>IH</sub>	V <sub>DD</sub> to 0.5			V
Low-Level Input Voltage	V <sub>IL</sub>	-	-	0.5	V
Oscillation Input Amplitude Voltage	V <sub>I</sub>	0.3	-	-	V <sub>PP</sub>
Input frequency with the terminal N in High-Level	f	-	3.58	5.5	MHz
Input frequency with the terminal N in Low-Level	f	-	4.43	5.5	MHz

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{DD} = 6.5\text{V}$ ,  $V_{SS} = 0\text{V}$ ,  $f_{IN} = 4.5\text{MHz}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operational Supply Voltage	$V_{DD}$	$T_A = -30^\circ \text{ to } +70^\circ\text{C}$	4.75	-	8.5	V
Supply Current	$I_{DD}$	N. RESET Input/Output Open	-	-	5	mA
High-Level Input Voltage	$V_{IH}$		$V_{DD}$ to 0.5	-	-	V
Low-Level Input Voltage	$V_{IL}$		-	-	0.5	V
High-Level Output Voltage	$V_{OH}$		$V_{DD}$ to 0.5	-	-	V
Low-Level Output Voltage	$V_{OL}$		-	-	0.5	V
High-Level Output Current	$I_{OH}$	$V_D = V_{SS}$	-2	-	-	mA
Low-Level Output Current	$I_{OL}$	$V_O = V_{DD}$	2	-	-	mA
Pull-Up Resistance	$R_I$		-	20	-	kΩ
N. RESET Inputs			-	20	-	kΩ
Oscillation Input Amplitude Voltage	$V_I$	$V_{DD} = 4.75\text{V}$	0.3	-	-	$V_{PP}$
Max. Operating Frequency	$f_{MAX}$		5.5	-	-	MHz

**Pin Connection Diagram**

