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NTE7178 thru NTE7181 Integrated Circuit Module-3 Channel Convergence Correction Circuit for Video Projection Televisions

Description:

The NTE7178 thru NTE7181 are convergence correction circuits designed for use in video projectors. These devices incorporate three output amplifiers in a single package, making possible the construction of CRT horizontal and vertical convergence correction output circuits for each of the RGB colors using just two hybrid ICs.

The NTE7178 is available in an 18-Lead SIP package while the NTE7179 thru NTE7181 is packaged in a 22-Lead SIP.

Features:

- 3 Output Amplifier Circuits in a Single Package
- High Maximum Supply Voltage
- Low Thermal Resistance
- High Temperature Stability (T_C max = +125°C)
- Separate Predriver and Output Stage Supplies
- Output Stage Supply Switching for High-Performance Designs
- Low Inrush Current when Power is Applied

Applications:

- Video Projectors (Both Standard and High Definition)

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

Operating Supply Voltage, V_{CC}

NTE7178, NTE7179	±38V
NTE7180	±44V
NTE7181	±50V

Collector Current, I_C

NTE7178	3A
NTE7179	5A
NTE7180	6A
NTE7181	7A

Thermal Resistance, Junction-to-Case, R_{thJC}

NTE7178	+3.0°C/W
NTE7179	+2.6°C/W
NTE7180	+2.1°C/W
NTE7181	+1.8°C/W

Maximum Horizontal Frequency, f_H

NTE7178, NTE7179	15KHz
NTE7180	35kHz
NTE7181	100kHz

Junction Temperature, T_j +150°C

Operating Temperature, T_C +125°C

Storage Temperature Range, T_{stg} -30° to +125°C

Note 1. **NTE7179** and **NTE7181** are **discontinued** devices and **no longer available**.

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$, $R_g = 50\Omega$, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Noise Voltage NTE7178, NTE7179	V_{NO}	$V_{CC} = \pm 30\text{V}$		–	–	0.2	mVrms
NTE7180		$V_{CC} = \pm 35\text{V}$		–	–	0.2	mVrms
NTE7181		$V_{CC} = \pm 40\text{V}$		–	–	0.2	mVrms
Quiescent Current NTE7178	I_{CCO}	$V_{CC} = \pm 30\text{V}$		15	22	30	mA
NTE7179		$V_{CC} = \pm 30\text{V}$		30	90	150	mA
NTE7180		$V_{CC} = \pm 35\text{V}$		30	90	150	mA
NTE7181		$V_{CC} = \pm 40\text{V}$		30	90	150	mA
Neutral Voltage NTE7178, NTE7179	V_N	$V_{CC} = \pm 30\text{V}$		–50	0	+50	mV
NTE7180		$V_{CC} = \pm 35\text{V}$		–50	0	+50	mV
NTE7181		$V_{CC} = \pm 40\text{V}$		–50	0	+50	mV
Output Delay Time NTE7178, NTE7179	t_D	Triangle Wave Input, $V_{OUT} = 1.5V_{P-P}$	$V_{CC} = \pm 30\text{V}$, $f = 15.75\text{kHz}$	–	–	1	μs
NTE7180			$V_{CC} = \pm 35\text{V}$, $f = 15.75\text{kHz}$	–	–	1	μs
NTE7181			$V_{CC} = \pm 40\text{V}$, $f = 64\text{kHz}$	–	–	0.2	μs
Frequency Response NTE7179	f_H	0dB at 1kHz, sine wave input, $V_{in} = 50\text{mV}_{P-P}$	$V_{CC} = \pm 30\text{V}$, –3dB	–	1.8	–	MHz
NTE7181			$V_{CC} = \pm 35\text{V}$, –3dB	–	3.8	–	MHz

Pin Connection Diagram
(Front View)

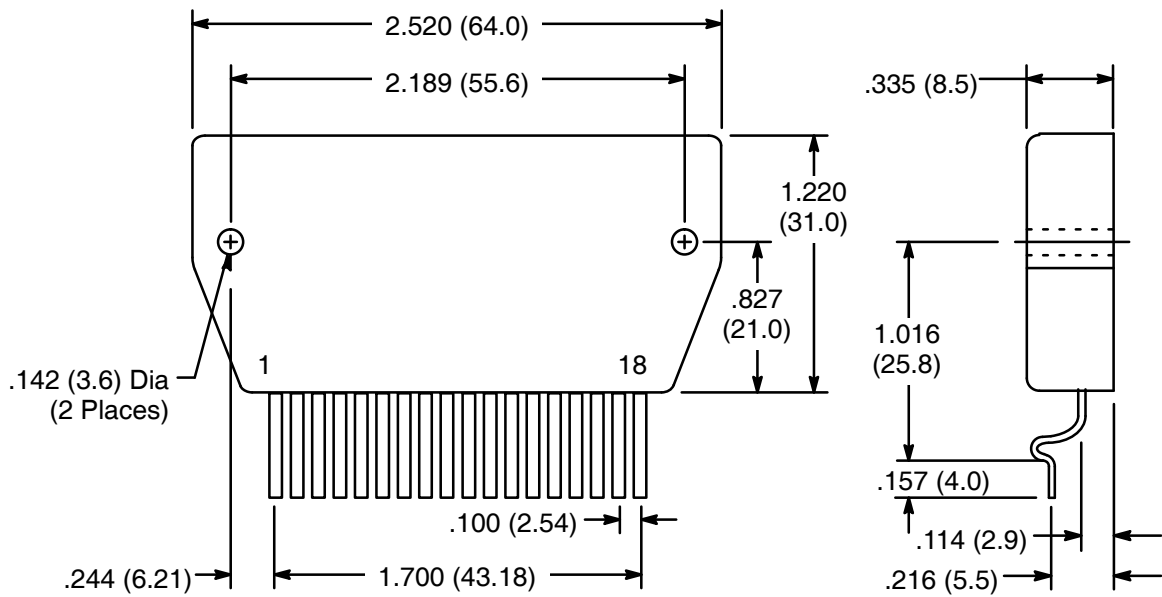
NTE7178

18	Output Ch 3
17	– V_{CC} Ch 3
16	(–) Input Ch 3
15	(+) Input Ch 3
14	(+) Input Ch 2
13	(–) Input Ch 2
12	– V_{CC} Ch 2
11	Output Ch 2
10	+ V_{CC}
9	Output Ch 1
8	– V_{CC} Ch 1
7	(–) Input Ch 1
6	(+) Input Ch 1
5	Pre + V_{CC}
4	Pre – V_{CC}
3	Muting
2	GND
1	Sub GND

NTE7179, NTE7180, NTE7181

22	Output Ch 3
21	Output Ch 2
20	Output Ch 1
19	– V_{CC} Ch 2
18	+ V_{CC} Ch1 /Ch 2
17	– V_{CC} Ch 1
16	– V_{CC} Ch 3
15	+ V_{CC} Ch 3
14	Pre + V_{CC} Ch 1/Ch2
13	Pre – V_{CC} Ch 1/Ch2
12	Pre – V_{CC} Ch 3
11	Pre + V_{CC} Ch 3
10	Input Ch 2
9	NF Ch 2
8	GND
7	NF Ch 1
6	Input Ch 1
5	NF Ch 3
4	Input Ch 3
3	N.C.
2	N.C.
1	N.C.

NTE7178



NTE7179, NTE7180, NTE7181

