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NTE7090

Variable Output Voltage Regulator (Dual Tracking Type)

Description:

The NTE7090 is a dual tracking, variable output voltage regulator housed in a 8–pin SIP.

The output voltage can be adjusted over a wide range from ±3 to ±30V by adjusting the value of the voltage setting external resistors. By adjusting the resistance of the external balance setting resistors the positive/negative output voltage ratio can also be set freely. Again by attaching power transistors high current gains can be achieved making the device suitable for use in the power supplies of a wide variety of equipment.

Features:

- High Input voltage . . . . . V_I = ±35V
- Wide Range of Output Voltage . . . . V_O = ±3 to ±30V
- Low output noise voltage . . . . . V_{NO} = 12μV_{rms}(typ)
- Built–in current limiting and thermal shutdown circuit
- The output voltage rise time constant of the coefficients can be adjusted by the value of the external capacitor.
- Capability of operation control by the external control signal (Pin 8).

Application:

Dual voltage power supplies for stereo preamplifiers, for the power supplies of other equipment, including operational amplifiers.

Recommended Operating Conditions:

Supply Voltage Range . . . . . ±8 to ±35V
Rated Supply Voltage . . . . . ±20V

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

Input Voltage, V_I . . . . . ±35V
Load Current, I_L . . . . . ±30mA
Input–Output Voltage Difference, V_I–V_O . . . . . ±32V
Power Dissipation, P_D 800mW
Operating Ambient Temperature Range, T_{opr} . . . . . –20° to +75°C
Storage Temperature Range, T_{stg} . . . . . –56° to +125°C

Electrical Characteristics: (T_A = +25°C, V_I = ±20V, V_O = ±15V, I_L = 10mA unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	V_I		±8	–	±35	V
Output Voltage	V_O	R_2 = 1.5 to 55kΩ	±3	–	±30	V
Reference Voltage	V_{REF}	(Between Pin5 and Pin1)	1.66	1.8	1.95	V
Minimum Input–Output Voltage Difference	V_I–V_O		–	2.5	3	V
Dual Voltage Tracking	ΔV_O±		–	–	1	%
Input Regulation	R_{egin}	V_I = ±18 to ±30V	–	0.02	0.1	%/V
Load Regulation	R_{egL}	I_L = 0 to 20mA	–	0.02	0.1	%
Bias Current	I_S	I_L = 0	–	1.3	3.0	mA
Temperature Coefficient of Output Voltage	TC_{VO}	T_A = 0° to 75°C, V_O = ±3 to ±30V	–	0.01	–	%/°C
Ripple Rejection	RR	f = 120Hz	–	68	–	dB
Output Noise Voltage	V_{HO}	f = 20Hz to 100kHz (between the output terminal and ground)	–	12	–	μV_{rms}
Output Cut–Off Voltage	$V_{O(off)}$	V_I = 10V	–	–	±0.1	V

Pin Connection Diagram
(Front View)