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NTE1918
3 Terminal Positive Voltage Regulator
15V, 3A

Description:

The NTE1918 is a positive 3–terminal voltage regulator in a TO3 type package capable of driving loads in excess of 3A. This device employs internal current limiting, thermal shutdown, and safe–area compensation.

Although designed primarily as a fixed voltage regulator, the NTE1918 can be used with external components to obtain adjustable voltages and currents.

Features:

- Output Current in Excess of 3A
- Power Dissipation: 30W
- Internal Thermal Overload Protection
- Output Transistor Safe Area Protection
- Internal Short Circuit Current Limit
- No External Components Required

Absolute Maximum Ratings:

Input Voltage , V_{IN} 40V
Power Dissipation (T_A = +25°C, Note 1), P_D . . . . . Internally Limited
Power Dissipation (T_C = +25°C, Note 1), P_D . . . . . Internally Limited
Operating Junction Temperature Range, T_J . . . . . 0° to +150°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.5°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 35°C/W

Note 1. Although power dissipation is internally limited, specifications apply only for $P_O \le 30W$.

Electrical Characteristics: ($0° \le T_J \le +125°C$, V_{IN} = 20V, I_O = 3Aunless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	T_J = +25°C, 5mA ≤ I_O ≤ 3A	14.4	15.0	15.6	V
		5mA ≤ I_O ≤ 2A, 17.5V ≤ V_{IN} ≤ 30V	14.25	15.00	15.75	V
Line Regulation	Reg_{line}	T_J = +25°C, 20V ≤ V_{IN} ≤ 26V, Note 2	–	7.5	55	mV
		18V ≤ V_{IN} ≤ 30V, I_O = 1A, Note 2	–	7.5	55	mV
Load Regulation	Reg_{load}	T_J = +25°C, 5mA ≤ I_O ≤ 3A, Note 2	–	10	30	mV
		5mA ≤ I_O ≤ 3A, Note 2	–	15	80	mV

Note 2. Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Electrical Characteristics (Cont'd): (0° ≤ T_J ≤ +125°C, V_{IN} = 20V, I_O = 3Aunless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	I_Q	T_J = +25°C, 5mA ≤ I_O ≤ 3A	–	3.5	5.0	mA
		5mA ≤ I_O ≤ 3A	–	4.0	6.0	mA
Quiescent Current Change	I_Q	T_J = +25°C, 17.6V ≤ V_{IN} ≤ 40V, I_O = 5mA	–	0.3	1.0	mA
		18V ≤ V_{IN} ≤ 30V, I_O = 1A	–	0.3	1.0	mA
Output Noise Voltage	V_n	T_J = +25°C, f = 10Hz to 100kHz	–	10	–	µV
Output Resistance	r_O	f = 1kHz	–	2	–	mΩ
Short Circuit Current Limit	I_{sc}	T_A = +25°C, V_{IN} = 40V	–	0.2	1.2	A
Ripple Rejection Ratio	RR	T_J = +25°C, 18.5V ≤ V_{IN} ≤ 28.5V, f = 120Hz, I_O = 2A	55	65	–	dB
Dropout Voltage		T_J = +25°C, I_O = 3A	–	2.2	2.5	V
Peak Output Current	$I_O$max	T_J = +25°C	–	5	–	A
Average Temperature Coefficient of Output Voltage		I_O = 5mA	–	0.6	–	mV/°C

Note 2. Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.