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NTE1904
Integrated Circuit
Positive 3 Terminal Voltage Regulator, Low Dropout Voltage, 3.3V, 1A

Description:

The NTE1904 is a positive voltage regulator in a TO220 type package and features very low dropout voltage and very low quiescent current making it particularly suitable for low noise, low power applications and specifically in battery powered systems.

Features:

- Very Low Dropout Voltage: 0.45V
- Very Low Quiescent Current
- Logic–Controlled Electronic Shutdown
- Internal Current and Thermal Limit

Absolute Maximum Ratings:

Input Voltage, V_I . . . . . –0.5 to 40V
Output Current, I_O . . . . . Internally Limited
Power Dissipation, P_{tot} . . . . . Internally Limited
Operating Junction Temperature Range, T_{opr} . . . . . –40° to +125°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 3°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 50°C/W

Electrical Characteristics: (T_J = +25°C, C_i = 0.1µF, C_o = 2.2µF, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_O	I_O = 50mA, V_i = 5.3V		3.234	3.3	3.366	V
			–25° < T_A < +85°C	3.168	–	3.432	V
Operating Input Voltage	V_i	I_O = 500mA		–	–	16	V
Output Current Limit	I_{out}			–	1	–	A
Line Regulation	Reg_{line}	V_i = 4.3V to 16V, I_O = 5 mA		–	2	12	mV
Load Regulation	Reg_{load}	V_i = 4.6V, I_O = 5mA to 500mA		–	2	10	mV
Quiescent Current ON Mode	I_d	V_i = 4.3V to 16V, I_O = 0mA		–	0.5	1.0	mA
		V_i = 4.6V to 16V, I_O = 500mA		–	–	12	mA
OFF Mode		V_i = 6V		–	50	100	µA

Electrical Characteristics (Cont'd): (T_J = +25°C, C_i = 0.1µF, C_o = 2.2µF, unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Supply Voltage Rejection	SVR	I_O = 5mA, V_i = 5.3V ±1V	f = 120Hz	–	80	–	dB
			f = 1kHz	–	75	–	dB
			f = 10kHz	–	60	–	dB
Output Noise Voltage	e_N	B = 10Hz to 100kHz		–	50	–	µV
Dropout Voltage	V_d	I_O = 200mA		–	0.2	0.35	V
		I_O = 500mA		–	0.4	0.7	V
Control Input Logic, Low	V_{il}	–40° < T_A < +125°C		–	–	0.8	V
Control Input Logic, High	V_{ih}			2	–	–	V
Control Input Current	I_i	V_i = 6V, V_c = 6V		–	10	–	µA
Output Bypass Capacitance	C_O	ESR = 0.1Ω to 10Ω, I_O = 0 to 500mA		2	10	–	µF