

NTE7124 Integrated Circuit Positive 5V Regulator w/Reset Function

Description:

The NTE7124 is a reset function–provided, general–purpose voltage regulator IC in a 5–Lead TO220 type package with output current 500mA designed for use in microcomputers.

Features:

- Reset Function (Power Supply Voltage Monitor: Generates a Reset Signal at a Power–ON and Temporal Power–Down)
- On–Chip ASO Protector
- On–Chip Thermal Protector
- On–Chip Overcurrent Limiter

Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Maximum Input Voltage, V_{INmax}	35V
Reset Pin Supply Voltage, V_{reset}	35V
Allowable Power Dissipation, P_{dmax}	
No Fin	1.75W
$T_C = +25^\circ\text{C}$	20W
Operating Temperature Range, T_{opr}	-30° to $+80^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

Recommended Operating Conditions: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Voltage	V_{IN}		7.5	–	20.0	V
Output Current	I_O		5	–	500	mA

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{IN} = 10\text{V}$, $I_O = 0.35\text{A}$, $C_O = 10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Voltage	V_{O1}	$T_J = +25^\circ\text{C}$		4.8	5.0	5.2	V
	V_{O2}	$7\text{V} \leq V_{IN} \leq 20\text{V}$, $5\text{mA} \leq I_O \leq 0.35\text{A}$		4.75	–	5.25	V
Line Regulation LN1	ΔV_O	$T_J = +25^\circ\text{C}$, $I_O = 0.2\text{A}$	$7\text{V} \leq V_{IN} \leq 20\text{V}$	–	1.0	100	mV
LN2			$8\text{V} \leq V_{IN} \leq 20\text{V}$	–	0.5	50	mV

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$, $V_{IN} = 10\text{V}$, $I_O = 0.35\text{A}$, $C_O = 10\mu\text{F}$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Load Regulation LD1		$T_J = +25^{\circ}\text{C}$	$5\text{mA} \leq I_O \leq 0.5\text{A}$	–	3.0	100	mV
LD2			$5\text{mA} \leq I_O \leq 0.2\text{A}$	–	1.5	50	mV
Current Dissipation	I_{CC}	$T_J = +25^{\circ}\text{C}$		–	3.4	6.0	mA
Current Dissipation Variation Line (LN)	ΔI_{CC}	$8\text{V} \leq V_{IN} \leq 25\text{V}, I_O \leq 0.2\text{A}$		–	–	0.8	mA
Load (LD)		$5\text{mA} \leq I_O \leq 0.35\text{A}$		–	–	0.5	mA
Output Noise Voltage	V_{NO}	$I_O = 5\text{mA}, 10\text{Hz} \leq f \leq 100\text{kHz}$		–	60	–	μV
Ripple Rejection	RR	$I_O = 0.1\text{A}$	$T_J = +25^{\circ}\text{C}, f = 120\text{Hz},$ $8\text{V} \leq V_{IN} \leq 18\text{V}$	62	80	–	dB
		$I_O = 0.3\text{A}$		62	77	–	dB
Dropout Voltage	V_{drop}			–	2.0	2.5	V
Peak Output Current	I_{OP}	$T_J = +25^{\circ}\text{C}$		–	1.1	–	A
Short–Circuit Current	I_{OSC}	$T_J = +25^{\circ}\text{C}, V_{IN} = 35\text{V}$		–	0.02	–	A
Temperature Coefficient of Output Voltage	$\Delta V_O/\Delta T$	$I_O = 5\text{mA}, T_J = +25^{\circ}$ to $+125^{\circ}\text{C}$		–	–0.3	–	$\text{mV}/^{\circ}\text{C}$
'L' Reset Output Voltage	V_{ORL}	$V_O \leq 4.5\text{V}, I_O = 5\text{mA}$		–	–	0.2	V
Reset Threshold Voltage	V_{RT}	$I_O = 5\text{mA}$		$V_O^{-0.3}$	$V_O^{-0.2}$	–	V
Reset Hysteresis Voltage	V_{RTH}	$I_O = 5\text{mA}$		–	100	–	mV
Reset Output Delay Time	t_d	$C_d = 0.1\mu\text{F}, I_O = 5\text{mA}$		–	10	–	ms

Pin Connection Diagram
(Front View)



