



**ELECTRONICS, INC.**  
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## NTE1938 Integrated Circuit Positive Voltage Regulator, 15V, 2A

**Features:**

- 3 Pin Plastic Package TO3P
- Only Output Capacitor is Externally Required
- Precise Setting Voltage of  $\pm 2\%$
- Wide Input Voltage Range
- Built-in Current Foldback Protection
- Ideal Combination of Passivated Power Transistor and High Reliability Flip-Chip Circuit

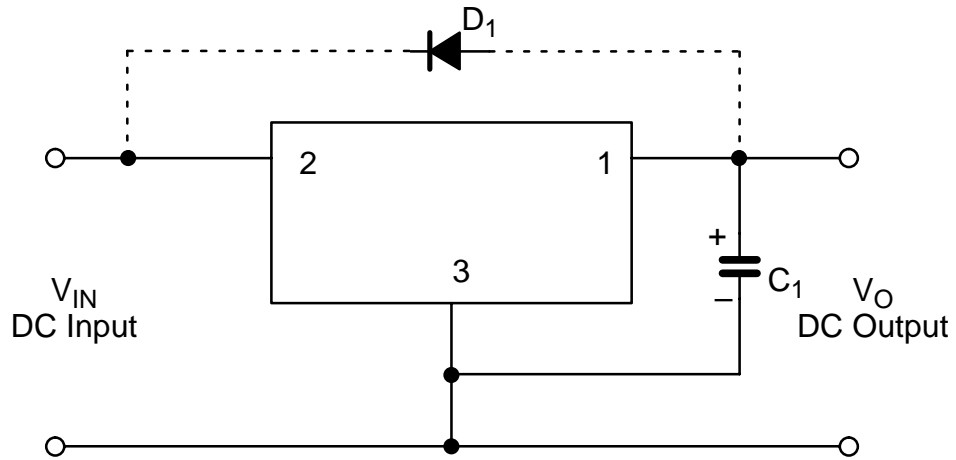
**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

DC Input Voltage, $V_{IN}$ .....	45V
Power Dissipation, $P_C$ ( $T_C = +25^\circ\text{C}$ ) .....	50W
(No Fin) .....	2W
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	$2^\circ\text{C/W}$
Junction Temperature Range, $T_J$ .....	$-30^\circ$ to $+125^\circ\text{C}$
Operating Ambient Temperature Range, $T_{op}$ .....	$-20^\circ$ to $+80^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-30^\circ$ to $+125^\circ\text{C}$

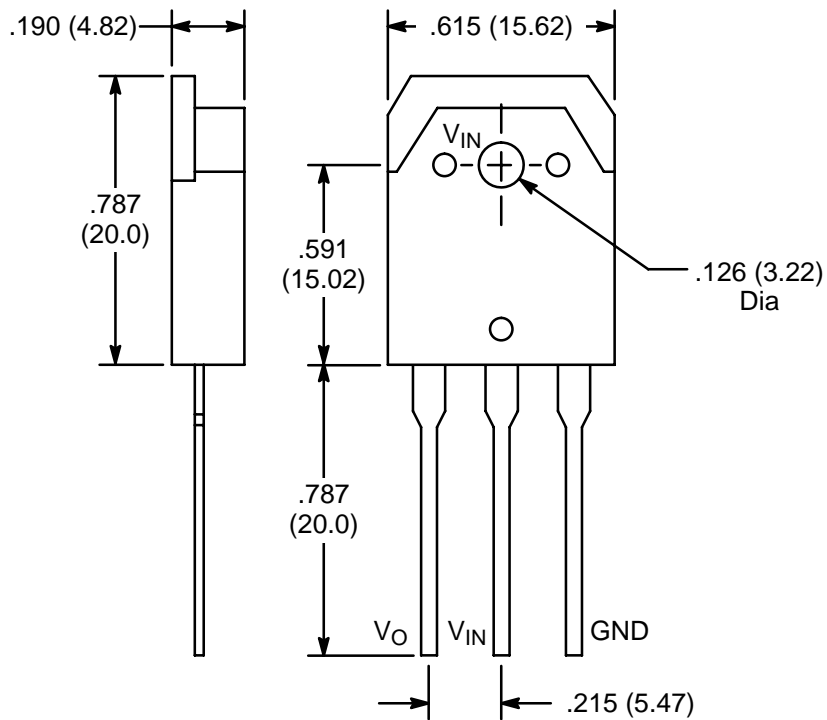
**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Input Voltage	$V_{IN}$	$I_O = 2A$	18	–	40	V
Output Voltage	$V_O$	$V_{IN} = 23V, I_O = 0.5A$	14.8	15.0	15.2	V
Output Current	$I_O$		0	–	2	A
Line Regulation	$\Delta V_{LINE}$	$V_{IN} = 19.5V$ to $26.5V, I_O = 0.5A$	–	10	30	mV
Load Regulation	$\Delta V_{LOAD}$	$V_{IN} = 23V, I_O = 0$ to $2A$	–	80	200	mV
Temperature Coefficient	$K_t$		–	$\pm 0.5$	–	$\text{mV}/^\circ\text{C}$
Ripple Rejection	RR	$f = 100\text{Hz}$ to $120\text{Hz}$	–	60	–	dB
Foldback Current	$I_{S1}$		2.4	–	–	A
Short-Circuit Current	$I_{S2}$		–	–	0.6	A

External Circuit



- Note 1. Output capacitor  $C_1$  (47 to 100 $\mu$ f) shall be connected directly to output terminal (Pin1) and GND terminal (Pin3) as shown above.
- Note 2. When wiring between the regulator and the load is long, another capacitor (47 to 100 $\mu$ f) shall be added in parallel with the load.
- Note 3. If there is a possibility of reverse biasing between input and output, a protection diode ( $D_1$ ) is to be added. The recommended diode for  $D_1$  is NTE116.



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