

ST 78L20

3-Terminal positive voltage regulator

Features

- Internal short-circuit current limiting
- Internal thermal overload protection
- Maximum output current of 100 mA ($T_j = 25^\circ\text{C}$)



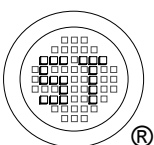
1. Output 2. Common 3. Input
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	40	V
Power Dissipation	P_{tot}	800	mW
Operating Temperature	T_{opr}	- 30 to + 75	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

Electrical Characteristics (Unless otherwise specified, $V_{IN} = 29\text{ V}$, $I_{OUT} = 40\text{ mA}$, $C_{IN} = 0.33\text{ }\mu\text{F}$, $C_{OUT} = 0.1\text{ }\mu\text{F}$, $T_j = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Output Voltage	V_{OUT}	19.2	20	20.8	V
Input Regulation $23.5\text{ V} \leq V_{IN} \leq 35\text{ V}$ $24\text{ V} \leq V_{IN} \leq 35\text{ V}$	Reg. line	-	33 28	330 285	mV
Load Regulation $1\text{ mA} \leq I_{OUT} \leq 100\text{ mA}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	Reg. load	-	33 17	180 90	mV
Output Voltage $23.5\text{ V} \leq V_{IN} \leq 35\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	V_{OUT}	19	-	21	V
Output Voltage $V_{IN} = 29\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 70\text{ mA}$	V_{OUT}	19	-	21	V
Quiescent Current	I_B	-	3.3	6.5	mA
Quiescent Current Change $24\text{ V} \leq V_{IN} \leq 35\text{ V}$ $1\text{ mA} \leq I_{OUT} \leq 40\text{ mA}$	ΔI_B	-	-	1.5 0.1	mA
Output Noise Voltage at $T_a = 25^\circ\text{C}$, $10\text{ Hz} \leq f \leq 100\text{ KHz}$	V_{NO}	-	170	-	μV
Ripple Rejection at $f = 120\text{ Hz}$, $25\text{ V} \leq V_{IN} \leq 35\text{ V}$, $T_j = 25^\circ\text{C}$	RR	31	37	-	dB
Dropout Voltage at $T_j = 25^\circ\text{C}$	$ V_{IN} - V_{OUT} $	-	1.7	-	V
Average Temperature Coefficient of Output Voltage at $I_{OUT} = 5\text{ mA}$	TC_{VO}	-	-1.7	-	$\text{mV}/^\circ\text{C}$



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