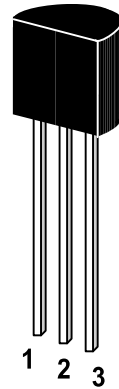


# ST 78L13

## 3-Terminal positive voltage regulator

13V

- Suitable for TTL, DTL, HTL, C-MOS, Power Supply
- Internal Short-Circuit Current Limiting
- Internal Thermal Overload Protection
- Maximum Output Current of 150mA ( $T_j=25^\circ\text{C}$ )
- Available in the Plastic TO-92 Package



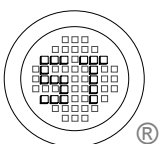
1. Output 2. Common 3. Input

TO-92 Plastic Package  
Weight approx. 0.19g

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

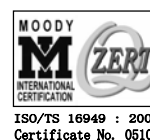
	Symbol	Rating	Unit
Input Voltage	$V_{IN}$	35	V
Power Dissipation	$P_{tot}$	800	mW
Operating Temperature	$T_{opr}$	-30~75	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55~150	$^\circ\text{C}$

**G S P FORM A IS AVAILABLE**



## SEMTECH ELECTRONICS LTD.

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 07/12/2002

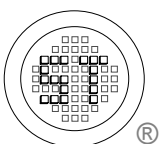
# ST 78L13

## Electrical Characteristics

(Unless otherwise specified,  $V_{IN}=21V$ ,  $I_{OUT}=40mA$ ,  $C_{IN}=0.33\mu F$ ,  $C_{OUT}=0.1\mu F$ ,  $T_j=25^\circ C$ )

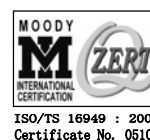
		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Output Voltage		$V_{OUT}$		12.45	13	13.55	V
Input Regulation		Reg. line	$16V \leq V_{IN} \leq 28V$	-	125	270	mV
			$17V \leq V_{IN} \leq 28V$	-	105	225	
Load Regulation		Reg. load	$1.0mA \leq I_{OUT} \leq 100mA$	-	22	120	mV
			$1.0mA \leq I_{OUT} \leq 40mA$	-	11	60	
Output Voltage		$V_{OUT}$	$16V \leq V_{IN} \leq 28V$ $1.0mA \leq I_{OUT} \leq 40mA$	12.54	-	13.86	V
		$V_{OUT}$	$V_{IN}=21V$ $1.0mA \leq I_{OUT} \leq 70mA$	12.54	-	13.86	V
Quiescent Current		$I_B$		-	3.2	6.5	mA
Quiescent Current Change	With line	$\Delta I_B$	$17V \leq V_{IN} \leq 28V$	-	-	1.5	mA
	With load		$1.0mA \leq I_{OUT} \leq 40mA$	-	-	0.1	
Output Noise Voltage		$V_{NO}$	$T_a=25^\circ C$ , $10Hz \leq f \leq 100KHz$	-	90	-	$\mu V$
Ripple Rejection		RR	$f=100Hz$ , $17V \leq V_{IN} \leq 27V, T_j=25^\circ C$	34	41	-	dB
Dropout Voltage		$ V_{IN}-V_{OUT} $	$T_j=25^\circ C$	-	1.7	-	V
Average Temperature Coefficient of Output Voltage		$TC_{VO}$	$I_{OUT}=5mA$	-	1.2	-	$mV/^\circ C$

**G S P FORM A IS AVAILABLE**



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ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001  
Certificate No. 7116



ISO 9001 : 2000  
Certificate No. 000-1000-00-001

Dated : 07/12/2002