

### **VS7912** Three-terminal negative voltage regulator

# **FEATURES**

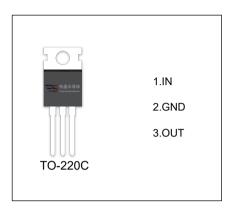
Maximum output current

I<sub>OM</sub>: 1.5 Å

Output voltage V<sub>O</sub>:- 12 V

Continuous total dissipation

P<sub>D</sub>: 1.5 W (T<sub>a</sub>= 25 °C)



## ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

Parameter	Symbol	Value	Unit	
Input Voltage	Vi	-35	V	
Thermal Resistance from Junction to Air	R <sub>θJA</sub>	83.3	°C/W	
Operating Junction Temperature Range	T <sub>OPR</sub>	-40~+125	°C	
Storage Temperature Range	T <sub>STG</sub>	-65~+150	°C	

## ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE (Vi=-19V,lo=500mA, Ci=2.2µF,Co=1µF, unless otherwise specified )

Symbol	Test conditions		Min	Тур	Max	Unit
Output Voltage Vo	T <sub>J</sub> =25℃		-11.64	-12	-12.36	V
Vo	-14.5V≤V <sub>i</sub> ≤-27V, lo=5mA-1A		-11.4	-12	-12.6	V
۸\/٥	lo=5mA-1.5A ,T <sub>J</sub> =25℃	25℃		15	200	mV
Δνο	lo=250mA-750mA ,T <sub>J</sub> =25℃	25℃		5	75	mV
4\/0	-14.5V≤V <sub>i</sub> ≤-30V ,T <sub>J</sub> =25°C	25℃		5	80	mV
Δ۷Ο	-16V≤V <sub>i</sub> ≤-22V ,T <sub>J</sub> =25°C	25℃		3	30	mV
lq	T <sub>J</sub> =25℃	25℃		2	3	mA
Quiescent Current Change Δlq	-14.5V≤V <sub>i</sub> ≤-30V				0.5	mA
∆lq	5mA≤l <sub>O</sub> ≤1A				0.5	mA
$V_N$	10Hz≤f≤100KHz			300		μV/Vo
$\triangle Vo/\triangle_T$	I <sub>O</sub> =5mA			-0.8		mV/℃
RR	-15V≤V <sub>i</sub> ≤-25V,f=120Hz		54	60		dB
Vd	lo=1A ,T <sub>J</sub> =25℃	25℃		1.1		V
lpk	T <sub>J</sub> =25℃	25℃		2.1		Α
	$Vo$ $\Delta Vo$ $\Delta Vo$ $Iq$ $\Delta Iq$ $\Delta Iq$ $V_N$ $\Delta Vo/\Delta_T$ $RR$ $Vd$	$Vo \begin{tabular}{l} $T_J = 25 ^{\circ}$C \\ \hline $-14.5$V $\le $V_i$ $\le -27$V, $Io = 5mA - 1A$ \\ \hline $\Delta $Vo$ \begin{tabular}{l} $Io = 5mA - 1.5A \ , $T_j = 25 ^{\circ}$C$ \\ \hline $Io = 250mA - 750mA \ , $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Vo$ \end{tabular} \begin{tabular}{l} $-14.5$V $\le $V_i$ $\le -30$V \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Iq$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Iq$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Iq$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Iq$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Vo$ $\triangle $T_j = 25 ^{\circ}$C$ \\ \hline $\Delta $Vo$ $\triangle $T_j = 25 ^{\circ}$C$ \\ \hline $Vo$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $Vo$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $Vo$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline $Vo$ \end{tabular} \begin{tabular}{l} $T_j = 25 ^{\circ}$C$ \\ \hline \$	$Vo \begin{tabular}{lll} $T_J = 25 ^{\circ}$C \\ & -14.5$V $\le V_i $\le -27$V, $Io = 5mA - 1A$ \\ \hline $\Delta Vo$ & $Io = 5mA - 1.5A \ , $T_J = 25 ^{\circ}$C$ & $25 ^{\circ}$C$ \\ & $Io = 250mA - 750mA \ , $T_J = 25 ^{\circ}$C$ & $25 ^{\circ}$C$ \\ \hline $\Delta Vo$ & $-14.5$V $\le V_i $\le -30$V \ , $T_J = 25 ^{\circ}$C$ & $25 ^{\circ}$C$ \\ \hline $Iq$ & $T_J = 25 ^{\circ}$C$ & $25 ^{\circ}$C$ \\ \hline $\Delta Iq$ & $-14.5$V $\le V_i $\le -30$V$ \\ \hline $\Delta Iq$ & $5mA \le I_O \le 1A$ \\ \hline $V_N$ & $10Hz \le f \le 100$KHz$ \\ \hline $\Delta Vo/\triangle_T$ & $I_O = 5mA$ \\ \hline $RR$ & $-15$V $\le V_i \le -25$V, $f = 120$Hz$ \\ \hline $Vd$ & $Io = 1A \ , $T_J = 25 ^{\circ}$C$ & $25 ^{\circ}$C$ \\ \hline \end{tabular}$	$Vo \begin{array}{c} T_J = 25^{\circ}C & -11.64 \\ \hline -14.5V \leq V_i \leq -27V, \ lo = 5mA - 1A & -11.4 \\ \hline \Delta Vo & lo = 5mA - 1.5A \ , T_J = 25^{\circ}C & 25^{\circ}C \\ \hline lo = 250mA - 750mA \ , T_J = 25^{\circ}C & 25^{\circ}C \\ \hline \Delta Vo & -14.5V \leq V_i \leq -30V \ , T_J = 25^{\circ}C & 25^{\circ}C \\ \hline lq & T_J = 25^{\circ}C & 25^{\circ}C \\ \hline \Delta lq & -14.5V \leq V_i \leq -30V \\ \hline \Delta lq & 5mA \leq l_0 \leq 1A \\ \hline V_N & 10Hz \leq f \leq 100KHz \\ \hline \Delta Vo/\triangle_T & l_0 = 5mA \\ \hline RR & -15V \leq V_i \leq -25V, f = 120Hz & 54 \\ \hline Vd & lo = 1A \ , T_J = 25^{\circ}C & 25^{\circ}C \\ \hline \end{array}$	$Vo \begin{tabular}{c} $T_J = 25 \columnwidth $^\circ$ & $-11.64$ & $-12$ \\ \hline $-14.5 \columnwidth $^\circ$ & $-11.4$ & $-12$ \\ \hline $\Delta Vo$ & $lo = 5mA - 1.5A$ , $T_J = 25 \columnwidth $^\circ$ & $25 \columnwidth $^\circ$ & $15$ \\ \hline $\Delta Vo$ & $lo = 250mA - 750mA$ , $T_J = 25 \columnwidth $^\circ$ & $25 \columnwidth $^\circ$ & $5$ \\ \hline $\Delta Vo$ & $-14.5 \columnwidth $^\circ$ & $25 \columnwidth $^\circ$ & $5$ \\ \hline $\Delta Vo$ & $-16 \columnwidth $^\circ$ & $25 \columnwidth $^\circ$ & $1.1$ \\ \hline $Vo$ & $lo = 1A$ , $T_J = 25 \columnwidth $^\circ$ & $25 \columnwidth $^\circ$ & $1.1$ \\ \hline \end{tabular}$	$Vo \begin{tabular}{cccccccccccccccccccccccccccccccccccc$

<sup>\*</sup> Pulse test.

## **TYPICAL APPLICATION**

