

# VS7905 Three-terminal negative voltage regulator

# **FEATURES**

Maximum output current

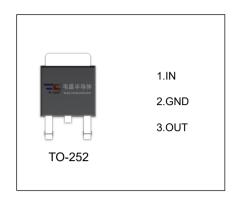
I<sub>OM</sub>: 1.5 A

Output voltage

V<sub>0</sub>:- 5 $\breve{V}$ 

Continuous total dissipation

 $P_D$ : 1.25 W  $(T_a = 25 ^{\circ}C)$ 



# 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>	100	°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=-10V,Io=500mA,Ci=2.2µF, Co=1µF, unless otherwise specified)

Symbol	Test conditions	Min	Тур	Max	Unit
Output Voltage Vo	T <sub>J</sub> =25℃	-4.85	-5	-5.15	V
	-7V≤V <sub>i</sub> ≤-20V, Io=5mA-1A	-4.75	-5	-5.25	V
41/0	Io=5mA-1.5A ,T <sub>J</sub> =25°C		15	100	mV
Δνυ	lo=250mA-750mA ,T <sub>J</sub> =25℃		5	50	mV
Line Regulation ΔVo	-7V≤V <sub>i</sub> ≤-25V ,T <sub>J</sub> =25°C		12.5	50	mV
	-8V≤V <sub>i</sub> ≤-12V ,T <sub>J</sub> =25°C		4	15	mV
Iq	T <sub>J</sub> =25℃		1.5	2	mA
Quiescent Current Change $\frac{\Delta lq}{\Delta lq}$	-7V≤V <sub>i</sub> ≤-25V			0.5	mA
	5mA≤I <sub>O</sub> ≤1A			0.5	mA
$V_N$	10Hz≤f≤100KHz,T <sub>J</sub> =25°C		125		μV/Vo
Δ\νο/ΔΤ	I <sub>O</sub> =5mA		-0.4		mV/℃
RR	-8V≤V <sub>i</sub> ≤-18V,f=120Hz	54	60		dB
Vd	lo=1A ,T <sub>J</sub> =25℃		1.1		V
lpk	T <sub>J</sub> =25°C		2.1		Α
	Vo ΔVo ΔVo Iq ΔIq ΔIq ΔIq V <sub>N</sub> ΔVo/ΔT RR Vd	$Vo \begin{tabular}{lll} $T_J = 25 \columnwidth Columns & $T_J = 25 \columns & $T_J = 25 \co$	$Vo \begin{tabular}{c} $T_J = 25 \columnwidth $\mathbb{C}$ & $-4.85$ \\ \hline $-7V \le V_i \le -20V$, $Io = 5mA - 1A$ & $-4.75$ \\ \hline $\Delta Vo$ & $Io = 5mA - 1.5A$, $T_J = 25 \columnwidth $\mathbb{C}$ & $Io = 250mA - 750mA$, $T_J = 25 \columnwidth $\mathbb{C}$ & $-7V \le V_i \le -25V$, $T_J = 25 \columnwidth $\mathbb{C}$ & $-8V \le V_i \le -12V$, $T_J = 25 \columnwidth $\mathbb{C}$ & $-8V \le V_i \le -25V$ & $\Delta Iq$ & $-7V \le V_i \le -25V$ & $\Delta Iq$ & $5mA \le I_0 \le 1A$ & $V_N$ & $10Hz \le f \le 100KHz$, $T_J = 25 \columnwidth $\mathbb{C}$ & $0 \le 1A$ & $V_N$ & $10Hz \le f \le 100KHz$, $T_J = 25 \columnwidth $\mathbb{C}$ & $0 \le 1A$, $T_J = 25 \columnwidth $\mathbb{C}$ & $T_J = 25 \columnw$	$Vo \begin{tabular}{c} $T_J = 25 \color $C$ & $-4.85$ & $-5$ \\ \hline $Vo$ & $-7V \le V_i \le -20V$, $Io = 5mA - 1A$ & $-4.75$ & $-5$ \\ \hline $\Delta Vo$ & $Io = 5mA - 1.5A$, $T_J = 25 \color $C$ & $15$ \\ \hline $Io = 250mA - 750mA$, $T_J = 25 \color $C$ & $5$ \\ \hline $\Delta Vo$ & $-7V \le V_i \le -25V$, $T_J = 25 \color $C$ & $4$ \\ \hline $Iq$ & $T_J = 25 \color $C$ & $4$ \\ \hline $Iq$ & $T_J = 25 \color $C$ & $1.5$ \\ \hline $\Delta Iq$ & $-7V \le V_i \le -25V$ & $1.5$ \\ \hline $\Delta Iq$ & $5mA \le I_O \le 1A$ & $10Hz \le f \le 100KHz$, $T_J = 25 \color $C$ & $125$ \\ \hline $\Delta Vo / \Delta T$ & $I_O = 5mA$ & $-0.4$ \\ \hline $RR$ & $-8V \le V_i \le -18V$, $f = 120Hz$ & $54$ & $60$ \\ \hline $Vd$ & $Io = 1A$, $T_J = 25 \color $C$ & $1.1$ \\ \hline \end{tabular}$	$Vo \begin{tabular}{cccccccccccccccccccccccccccccccccccc$

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

### **TYPICAL APPLICATION**

