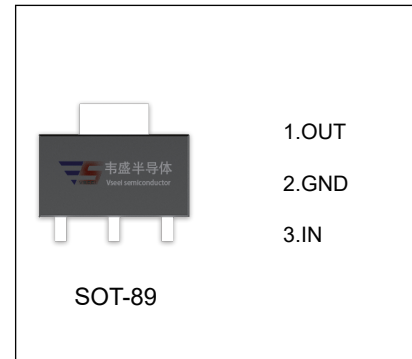


## VS78L15 Three-terminal positive voltage regulator

### FEATURES

- Maximum output current  
 $I_{OM}: 0.1A$
- Output voltage  
 $V_O: 15V$
- Continuous total dissipation  
 $P_D: 0.6 W (T_a= 25 ^\circ C)$



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

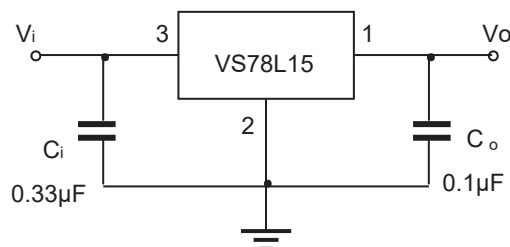
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	$^\circ C/W$
Operating Junction Temperature Range	$T_{OPR}$	-40~+125	$^\circ C$
Storage Temperature Range	$T_{STG}$	-65~+150	$^\circ C$

### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=23V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$ , unless otherwise specified)

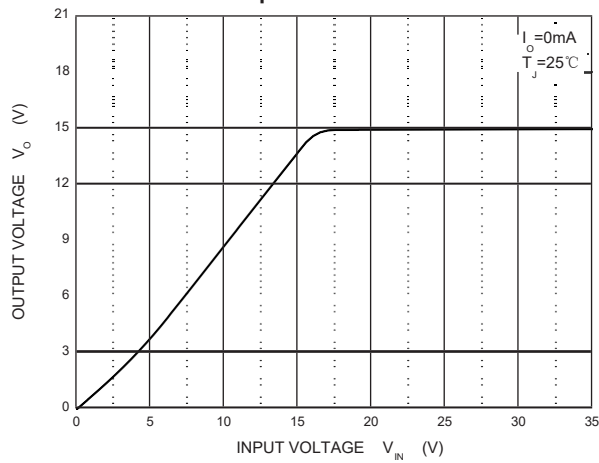
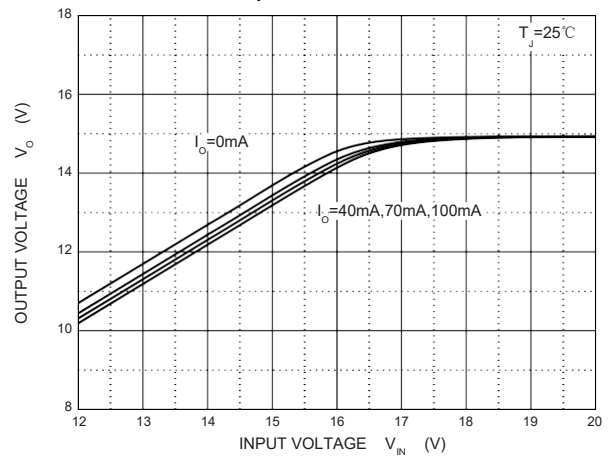
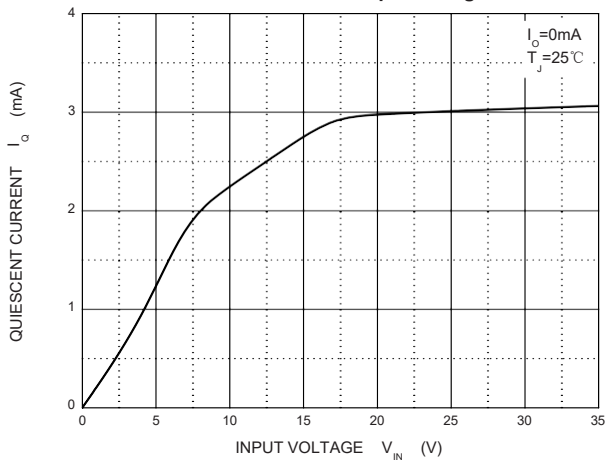
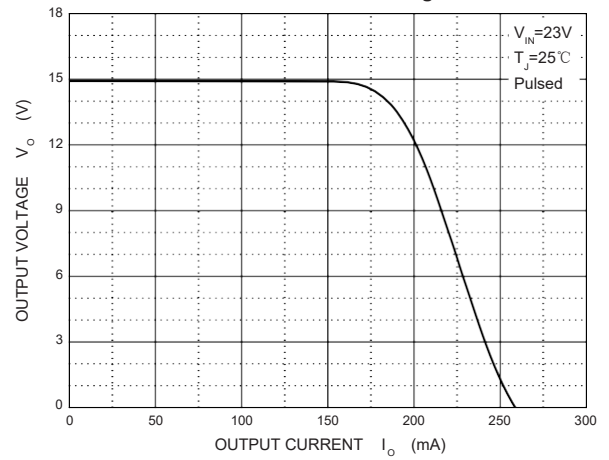
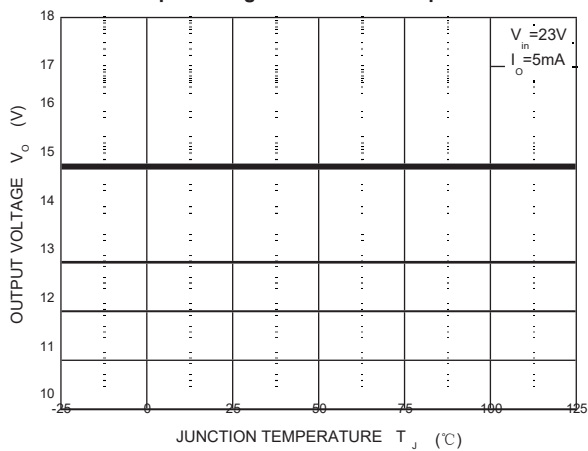
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	$V_o$	$T_J=25^\circ C$	14.55	15	15.45	
		$17.5V \leq V_i \leq 30V, I_o=1mA-40mA$	14.25	15	15.75	V
		$V_i=23V, I_o=1mA-70mA$	14.25	15	15.75	V
Load Regulation	$\Delta V_o$	$I_o=1mA-100mA, V_i=23V, T_J=25^\circ C$		25	150	mV
		$I_o=1mA-40mA, V_i=23V, T_J=25^\circ C$		15	75	mV
Line regulation	$\Delta V_o$	$17.5V \leq V_i \leq 30V, I_o=40mA, T_J=25^\circ C$		65	300	mV
		$19V \leq V_i \leq 30V, I_o=40mA, T_J=25^\circ C$		58	250	mV
Quiescent Current	$I_q$	$T_J=25^\circ C$		4.6	6.5	mA
Quiescent Current Change	$\Delta I_q$	$19V \leq V_i \leq 30V, I_o=40mA$			1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA, V_i=23V$			0.1	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz, T_J=25^\circ C$		82		$\mu V/V_o$
Ripple Rejection	RR	$18.5V \leq V_i \leq 28.5V, f=120Hz$	34	39		
Dropout Voltage	$V_d$	$T_J=25^\circ C$		1.7		

\* Pulse test.

### TYPICAL APPLICATION



Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

**Output Characteristics**

**Dropout Characteristics**

**Quiescent Current vs Input Voltage**

**Current Cut-off Grid Voltage**

**Output Voltage vs Junction Temperature**

**Power Derating Curve**
